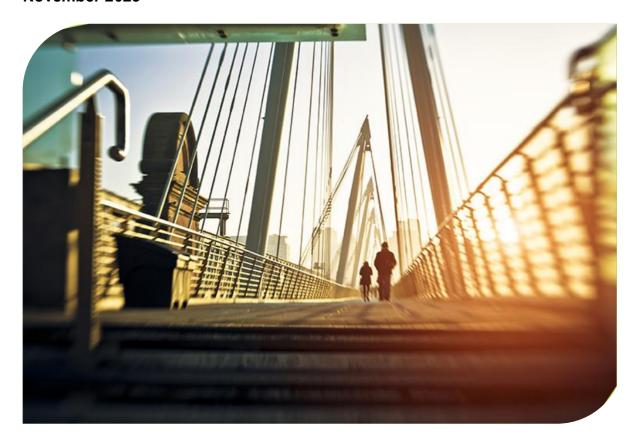


Towards neuro-inclusive care: neurodivergent peoples' needs in gambling harm support and treatment

GambleAware

November 2025



1	Acknowledgements	3
2	Glossary of terms	4
3	Executive summary	8
4	Introduction to this research	14
5	Setting the context	19
6	Gambling behaviour among neurodivergent people	22
7	Experiences of gambling harms among neurodivergent people 27	
8	Drivers of gambling harm among neurodivergent people	31
9	Neurodivergent peoples' experiences of gambling support a treatment	ind 35
10	Perceptions of effective approaches to gambling support and	
	treatment	43
11	Conclusions and recommendations	49
12	Appendices	52
13	Bibliography	60

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IFF Research alone are responsible for the views expressed in this report, which do not necessarily represent the views, decisions or policies of the institutions with which they are affiliated. More information on IFF Research can be found at: www.iffresearch.com.

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2 Glossary of terms

Attention Deficit Disorder (ADD)

See 'Attention Deficit Hyperactivity Disorder (ADHD)'. The term 'ADD' was previously used to describe people who fit the criteria for inattention in ADHD but did not display hyperactivity. The definition of ADHD has since been changed to include people who previously would have been described under ADD, so ADD is no longer used as a formal diagnosis.

Attention Deficit Hyperactivity Disorder (ADHD)

ADHD is a form of neurodivergence that particularly affects attention, hyperactivity and/or impulsivity, in a way that significantly affects their day-to-day life. There are three 'presentations' of ADHD, which someone can move between over time: predominantly inattentive, predominantly hyperactive-impulsive, and combined type (where someone shows both inattentive and hyperactive/impulsive characteristics).

ALSPAC

The Avon and Somerset Longitudinal Study of Parents and Children. This is a research study that has been collecting data on a group of babies and their parents since 1991. We used some of the data this study has collected, to see if there were any links between gambling and neurodivergence.

Asperger's syndrome

See 'Autism'. The term 'Asperger's' or 'Asperger's syndrome' was previously used to describe people who fit some of the criteria for autism, but who do not have an intellectual disability or delays learning to speak. The definition of autism has since been changed to include people who previously would have been described under Asperger's, so Asperger's is no longer used as a formal diagnosis.

Autism

Autism is a form of neurodivergence, where people think and behave differently. The main characteristics of autism include differences in how someone communicates or understands other people, having patterns of behaviour or interests that are considered 'restrictive and repetitive', and being much more or much less sensitive to sensory input (such as light or temperature) than others. Different autistic people may experience each of these characteristics in very different ways and to different extents.

Autism Spectrum Disorder (ASD)

See 'Autism'. Autism spectrum disorder is a medical term sometimes used instead of autism. However, some autistic people and their families do not feel that the term 'disorder' is fair or accurate, and therefore prefer the term 'autism'.

Autonomy-supportive approach

Autonomy-supportive approaches prioritise the interests, values and goals of the person being supported, and encourages them to take an equal role in making decisions about their support. This could include things like giving people options about the kind of support they use, inviting them to choose their own goals for support, and acknowledging and accepting their viewpoints or concerns.

Cognitive Behavioural Therapy (CBT)

CBT is a type of talking therapy, used to help with many common mental health conditions and behaviours that are causing distress. It is based on the idea that how people think, behave and feel are all connected, so changing one can affect the others. CBT typically includes structured activities, such as worksheets or exercises to practise.

Co-occurring mental health difficulties

Where a person experiences more two or more mental health conditions simultaneously. These conditions interact with and exacerbate each other, often making symptoms more severe.

Dyscalculia

Dyscalculia mostly affects how someone understands numbers and maths. Although many people find maths hard for different reasons, people that are dyscalculic find understanding how numbers work especially difficult. For example, someone may struggle to count backwards or find it hard to estimate the number of objects in a small group without counting. This difficulty is 'unexpected' compared to their overall intelligence.

Dyslexia

Dyslexia is a form of neurodivergence that affects how someone processes information. Dyslexia typically leads to challenges with reading and spelling. However, it can affect people in other ways too, such as finding it hard to remember instructions or stay organised. Dyslexia may also bring some positives, as some dyslexic people excel in reasoning or creativity.

Dyspraxia

Dyspraxia affects how easily someone can control, balance and coordinate their body. This can make it more difficult to do things that need a lot of co-ordination, like driving a car, or things that need a lot of small, exact movement, like doing up shirt buttons. It can also affect other aspects of thinking, including time management, controlling emotions, or how someone socialises. Dyspraxia is sometimes known as Developmental Coordination Disorder.

Gambling harm

Gambling harm is used to described negative consequences that happen as a result of someone gambling.

Hyperfixation

An intense state of focus and interest in a particular activity over a prolonged period of time (days, weeks or longer). It can be positive or negative, depending on the activity and whether other tasks or responsibilities are neglected as a result.

Hyperfocus

A state of intense concentration on one specific task or activity. Someone may be unaware of the passage of time or other things happening and typically will find it difficult to change focus to something else. This can be experienced positively or negatively, depending on the activities involved. Although it is often associated with ADHD or autism, anyone can experience hyperfocus.

Neuro-inclusive

A way of being or doing something that respects the needs of people who think in different ways and actively supports everyone to participate. Neuro-inclusive services are designed so that everyone can use the service, and the service actively accommodates and supports any needs relating to neurodivergence (such as autism, ADHD or dyslexia).

Neurodivergence / neurodivergent

Having a way of thinking or behaving that is different from most other people, or what is considered 'typical'. There is no single definition of what should be included, but it usually includes autism, ADHD, dyslexia, dyspraxia and dyscalculia. Some definitions also consider learning disabilities, Tourette's syndrome, epilepsy, mental health conditions (such as OCD or bipolar disorder) and/or brain injuries to be forms of neurodivergence too. Someone displaying neurodivergence is typically considered **neurodivergent**, in contrast to someone who is neurotypical (see below).

Neurodiversity

The idea that everyone's brain works differently. This means that it is natural for some people to think or behave differently from others, rather than being 'wrong' or 'abnormal'.

Neurotype

A particular way of thinking or behaving. Here, we are using it to refer to a particular form of neurodivergence, such as autism, ADHD or dyslexia.

Neurotypical

Having a way of thinking and behaving that is similar enough to the way most people think that it is considered 'typical'. This means they are not considered to have a form of neurodivergence, such as autism, ADHD or dyslexia.

Online gambling platforms

A website or app that is connected to the internet and can be used to bet or gamble without having to go into a shop.

Peer support

Peer support involves people with shared lived experiences helping each other with a challenge they have in common as is typically done through online forums, self-help or support groups, or one-to-one mentoring. Formal peer support programmes may have a person who has overcome a particular challenge in a 'peer supporter' role, with training for this person on how to support others, while more informal peer support simply connects people going through similar experiences.

Problem Gambling Severity Index (PGSI)

The Problem Gambling Severity Index is a questionnaire to measure how many problems someone is experiencing from gambling (or is at risk of experiencing).

Qualitative research

Qualitative research is a way to find out about people's attitudes, beliefs and motivations by looking at non-numerical data. This can include talking to people in an interview or focus group or observing their behaviour. In this report, it refers to our interviews and online community with neurodivergent people experiencing gambling harm (Phase 2).

Rapid evidence Assessment (REA)

REAs are a way to review existing evidence quickly and efficiently, using targeted searches of published research reports. REAs are not as comprehensive as full systematic reviews, which consider all potentially relevant sources, but still produce a rigorous enough evidence base to draw balanced conclusions.

Rejection sensitive dysphoria

Rejection sensitive dysphoria is a severe feeling of physical or emotional pain when experiencing real or perceived criticism, teasing or rejection, which is considered more severe than would be expected for the situation. It is not a formal diagnosis but is often associated with ADHD.

Sensory sensitivity

Sensory sensitivity is experiencing one or more types of sensory input (such as light, sound or temperature) more strongly than other people. This means someone can be overwhelmed by a sensory input like a bright light, even if others are unaffected. It is often associated with autism, but people with other forms of neurodivergence (such as ADHD) may experience this too.

3 Executive summary

Introduction

The intersection of gambling harm and neurodivergence¹ is under-researched. There is little evidence of how gambling harm is experienced by those who are neurodivergent, how it intersects with gender or ethnicity, or how best to deliver gambling support and treatment to neurodivergent people who seek it.

In March 2024, GambleAware awarded funding as part of an open grant programme to IFF Research, in collaboration with Dr Amy Sweet (Honorary Research Fellow at the University of Bristol), Dr Tim Morris (Senior Research Fellow at UCL and the University of Bristol), and Ara (a charity providing drug, alcohol and gambling treatment services across Wales and the South West of England), to carry out research into the relationship between neurodivergence and gambling harms. This research aimed to:

- Explore whether neurodivergent people face an increased risk of experiencing gambling harms;
- Identify the key drivers behind gambling harms among neurodivergent people;
- Examine barriers to accessing formal and informal gambling support; and
- Establish best practices and principles for effective support, treatment, communication, and engagement tailored to neurodivergent people.

The research was conducted iteratively across three phases, each building on the previous stage to enhance the existing evidence base. An Advisory Panel comprising six expert advisors, including both professionals and people with lived experience of neurodiversity and gambling harm, guided the project's design, delivery, and interpretation of findings. The three research phases were:

- Phase 1: Mapping the landscape of neurodivergent people in gambling. This phase
 involved a rapid evidence assessment (REA) conducted by Dr Sweet and secondary
 analysis of data from the Avon and Somerset Longitudinal Study of Parents and Children
 (ALSPAC) conducted by Dr Morris, carried out between April and August 2024.
- Phase 2: Understanding the context and needs of neurodivergent people in gambling. IFF Research facilitated in-depth interviews and an online community with 45 neurodivergent people in Great Britain to explore their own experiences of gambling and related harms, carried out between September 2024 and January 2025.

¹ Neurodivergence is a non-medical umbrella description of people with variation from neurotypical presentation in their mental functions and behaviour; that is to say, they process and experience the world differently to the majority of people. The most commonly cited types of neurodivergence are Attention Deficit Hyperactivity Disorder (ADHD, sometimes also called Attention Deficit Disorder), Autism Spectrum Disorder (ASD), Dyslexia, Dyscalculia and Dyspraxia.

Phase 3: Developing and testing solutions to translate insights into practice. Ara drafted tools and resources for identifying, communicating and engaging with neurodivergent people who gamble. The tools and resources were tested with the Advisory Panel in a workshop facilitated by IFF Research between February and September 2025.

This final report brings together the findings from across all three of these phases. Summary reports of Phases 1 and 2 are available on GambleAware's website.

Setting the context

Neurodivergence

Neurodivergence describes the variation in how people experience and process the world, commonly associated with ADHD, autism, dyslexia, dyspraxia, and dyscalculia (Royal College of Nursing). Neurodivergent characteristics can influence communication, learning, sensory experiences, and approaches to problem-solving (MindMate). It is estimated that around 15% of the UK population are neurodivergent (ADHD Aware). Historically, research and support services have relied on clinical or medicalised language that can be reductive or stigmatising.

Language used in this report to describe neurodivergence

This report adopts sensitive, neuro-affirming, and person-centred language, guided by the Advisory Panel and informed by the Social Model of Disability². It moves beyond reductive clinical descriptions and stereotypes, focusing instead on lived experiences and the unique qualities of neurodivergent people. Identity-first language (e.g., "autistic people") is prioritised, reflecting community preferences, while pathologising terms such as "Autism Spectrum Disorder" are minimised unless required for referencing original research. The term "characteristics" is used instead of "traits" or "conditions" to avoid medicalised framing. References to "neurodivergent people" are specific to the study sample, ensuring commentary remains respectful and reflective of individual experiences. Where clinical terms are retained, such as in the analysis of ALSPAC data, they are used to accurately represent the original source material, to avoid misrepresentation.

Gambling and gambling harms

Gambling harms refer to any negative impacts on individuals or those around them. While not everyone who gambles will experience harm, certain factors, such as gambling risk level and neurodivergent characteristics (that means different people will filter incoming sensory information and output behavioural information in different ways), increase the likelihood of harm for some neurodivergent people. Intersectionality with characteristics such as ethnicity and age can further influence vulnerability. This report highlights the importance of distinguishing between gambling behaviours and gambling harms to avoid conflation and ensure a balanced understanding of when gambling becomes harmful.

Language used in this report to describe gambling and gambling harms

This report employs non-stigmatising, person-centred language, such as "people experiencing gambling harms," to reduce stigma and acknowledge the complexity of individuals' experiences.

² First coined by Mike Oliver, Professor of Disability Studies at The University of Greenwich, in 1983, and developed further by academics across the UK, US, and Australia.

Terms like "gamblers," "problem gamblers," "addiction," and "addict" are avoided due to their potential to stigmatise and oversimplify identities, as noted in GambleAware's language guide on reducing stigma when discussing gambling harms (GambleAware, 2023). The Problem Gambling Severity Index (PGSI), a widely used tool in the UK, is referenced throughout the report to assess gambling risk levels. While the PGSI provides a standardised measure, we acknowledge its limitations, such as reliance on self-awareness and equal weighting of diverse factors. By adopting this approach, the report aims to reduce shame, encourage help-seeking, and focus on the specific circumstances under which gambling may lead to harm.

Gambling behaviour among neurodivergent people

The neurodivergent people interviewed gamble for reasons linked to characteristics of their neurodivergence, or as coping mechanisms stemming from the negative impacts related to their neurodivergence. Motivations include managing social isolation, impulsivity, hyperfocus, and a preference for rules, order and routine. Fast-paced, high stakes games could be particularly enjoyable for those with heightened impulsivity, common among people with ADHD (Jacon et al, 2018; Aymamí et al, 2015; Tobias-Webb and Clark, 2015). Some autistic people in our research mentioned preferring structured games such as slot machines and lottery games. The evidence base exploring the relationship between gambling behaviour and individuals with dyslexia, dyspraxia and dyscalculia is very limited, but our research found that dyslexic and dyspraxic individuals more often preferred visually engaging games, preferring to gamble online due to the clear visuals and reduced social stigma.

Interviews with neurodivergent people found that gambling experiences often start in childhood and stem from family traditions, fostering a sense of inclusion and excitement. Many begin legally gambling at 18 as a rite of passage, as is the case for neurotypical individuals as well, but behaviours often escalate over time, with very few reporting that their gambling has remained constant or decreased. This was particularly the case for those who were older and had had more time for their gambling behaviour to develop and evolve, and those who participated in higher-risk gambling behaviours. Research shows that people with ADHD, particularly those who have experienced symptoms since their childhood are more likely to exhibit greater severity of gambling problems (Breyer et al., 2009; Brandt and Fischer, 2019). Escalation typically includes increased frequency, spending, or game variety. Other factors also contribute to this escalation, such as financial hardship, a desire to win big, the opportunity to socialise, and the ease of access once exposed initially. However, the ALSPAC data analysis showed fluctuating gambling patterns across ages and "neurotypes", with ADHD linked to higher gambling frequency at younger ages but lower frequency later.

Attitudes towards their own gambling varied among the neurodivergent people interviewed in this research, with some feeling safer due to responsible gambling campaigns and better spending control, and others reporting stress and financial strain. Those with gambling behaviours classed as low-risk, such as those playing bingo or the lottery, often did not view their activities as gambling at all. Negative attitudes were also shaped by witnessing gambling harms in family or friends, reinforcing caution and concern.

Experiences of gambling harm among neurodivergent people

Gambling harms are not experienced by all neurodivergent people who gamble. However, higher PGSI scores, certain "neurotypes", intersectionality, and stigma are all linked to an increased risk. In the interviews, neurodivergent people with moderate or high-risk gambling behaviours (PGSI scores

of 3+) were more likely to report harms, while those with low-risk behaviours (PGSI scores of 1-2) often experienced gambling as a positive social activity. ADHD and autistic characteristics are associated with a higher likelihood of experiencing gambling harms, according to ALSPAC data analysis and wider literature (Brunault et al., 2020; Breyer et al., 2009; Aymami et al., 2015; Retz et al., 2016; Fatseas et al., 2016; Jacob et al., 2018; Faregh and Derevensky, 2020; Mestre-Bach et al., 2021; Dai et al., 2016). In contrast, ALSPAC data analysis found limited evidence of a relationship between dyslexia, dyspraxia, or dyscalculia and gambling harm, with lower reported frequency and severity of harm among these groups.

Qualitatively, the harms experienced by neurodivergent people broadly fell into seven categories: financial, relationship, health and wellbeing, employment, and secondary harms. This largely aligns with wider research conducted into gambling related harm, such as that by Erika Langham et al. that proposes a definition and conceptual framework of gambling related harm (2016). Financial harm was the most common, including loss of savings, debt, and difficulty paying for essentials, often described by participants as driven by impulsivity and hyperfocus. This can often lead to other types of harm, such as issues with relationships. Financial pressures, especially for participants with ADHD or autistic people experiencing hyperfocus, often strained relationships with partners, family, and friends.

The next most common harm was relationship harms, often arising from communication breakdowns, secrecy, and financial strain, and sometimes leading to long-term tension or breakdowns. Health and wellbeing harms included increased stress, mental health difficulties, and, in severe cases, where there were co-occurring mental health difficulties, self-harm or suicidal thoughts. Additionally, employment harms often resulted from time mismanagement and overspending, which affected job performance. This was particularly the case for neurodivergent people interviewed in this research who experienced hyperfocus and heightened impulsivity as they struggled to withdraw from gambling. Additionally, easy access to online gambling allowed some to gamble during work hours, requiring them to work late to compensate.

Finally, the neurodivergent people interviewed were often 'affected others' and had experienced secondary harms, such as those caused by friends or family members' gambling. These harms influenced these people's attitudes and behaviours, often leading to more cautious gambling practices.

Experiencing any of these harms can exacerbate other experiences related to neurodivergence, such as social isolation and feelings of shame, making it more difficult to seek support or break harmful cycles.

Drivers of gambling harm among neurodivergent people

Characteristics like impulsivity, need for stimulation, and hyperfocus in neurodivergent people often drive both gambling behaviours and related harms. Impulsivity, especially common in ADHD and autism, makes it hard for people to control their gambling and can lead to unplanned decisions (Jacob et al., 2018; Aymamí et al., 2015; Tobias-Webb and Clark, 2015). Gambling advertisements and app notifications can exacerbate impulsive behaviours, leading to unplanned gambling sessions (Cairncross et al., 2019).

A strong need for stimulation, especially among those with ADHD or autistic people, can lead to repetitive gambling behaviours. Online gambling products often exploit this need through engaging graphics, quick wins, and psychological 'nudges' to encourage them to gamble, making gambling appear less risky and encouraging prolonged engagement (Close and Lloyd, 2021). In the interviews,

neurodivergent people recalled that hyperfocus, another characteristic of ADHD and autism, resulted in their intense concentration on gambling activities, which for them led to overspending and prioritisation of gambling over other responsibilities.

For some neurodivergent people, gambling becomes a coping mechanism for challenges such as social isolation, stress, or co-occurring mental health difficulties. Autistic people, in particular, may use gambling to manage anxiety or boredom, while younger people with ADHD may see it as an opportunity for social interaction (Cairncross et al., 2019). However, negative gambling experiences can exacerbate existing mental health difficulties, reinforcing harmful cycles.

Within the interviews, neurodivergent people noted that stigma, isolation, and judgement harmed them, especially those already struggling with social interactions. This is consistent with GambleAware's previous research into stigma and the impact of gambling harms on minorities, as well as wider research which shows that people who gamble from ethnic minority or religious backgrounds experience higher levels of stigma than white or non-religious counterparts (Shipsey et al., 2025, Clearview & Ipsos., 2023). Older age groups report less gambling-related stigma than younger groups (Shipsey et al., 2025). In conservative communities, fear of stigmatisation is a major barrier to disclosing gambling harm, reinforcing secrecy and increasing risk.

Neurodivergent peoples' experiences of gambling support and treatment

Within the interviews, neurodivergent people at higher risk of gambling harm (PGSI score of 8+) were more likely to seek advice, support, and treatment, while those at lower risk often felt in control and did not seek help. Many at both higher and lower risk of gambling harm relied on informal support, such as talking with family or blocking gambling sites themselves, which helped build trust and accountability. Formal support, like Gamban (which blocks access to gambling sites) and counselling, provided structured help and coping strategies, but people usually sought it only after serious negative outcomes, making recovery harder.

Neurodivergent people face barriers to accessing gambling support, similar to those faced by women (IFF Research, 2023), and minoritised communities (Clearview & Ipsos, 2023), as GambleAware's previous research demonstrates. Many have low awareness of specialist services or do not see their gambling as problematic, especially if it helps them cope or is perceived as a passing interest. Stigma and fear of judgement, especially among neurodivergent men from conservative backgrounds, discourage help-seeking. Past negative experiences and concerns about being misunderstood also deter neurodivergent individuals.

Service delivery can be challenging, as most support is designed for neurotypical people and may be inaccessible due to complex processes, overstimulating environments, rigid models, and lack of follow-up. Many prefer informal or independent support, and generic advice that does not address neurodivergent needs can cause disengagement and feelings of overwhelm.

Perceptions of effective approaches to gambling support and treatment

The REA, interviews with neurodivergent people, and the Advisory Panel all agreed that gambling support must be tailored to individual needs and characteristics, not just formal diagnoses. Services should adapt to different communication styles, use clear and simple language, and offer visual aids to reduce cognitive overload, especially for those with ADHD or dyslexic people.

Support should promote autonomy and self-management, giving clients choice and clear reasons for



decisions (Reeve, 2009). Therapies, including CBT, should be customised to address neurodivergent characteristics like impulsivity and attention difficulties. Services must consider sensory sensitivities and offer flexible formats—online, hybrid, or in-person—in calm, stigma-free environments.

Peer support networks and digital self-help tools can empower neurodivergent people and help reduce barriers like social anxiety and stigma. Staff should receive neurodiversity training, ideally led by those with lived experience, and training should include cultural sensitivity and intersectionality.

To improve engagement, services should increase outreach, simplify processes, provide reminders, and offer both group and one-to-one support. Ara developed <u>resources for the sector</u>, including training packs, screening questions, email templates, and an executive summary to help put these principles into practice.

Conclusions and recommendations

This research shows a complex link between neurodivergence and gambling, with major gaps in understanding neurodivergent people's experiences, harms, and support needs. Characteristics like impulsivity, hyperfocus, social difficulties, and a need for stimulation drive gambling behaviours and increase harms, such as financial strain, relationship breakdown, poor health, and setbacks at work or school. Stigma, shame, and lack of tailored support further isolate neurodivergent people and make it harder to seek help.

Evidence gaps remain, especially around how neurodivergence intersects with gender and ethnicity, and the effectiveness of current gambling treatments. Existing research mostly focuses on ADHD and autism, with little attention to dyslexia, dyspraxia, and dyscalculia. The following recommendations aim to address these gaps and improve support for neurodivergent people:

- Build a neurodiversity-aware workforce: Train staff in neurodivergence and its intersection with gambling harms, embedding neurodiversity in harm minimisation strategies and consumer protection measures.
- Embed neurodivergence in support and treatment: Screen at assessment for neurodivergent characteristics, simplify and diversify access routes and delivery formats, and adapt tools and treatment plans to reflect individual characteristics such as sensory sensitivities and attention patterns.
- 3. **Adopt peer-led and co-produced support**: Develop structured peer support programmes and involve neurodivergent people with lived experience in designing and evaluating services.
- 4. **Strengthen data collection:** Collect and analyse data on neurodivergent characteristics and demographics to inform best practices and identify gaps in support.
- Understand what works and build a movement to put this knowledge into practice: Further
 investigate how gambling harms intersect with other identities and evaluate the effectiveness of
 interventions for neurodivergent people experiencing gambling harms.

4 Introduction to this research

Background and objectives

Despite evidence highlighting the disproportionate burden of gambling harms on marginalised and disadvantaged groups, research in Great Britain has only recently shifted from a broad "catch-all" approach to more targeted studies focusing on the drivers of harm for these communities (Levy et al., 2020). However, within this evolving focus, the intersection of gambling harm and neurodivergence remained significantly under-researched. Consequently, there has been to date limited understanding of how neurodivergent people experience harm from their gambling or how best to deliver effective support and treatment tailored to their needs.

In 2024, GambleAware funded IFF Research, working with Dr Amy Sweet (University of Bristol), Dr Tim Morris (UCL and the University of Bristol), and Ara (a charity specialising in drug, alcohol, and gambling treatment services), to investigate the link between neurodivergence, gambling and gambling harms. The project aimed to provide insights and practical tools for the sector, helping improve support for neurodivergent people. Many questions remain about neurodivergence, gambling and gambling harms, so this research focused on understanding lived experiences and drivers to guide future work. The research aims were:

- To understand whether there is any increased risk of gambling harms through being neurodivergent, including what the increased risks are, and how the risks interact with each other;
- To understand the drivers of gambling harms experienced by neurodivergent people; focusing on how this compares to other demographic markers such as age, gender and ethnicity;
- To understand the barriers to formal and informal gambling support for neurodivergent people; and
- To identify principles and practices for appropriate support and treatment communication and engagement with neurodivergent people, including how this varies by "neurotype".

Methodology

Overview

The research used an iterative, three-phase approach, guided by a bespoke Advisory Panel that shaped the project's design, delivery, and interpretation of findings. The Panel included six experts; professionals, and people with lived experience of neurodivergence and gambling harm, and specialists in supporting neurodivergent people. We began by mapping the research landscape, and then built on the evidence at each stage, avoiding repetition and adapting the research as new insights emerged, focusing on the needs of neurodivergent people.

We used mixed methods: a rapid evidence assessment (REA), secondary analysis of ALSPAC data (a birth cohort study), qualitative interviews, and an interactive online community. This approach combined different strengths, helping reduce unconscious bias and neurotypical assumptions in the research.

Our approach aligned with GambleAware's <u>Engaging and Involving People with Lived Experience of Gambling Harms in Research and Evaluation Guidelines</u> by prioritising and centring the agency of people with lived experience.

Figure 1 Overview of the research approach

1: Mapping the landscape

Rapid evidence assessment (REA) of 48 academic articles

Secondary analysis of data from the Avon Longitudinal Study of Parents and Children (ALSPAC)

Apr - Aug '24



- Workshop with Advisory Panel to inform overall research design
- Additional workshop to share Phase 1 research findings and discuss implications

2: Understanding context & needs



Qualitative research with neurodivergent participants who gamble

- Depth interviews (45-60 mins) conducted on Teams with 17 participants
- 5-day online community with 28 participants

Sep '24 – Jan '25

 Workshop with Advisory Panel to share Phase 2 research findings and discuss implications

3: Developing and testing solutions



A half-day workshop was conducted with the Advisory Panel to inform the development of sector resources, the invite was also extended to other experts to have a good reach

This was over 2 separate sessions to facilitate participant availability

Jan - Apr '25

 Workshop with Advisory Panel and other experts to test and refine draft resources for practitioners

Phase 1: Mapping the landscape of neurodivergent people in gambling

Rapid evidence assessment (REA)

We carried out a Rapid Evidence Assessment to summarise existing research on gambling and neurodiversity for use in later phases. REAs systematically review and appraise literature with the rigour of a full systematic review but deliver findings more quickly, helping us keep pace with changing policy.

The REA was conducted in line with <u>Government Social Research guidelines</u>. We identified and screened 52 papers, excluding 12 that did not focus on gambling harms. Snowballing from reference lists added 8 more studies. The REA is based on 48 peer-reviewed academic articles; we found no policy reports or grey literature.

Due to limited research on neurodiversity and gambling, the REA included studies on behavioural or individual risk factors linked to neurodivergence and gambling harm. It focused on forms of neurodivergence such as ADHD/ADD, autism, dyslexia, dyscalculia and dyspraxia. We included peer-reviewed articles and working papers from fields like gambling studies, psychology, health, and public health, covering both UK and international evidence in English. The REA used various study types,



including meta-analyses, reviews, and empirical research. We noted and reported relevant study limitations. **Error! Reference source not found.** details the search terms and process.

Analysis of ALSPAC data

We analysed data from the Avon and Somerset Longitudinal Study of Parents and Children (ALSPAC) to measure the increased risk of gambling harms among neurodivergent people and to examine drivers of harm identified in the REA.

ALSPAC is a long-term birth cohort study in Avon, near Bristol. It began with mothers expecting babies between April 1991 and December 1992, and has followed them, their children, and partners for over 30 years. The study includes around 15,000 children after a sample boost at age seven.

The ALSPAC cohort mostly reflects the UK population when compared with 1991 Census data, though some ethnic minorities, single-parent families, and renters are underrepresented (Boyd et al., 2013). The study collects data on health, behaviours, and family environment at multiple timepoints, enabling detailed longitudinal analysis.

Below is a summary of the gambling and neurodiversity measures from ALSPAC used in this analysis, and further detail in Appendix B: ALSPAC technical detail.

- **Gambling frequency:** ALSPAC children were asked about their gambling behaviour, including types of gambling (e.g. slot machines, online gambling, table games) and the frequency with which they gambled at ages 17 (2009), 20 (2012), 24 (2016) and 30 (2022).
- Problem Gambling Severity Index (PGSI): This is a widely used and validated tool that is
 used as a proxy for measuring gambling harms. ALSPAC children were asked to complete
 the PGSI at ages 19, 20, 24 and 30. More information on PGSI scores and how these are
 determined can be found in 'Chapter 5: Setting the context', under the heading Gambling
 and gambling harms.
- Attention Deficit Hyperactivity Disorder (ADHD): Mothers of ALSPAC children were asked to complete the Development and Well-Being Assessment (DAWBA) for their children at ages 7, 10, 13 and 15. The child's school teacher was also asked to complete the DAWBA for the child at age 7.
- Autism Spectrum Disorder (ASD): Mothers of ALSPAC children completed the Skuse
 Social Communication Disorder Checklist (SCDC), a widely validated and reliable screening
 instrument of verbal/nonverbal communication and social reciprocity for measuring ASD
 related "traits", for their child at age 8. For information on language used to discuss autism
 in this report please see 'Chapter 5: Setting the context', under the heading
 Neurodivergence.
- Behavioural disorders: 3 measures of behavioural disorders were included in the DAWBA
 at the same ages outlined for ADHD above. A fourth measure was based on ALSPAC
 children self-reports at age 22 about whether they had ever received additional support at
 school, college/university, or in the workplace for behavioural problems or hyperactivity.
- Dyslexia: ALSPAC children were assessed on the accuracy component of the Neale
 Analysis of Reading Ability (NARA II) at age 9, using deviations of equivalent reading age

from biological age. Additionally, mothers of ALSPAC children were asked to report whether they had been told that the child was dyslexic by age 9; and ALSPAC children were asked to self-report whether they had ever received additional support at school, college/university or in the workplace for dyslexia at age 22.

• Dyspraxia: ALSPAC children were directly assessed on motor impairment and IQ at age 8. Additionally, mothers of ALSPAC children were asked to report whether they had been told that their child had dyspraxia by age 9; and ALSPAC children were asked to self-report at age 22 about whether they had ever received additional support at school, college/university or in the workplace for dyspraxia.

We first used descriptive statistics to assess the prevalence of gambling behaviours and harms among participants with and without neurodivergent characteristics. We then ran regression models to estimate links between neurodivergence and gambling frequency or harm at ages 17, 20, 24, and 30, using ordered logistic regression for gambling frequency and PGSI group outcomes.

To check for confounders, we ran each model twice: first with sex, ethnicity, and birth order, then adding parental socioeconomic position, education, and age. Neurodivergence measures mostly predate gambling measures, reducing the risk of reverse confounding. However, both measures may have some error, as they imperfectly represent behaviours and characteristics across all participants. Using multiple timepoints improves accuracy as proxies for long-term patterns.

Comparisons throughout the report are between those identified with a specific neurodivergence (e.g. ADHD) and those not, rather than simply neurotypical versus neurodivergent, as some may have one neurodivergent characteristic but not another. Appendix B: ALSPAC technical detail provides details on effect sizes.

Phase 2: Understanding the context and needs of neurodivergent people in gambling

We explored the reasons, situations, and effects of gambling and harms among 45 neurodivergent people living in Great Britain. We used two qualitative methods to suit different participant needs and reduce barriers to involvement:

- Online community: carried out with 28 participants over five days in November 2024. Participants completed activities and engaged in written discussions as a group, designed to uncover their experiences with gambling over time, perspectives on harm, and views on support. Benefits of this approach include anonymity from those who may feel shame or stigma discussing gambling, extending our reach to individuals who may not have taken part otherwise. An incentive of £50 (e-voucher) was offered to all who took part (pro-rated in the event of partial completion).
- Individual depth interviews: carried out with 17 participants in November and December 2024. Interviews were carried out via Zoom, Microsoft Teams, or by telephone, according to participant preference. Discussions covered the same topics as in the online community but allowed us to capture in detail the lived experiences of participants who felt comfortable participating in this way, as well as offering an alternative to taking part online. An incentive of £40 (e-voucher) was offered to all who took part.

We recruited participants through two specialist agencies, using a sample frame to ensure diversity by "neurotype", gambling frequency, risk level (PGSI), support history, age, socioeconomic grade, and ethnicity. Appendix C: Phase 2 sample composition outlines the sample.

Throughout this project, we prioritised the safety and wellbeing of participants and researchers by adhering to robust safeguarding procedures before, during, and after fieldwork. All researchers have DBS checks and have received specialist safeguarding training, with a particular focus on working with vulnerable groups. During fieldwork, participants were fully informed about the nature of the research and their rights, including the option to withdraw or skip questions should they wish. Researchers are also trained to stop interviews if they believe it is having a negative impact on the health, safety or wellbeing of the participant.

No safeguarding concerns were raised during this research, but in the event that they were, participants would have been signposted to appropriate support services. A clear escalation procedure would have also been followed, with all incidents recorded securely in a project-specific log. If a researcher suspects there is a risk to a participants life, or of serious and immediate risk of harm to a participant, they will escalate this to the emergency services wherever possible.

Phase 3: Developing and testing solutions to translate insights into practice

Translating insight into practice is essential to support industry stakeholders to apply the insight from the research into their day-to-day work and to ultimately benefit neurodivergent people at risk of or experiencing gambling harm.

Using evidence from Phases 1 and 2, and input from consortium members, Ara developed tools and resources to help identify, communicate with, and engage neurodivergent people in gambling support. The Advisory Panel and other experts, including academics and charities experienced in neurodiversity, reviewed and tested these materials to ensure recommendations were accurately interpreted and applied.

5 Setting the context

Neurodivergence

Neurodivergence describes the variation in the human experience of the world, be that in school, at work, or through social relationships. Neurodivergent people experience the world differently from neurotypical individuals, whose cognitive processing aligns more closely with societal norms and expectations. This can influence communication styles, learning preferences, sensory experiences, and approaches to problem-solving.

Driven by a complex interplay of genetic and environmental factors, it is estimated that around 15% of the UK population are neurodivergent (ADHD Aware). The most commonly cited forms of neurodivergence in the available literature are Attention Deficit Hyperactivity Disorder (ADHD), Autism Spectrum Disorder (ASD), Dyslexia, Dyscalculia, and Dyspraxia (Royal College of Nursing).

Language used in this report to describe neurodivergence

We aim to use sensitive and neuro-affirming language throughout this report in line with the guidance of our Advisory Panel, who emphasised the importance of recognising the limitations of the medical model and clinical descriptions in accurately reflecting the experiences of neurodivergent people. Previous research has often relied on stereotypical presentations and diagnostic criteria, which can be reductive and may pathologise neurodivergent characteristics, framing them as deficits or disorders rather than acknowledging the diversity and strengths within neurodivergent communities. Such approaches tend to focus on standardised diagnoses and 'symptoms', overlooking the nuanced ways neurodivergence manifests in individuals, shaped by factors including culture, environment, and personal identity, or the possibility that a neurodivergent person is self- or un-diagnosed. This can result in misrepresentation and exclusion from support if experiences do not fit typical clinical profiles.

To address this, our report prioritises lived experience and adopts a holistic, person-centred approach, moving beyond stereotypes and recognising the unique qualities and challenges faced by each individual. We have reflected on previous research findings with integrity, whilst ensuring our commentary and discussion of implications are informed by the lived experiences of neurodivergent people. Specifically, to ensure our language is both respectful and reflective of the preferences and experiences of those involved in our research, we have applied the following conventions:

- Throughout the report, we use the term "people" when describing research participants.
 References to "neurodivergent people" specifically relate to individuals within our sample, rather than making generalisations about the broader neurodivergent community.
- We have adopted identity-first language (e.g., "autistic people") wherever possible, reflecting the preferences of many, including those specifically in the autistic community (Botha et al., 2021; Bury et al., 2020; Bradshaw et al., 2021; Kenny et al., 2016; Lei et al., 2021). While there is no universal consensus on preferred language (Vivanti, 2020), research suggests person-first language (e.g., "person with autism") is generally less favoured.
- We have also minimised the use of pathologising terms such as "Autism Spectrum Disorder" (ASD) or "Neurological Development Disorder" (NDD), which are often viewed negatively (Bottema-Beutel et al., 2021; Kenny et al., 2016; Ryan and Runswick-Cole, 2009). Asperger's Syndrome, previously used to describe autistic individuals without

language delay or intellectual disability, is referenced only where necessary to accurately reflect original research findings.

Finally, we recognise that terms such as "neurodivergent condition" or "traits" are associated
with the medical model. We use the term 'characteristics' throughout this report with some
limited use of the terms "neurotypes" and "traits" to reflect previous research and where
these terms were used by neurodivergent research participants and our Advisory Panel.

Some prior research uses language that may be stigmatising or disempowering for neurodivergent people and those experiencing gambling harms; however, in some instances, altering this language may risk misrepresenting the original meaning. Therefore, where findings from published research use clinical or outdated terms (such as 'ASD' or 'symptoms of ASD'), we have retained these terms to accurately represent the source material.

Similarly, when analysing ALSPAC data, individuals who scored above the threshold for social communication disorder using the Skuse Social Communication Disorder Checklist (SCDC) are referred to as having ASD, as per the validated screening tool (Skuse et al., 2005). It is important to interpret these findings with caution, as high scores on the SCDC do not constitute a clinical diagnosis of autism, and this category may not fully represent the wider autistic population.

Gambling and gambling harms

Gambling harms refer to any negative impacts on individuals or those around them. Not everyone who gambles will experience harm, and the prevalence of gambling harm varied among individuals. However, gambling risk level and certain neurodivergent characteristics increased the risk of experiencing gambling harms among some neurodivergent people, as well as the intersectionality of other characteristics, such as ethnicity and age.

Language used in this report to describe gambling and gambling harms

This report employs non-stigmatising, person-centred language, such as "people experiencing gambling harms" in line with previous research on the language preferences of these individuals (GambleAware, 2023). Terms like "gamblers," "problem gamblers", "addiction", and "addict" were not used in this report because they can carry a heavy social stigma and reduce people to their gambling behaviours, ignoring the complexity of their experiences and identities. This approach aims to reduce the stigma and shame associated with seeking support, acknowledging the multifaceted identities of people beyond their gambling experiences and refraining from attributing blame (Pliakas et al., 2022).

The Problem Gambling Severity Index (PGSI) is referred to throughout this report. This is a widely used and validated screening tool in the UK for assessing the level of risk associated with an individual's gambling behaviour and identifying any adverse consequences resulting from this behaviour. The PGSI consists of nine items, each with four response options which are scored and summed to categorise individuals as non-problem gamblers, low risk (PGSI 1-2), moderate risk (PGSI 3-7), or problem gamblers (PGSI 8+) (in this report referred to as 'high risk'). Despite its widespread use in national and international studies, including the British Gambling Prevalence Surveys, the PGSI has notable limitations. It assigns equal weight to factors that may differ qualitatively in their impact, relies on self-awareness which may fluctuate over time or with treatment, and groups individuals with diverse experiences of gambling harm into the same highest risk category. While it remains a standardised and consistently applied measure in the field, it should be recognised as an imperfect tool for capturing the full severity and nuance of gambling-related harms.

In discussing gambling in this report, we have been cautious to distinguish between general gambling behaviours and the harms associated with gambling. This distinction helps prevent the conflation of gambling with gambling harms, allowing for a more balanced framing of gambling behaviour. By doing so, we aim to acknowledge that not all gambling leads to harm and to focus on the specific circumstances under which gambling can become harmful.

6 Gambling behaviour among neurodivergent people

Key findings

Neurodivergent people often begin gambling at age 18, with early experiences linked to positive family memories and social bonding (Gambling Commission, 2021).

Motivations include coping with isolation (Cairncross et al., 2019), seeking stimulation or routine, managing emotions or sensory overload, and impulsivity or hyperfocus (Jacon et al, 2018; Aymamí et al, 2015; Tobias-Webb and Clark, 2015), especially in ADHD and autism.

From our interviewed participants, most prefer online gambling due to its accessibility and fewer sensory or social challenges compared to physical venues.

Gambling behaviour changed over time, with older or higher-risk individuals showing increased frequency, spending, or variety of games played (Gambling Commission, 2021).

Attitudes towards gambling varied from our interviewed participants: some feel safer because of responsible gambling campaigns while others experience anxiety, stress, or negative perceptions about gambling.

From the ALSPAC data, different "neurotypes" show distinct patterns: ADHD is linked to more frequent gambling at younger ages, while ASD, dyslexia, and dyspraxia are associated with lower or less frequent gambling compared to neurotypical peers.

How and why neurodivergent people gamble

The neurodivergent participants interviewed within this research gambled due to characteristics linked to their neurodivergence or as a coping mechanism for its impacts. Multiple motivations often combine, creating complex drivers for gambling behaviour. Reasons included:

Difficulty navigating social interactions and social isolation

Wider research has found that socialising is a key motivation for gambling, particularly among people with ADHD (Cairncross et al., 2019). However, for those experiencing bullying or social isolation, gambling served as an escape or a way to pass the time. A lack of social connections as a result of being 'different' could also result in feelings of stress, anxiety or boredom, with the act of gambling providing a coping mechanism to manage these feelings. This experience was particularly common among autistic people interviewed.

"I want some sort of excitement in my life. Not having a social life or not having friends, it's almost not worth living, if you think about it... to take away the pain, the disappointment of [not having social connections] for me I turn to things like [gambling]. It is unhealthy, but at the time you're not thinking of it like that because you're not feeling the adverse effects immediately."

36-54, Male, Asian/Asian British, has ADHD and is autistic, High risk level

Impulsivity

Within the interviews, neurodivergent participants with heightened impulsivity reported that high-stakes games such as roulette and poker could be particularly enjoyable. This was particularly common among people with ADHD. Existing research suggests that certain characteristics associated with ADHD and/or autism may increase the likelihood that someone may engage in a more frequent or risky gambling behaviours. These characteristics include: impulsivity, including challenges inhibiting urges or making impulsive decisions (Jacon et al, 2018; Aymamí et al, 2015; Tobias-Webb and Clark, 2015). Neurodivergent people experiencing impulsivity were often able to make quick decisions with limited pause for reflection. Neurodivergent participants involved in this research report that rapid feedback in the form of an outcome (win/loss) generates positive stimulation and a feedback loop that encourages them to continue playing, driving impulsive behaviour further. For example, a participant diagnosed with ADHD and autism felt they act impulsively and do not see the potential for risk whilst gambling, in the way someone neurotypical might.

"Because it's gamified as well, when I lose I want to try again."

18-35, Male, is autistic, High risk level

Hyperfocus

Hyperfocus is an intense state of deep concentration that is difficult to break free from and is common among those with ADHD or who are autistic. While many neurodivergent people experience hyperfocus generally, it can also offer distraction and relief from overwhelming emotions (Levy, J., 2020). Research suggests gambling may have a sedative effect on people with ADHD, causing them to lose track of time and spending (Retz et al., 2016). This was echoed by some neurodivergent participants interviewed, stating they frequently experience hyperfocus when gambling, tending to become "completely absorbed" in analysing game patterns and formulas. This focus was driven by both the excitement of a potential win and a strong desire to understand the mechanics of the game.

"[When gambling] I feel like it's quite interesting because you're really in the zone and focused on what you're doing."

18-35, Female, White, has ADHD and is dyslexic, Moderate risk level

Preference for rules, order and routine

In the interviews, neurodivergent people, especially autistic people, often enjoyed analysing game patterns and mechanics. They preferred repetitive and engaging formats like slot machines and lotteries. The national lottery was especially appealing as it offers routine and consistency.

"It's not that I actually wanted to win money really, it was more the fact that I loved watching the cycles and machines play."

18-35, Male, White, is dyslexic and dyspraxic, High risk level

A strong need for stimulation

In the interviews, neurodivergent people, especially those with ADHD, described gambling for excitement or to "chase dopamine." Gambling provided adrenaline or enhanced experiences like watching sports. Some used it to cope with boredom at home or work, while others, particularly



autistic individuals, found repetitive gambling soothing during sensory overload or emotional distress. This was echoed by a person interviewed:

"Most of my negative compulsions are born of boredom. Be it gambling, drinking, even snacking. Feel like in my moments of boredom at home, if I'm not looking at the odds on foreign football matches, I'm probably opening a big bar of chocolate."

18-35, Male, White, is autistic, Low risk level

Gambling behaviours and preferences within neurodivergence

The neurodivergent people interviewed within this research preferred online gambling for its accessibility and comfort, avoiding the perceived intimidation and overwhelming nature of physical venues due to the sensory sensitivities and social challenges associated with them. Online platforms also appealed for their convenience, allowing gambling at one's own availability, especially late at night or during free time.

"I just like simple games of chance sort of thing. Whether it's numbers or high and low. That's it. Solitaire, I don't know how people can play. It just confuses the hell out of me."

18-35, Male, Mixed / Multiple ethnic groups, is dyspraxic and autistic, Moderate risk level

Limited evidence exists on gambling preferences for those with dyslexia, dyspraxia, or dyscalculia. However, in the interviews, dyslexic and dyspraxic people noted a preference for visually engaging games like roulette over those requiring calculations. They favoured online gambling for its clear visuals and reduced social pressure. These individuals tended to be cautious about gambling, aware of the risks of overspending and low returns, though it's unclear if this relates to their characteristics. ALSPAC data showed similar gambling frequency across neurodivergent participants by sex, ethnicity, and socioeconomic background.

ALSPAC data analysis found gambling frequency among participants with ADHD or autistic people varied by age. At 17 and 20, those with ADHD, ASD, or behavioural disorders were more likely to gamble weekly, with ADHD participants 40% more likely than their peers. However, at 24 and 30, ADHD participants were 40% less likely, and those with ASD were 10-20% less likely to gamble weekly. These age-related inconsistencies suggest caution in interpreting results. Overall, ALSPAC data analysis showed no consistent differences in gambling frequency for participants with ADHD, ASD, behavioural disorders, dyslexia, or dyspraxia.

Gambling behaviour over time

Early experiences

Passive engagement in family gambling activities like lotteries, scratch cards, and horse betting is common in childhood and often seen as a fun treat (Gambling Commission, 2021; Family Kids & Youth et al., 2024). Neurodivergent people interviewed fondly recalled family traditions such as betting on the Grand National, scratch cards at Christmas, and arcade visits during holidays. These experiences helped them feel included, bond with family members (often fathers or grandfathers), and associate gambling with excitement and enjoyment, reinforcing positive views as they grew older.

"[I started gambling because] my Grandad and Dad bet on the horses. [It made me feel] excited, happy, lively and involved because there was an end goal in sight and when I won I'm all or nothing."

36-54, Female, White, is dyslexic and dyspraxic, Moderate risk level

However, some, having witnessed gambling harms as children, became more cautious about gambling as adults.

"He [Grandad] used to get a bit carried away with it and then get upset when he lost money, so I tried not to be like that with him."

18-35, Female, White, has ADHD and is dyslexic, Moderate risk level

Starting to gamble and changing gambling behaviour

Young people often start legally gambling at 18, when it becomes legal and coincides with greater financial independence (Gambling Commission, 2021). Some neurodivergent people interviewed also described this as a rite of passage and a sign of maturity.

"It's your rite of passage as a young adult to actually do it because you can actually physically do it. You can go into a betting shop legally and legally place a bet you know because you've turned 18. So yeah, that's why I did it. And again, it was part of the whole day of, like going to the bookies, placing a bet, going to the pub, buying your first legal pint and stuff like that."

18-35, Male, Mixed / Multiple ethnic groups, is autistic and dyspraxic, Moderate risk level

ALSPAC data analysis showed no consistent differences in gambling frequency by "neurotype" but revealed variations in gambling frequency at different ages. The inconsistency in findings across different ages warrant cautious interpretation of this data.

- At ages 17 and 20, participants identified with ADHD were around 40% more likely to gamble weekly compared to other participants of the same age without ADHD, however the trend was reversed at ages 24 and 30 when they were 40% less likely.
- At ages 24 and 30, participants identified as having ASD were 10-20% <u>less</u> likely to gamble weekly compared to other participants of the same age without ASD.
- People identified with dyslexia were <u>less</u> likely to report gambling at least weekly at any age compared to those without dyslexia.
- People identified with dyspraxia were <u>less</u> likely to report gambling at least weekly at age 20, 24 and 30 (but not age 17) compared to other participants without dyspraxia.

These fluctuations in gambling behaviour align with research showing it varies based on personal and peer experiences (Gambling Commission, 2021). However, in the interviews, neurodivergent people typically reported escalating gambling over time, especially older individuals and those engaging in higher-risk activities such as online slots and instant win games. Escalation involved increased gambling frequency, spending, or game variety.

Within the interviews, factors noted as driving gambling behaviour included initial reasons for gambling among neurodivergent people, as well as broader gambling-related factors:

- **Financial hardship:** Increasing gambling behaviour with the belief that it could be a solution to financial problems.
- Desire to win big: Gambling more frequently and placing bets on different sports, offering the chance to win larger amounts of money.
- **Opportunity to socialise:** Bingo was the most common type of gambling to increase over time, with this seen as a way to spend more time with friends and reduce social isolation.
- **Ease of access:** Once exposed to the ease of online gambling, gambling frequency often increased. This could be compounded by feelings of stress or boredom, or attempts to manage emotional or sensory overstimulation.

Current attitudes towards gambling

In the interviews, neurodivergent participants had mixed views on their gambling, influenced by the games they played, frequency, and sense of control.

Some felt they gambled more safely due to the existence and general awareness of betting safety campaigns and reported better control over their habits and finances. They developed stricter financial limits, leading to more positive or neutral attitudes.

"People are able to do it safer now [gambling]."

18-35, Female, White, has ADHD, Low risk level

Others experienced stress, worry, and anxiety over money, often linked to betting larger sums or losing more than they gained. Awareness of the negative impacts of gambling on family or friends also contributed to negative attitudes.

"I invariably risk money that I can't afford to lose so the anxiety levels are immediately high, just reflecting on it now makes me want to be sick."

55+, Male, White, is dyslexic, Moderate risk level

People playing bingo or the lottery often did not view these activities as gambling, especially those who play these regularly.

"You forget that bingo and the lottery are gambling, you see it on the telly and think it's acceptable."

55+, Female, Mixed / Multiple ethnic groups, has ADHD, Low risk level

7 Experiences of gambling harms among neurodivergent people

Key findings

The neurodivergent people interviewed with moderate (PGSI score of 3-7) or high-risk (PGSI score 8+) gambling behaviours were more likely to experience gambling harms, while those with low-risk behaviours often reported no harm and may find gambling socially beneficial.

ALSPAC data analysis showed people with ADHD and autistic people were twice as likely as their peers without these neurodivergent characteristics to experience gambling-related harm.

Types of gambling harm experienced by the neurodivergent people interviewed included financial difficulties, relationship strain, negative impacts on health and wellbeing, and challenges with employment or education. Neurodivergent people may also experience secondary harms from the gambling behaviour of others, which impacts their own gambling behaviour.

Prevalence of gambling harm

There is evidence that **higher PGSI scores**, **some** "neurotypes", intersectionality and the role of **stigma** are all associated with a higher risk of experiencing gambling harm.

Prevalence by experiences of gambling problems (PGSI)

The Problem Gambling Severity Index (PGSI) is a widely used and validated tool used in the UK to assess the level of risk represented by an individual's gambling behaviours as well as whether they have experienced any adverse consequences as a result of this behaviour. More information on PGSI scores and how these are determined can be found in Chapter 5: Setting the context under the heading Gambling and gambling harms and Appendix B: ALSPAC technical detail.

Within the interviews, the neurodivergent participants were more likely to describe experiencing gambling harms if they scored moderate risk (PGSI score of 3-7) or high risk (PGSI score 8+). In contrast, neurodivergent people whose gambling was 'low risk' (PGSI score of 1-2) often reported no harm as a result of their gambling. For these individuals, gambling positively impacted their lives by providing social opportunities, excitement, and relief from loneliness, boredom, stress, or anxiety linked to neurodivergence.

Prevalence by "neurotype"

When describing ALSPAC analysis and evidence in the wider literature, we have retained the language used in the original source material to ensure findings are accurately represented, even when this takes a more medical or clinical approach.

Analysis of ALSPAC data and evidence in the wider available literature suggests that autistic (hereinafter referred to as ASD) people and people with ADHD were more likely to have a greater severity of gambling problems according to the PGSI scale while evidence of a relationship between dyslexia, dyspraxia or dyscalculia and gambling harm was inconclusive.

ADHD

The ALSPAC data analysis provides strong evidence that people identified as having ADHD are twice as likely to experience gambling harm than their peers without ADHD, with characteristics associated with ADHD linked to higher PGSI scores (8+) and risk of gambling harms. This is supported by the wider literature, with research suggesting that ADHD can increase the risk of gambling harm (Brunault et al., 2020; Breyer et al., 2009; Aymami et al., 2015; Retz et al., 2016; Fatseas et al., 2016; Jacob et al., 2018; Faregh and Derevensky, 2020; Mestre-Bach et al., 2021) and one study identifying ADHD as an independent risk factor for gambling severity (Dai et al., 2016).

Further, within the literature there was evidence of a link between ADHD "traits", frequent gambling, and experiencing gambling harm in adolescents (Faregh and Derevensky, 2011; Hellström et al., 2017; Grall-Bronnec et al., 2011). Some studies found that ADHD "traits" experienced either in adulthood or childhood were associated with "excessive" gambling behaviour (Romo et al., 2015) or were more frequently reported among those seeking gambling treatment (Fatseas et al., 2016).

People who reported characteristics of ADHD into adulthood appeared to experience greater severity of gambling problems compared to those without ADHD or those who did not report ADHD "traits" in adulthood (Breyer et al., 2009). Another study found that people with ADHD spent more time gambling and developed gambling disorder at a faster rate than people without ADHD (Retz et al., 2016).

Autism Spectrum Disorder (ASD)

Similar to ADHD, the ALSPAC analysis showed that people identified with ASD were twice as likely as people without ASD to experience gambling harm. The wider literature included one study with young adults with ASD (aged 18-29 years old) which found that those with higher scores on an ASD screening tool were more likely to have higher levels of gambling disorder symptoms ³ (Grant and Chamberlain, 2021). However, there is limited published research on the link between autism and gambling harms beyond this one study.

Dyslexia, dyspraxia and dyscalculia

No published research was found exploring the prevalence of gambling harm among people with dyslexia, dyspraxia and dyscalculia. However, the ALSPAC data analysis found that PGSI scores reported by participants identified as dyslexic or dyspraxic people were slightly lower than for those without dyslexia or dyspraxia, suggesting lower levels of harm among those with these neurodivergent characteristics compared to those without.

When discussing all forms of neurodivergence and gambling harm, it is worth noting the 'harms paradox'. This paradox notes that in some communities, those who gamble less frequently tend to experience disproportionately greater harms (Wardle et al., 2019). The gambling harms paradox described by Wardle et al (2019) found that even moderate gambling could cause serious harm in marginalised communities. This was often due to greater exposure to gambling and the effects of social and cultural isolation, which can make these harms harder to see and address.

³ Gambling disorder symptoms are defined by the Diagnostic and Statistical Manual of Mental Disorders (DSM-5) as a persistent and recurrent problematic gambling behaviour leading to clinically significant impairments or distress.

Experiences of gambling harms

Moving away from analysis of the ALSPAC data, neurodivergent people interviewed as part of this research experienced gambling harms in five categories: financial, relationship, health and wellbeing, employment and education, and secondary harms. Perceived impacts ranged from severe (e.g., debt or relationship breakdowns) to moderate (e.g., financial stress or strained relationships) to minor (e.g., frustration or overspending). These harms often worsened existing challenges like social isolation and stigma.

Financial harms

Financial harm was the most common gambling impact, often leading to issues with health, wellbeing, and relationships. Participants reported losing savings, accumulating debt, borrowing money, and struggling to afford essentials like food or bills. This could worsen living conditions, cause legal issues, or even lead to homelessness.

"I was getting really stressed because I was trying to save for my house and things."

18-35, Female, White, has ADHD, Medium risk level

Impulsivity and hyperfocus, common in ADHD, increased risks, making it harder to set time or spending limits, walk away, or avoid chasing losses.

"It's just so addictive while you're doing it... when I run out of money, I panic really bad. And then I'm trying to think about how I can get more money to gamble more, and it's stupid, because sometimes I don't have enough money to be doing that in the first place."

18-35, Male, White, has ADHD and is dyspraxic, High risk level

Relationship harms

The second most common harm reported by the neurodivergent people interviewed was relationship issues, caused by communication breakdowns, conflict, and tensions around gambling. Gambling often worsened problems like financial strain, secrecy, or neglect, leading to long-term harm. Some participants didn't initially link their relationship issues to gambling, while others avoided disclosing their harm because family and friends were unaware of their gambling. Financial pressures, especially for those with ADHD or autistic people experiencing hyperfocus, often strained relationships with partners, family, and friends. Some lied to their family and friends about gambling-related financial problems due to a lack of support for their gambling habits.

Health and wellbeing harms

Gambling could also negatively impact neurodivergent people's health and wellbeing, particularly where there were co-occurring mental health difficulties. In a few cases, individuals with co-occurring mental health difficulties mentioned self-harm and attempted suicide because of negative feelings about their lifestyle, including gambling harms they were experiencing.

"I feel as though my self-hatred grows when I'm gambling a lot, and I gamble a lot when I feel mentally unstable. My mental instability can vary greatly due to my ADHD."

18-35, Female, White, has ADHD, Moderate risk level



Employment

Within the interviews, neurodivergent participants with hyperfocus and impulsivity noted challenges withdrawing from gambling, which sometimes affected job performance. Easy access to online gambling allowed some to gamble during work hours, requiring them to work late to compensate.

"I just didn't have a lot of money to get to university because I had to get the train every time. I basically had no money at one point, and I'd apply for overdrafts."

18-35, Male, White, is autistic, High risk level

Secondary gambling harms

Some experienced harm through family members' gambling, such as financial strain or strained relationships caused by theft to fund gambling. These experiences often made neurodivergent people more cautious about their own gambling, with many reducing or stopping as a result.

"On a Friday, my mum did the bingo, and I remember just growing up and being like, 'How can you afford that? You can't afford to give us like money for school, like for a snack, and things like that.' So, I think for a while growing up, I saw it as a really negative thing."

18-35, Female, White, has ADHD, Low risk level

8 Drivers of gambling harm among neurodivergent people

Key findings

Neurodivergent characteristics such as impulsivity, a need for stimulation and hyperfocus can drive risky gambling behaviours, especially in those with ADHD and autism (Aymamí et al. 2015; Cairncross et al, 2019; Grant and Chamberlain, 2021; Jacob et al., 2018; Tobias-Webb and Clark, 2015). Further, online gambling platforms often exploit neurodivergent needs for stimulation with design features like engaging graphics and quick wins (Close and Lloyd, 2021).

Those interviewed who consider gambling a part of their everyday routine often do not think of their gambling as carrying risk and would find it hard to remove this from their routine even if they did.

Gambling can be used as a coping mechanism for social isolation and mental health challenges, with co-occurring difficulties increasing the risk of experiencing harm (Brandt and Fischer, 2019; Waluk et al, 2016).

Characteristics of neurodivergence identified in the ALSPAC data can exacerbate gambling harms, particularly because of fear of stigma and the risk of (further) social isolation.

The characteristics of neurodivergence that contribute to gambling behaviour in the first place often also act as drivers of gambling harms, with characteristics associated with ADHD and autism particularly likely to increase the likelihood of someone engaging in more frequent or risky gambling behaviours and have challenges in risk assessment (Goris et al., 2020; Wu et al., 2018; Jacob et al., 2018; Aymamí et al., 2015; Luke et al., 2012).

Impulsivity

Neurodivergent people, especially those with ADHD or autistic people, may struggle to regulate gambling due to impulsive decision-making without typical checks (Jacob et al., 2018; Aymamí et al.; 2015, Tobias-Webb and Clark, 2015). ADHD "traits" can lead to unplanned gambling, such as being drawn in by pop-up ads, making self-regulation harder (Cairncross et al., 2019). This was echoed by a person interviewed:

"My ADHD makes me very impulsive, so if I get a notification from a betting app, I click on it and intend to just look or spend maybe 5 minutes on there, but it quickly turns into hours."

18-35, Female, Mixed- White and Asian, has ADHD and is autistic, High risk level

Some neurodivergent people interviewed, especially with ADHD, reported impulsively deciding to gamble, often triggered by adverts or app notifications. However, this impulsive urge could pass quickly if not acted on because of procrastination or distraction, offering a chance to avoid gambling.

"It's been a couple of years since I started doing it. It started off as just a bit of fun, you know, and then I'm not really sure when it became such a big problem. But it just seemed to get worse and worse. It's like once I've started, I don't feel like I can stop... until I'm literally completely out of money."

18-35, Male, White, has ADHD and is dyspraxic, High risk level

A need for stimulation

Research shows that autistic people may face higher gambling harm risks due to differences in processing information, sensory sensitivities, and attraction to repetitive behaviours. Activities like online slots provide sensory stimulation and repetition, making it hard to stop once started (Grant & Chamberlain, 2021).

"[My autism makes gambling] more addictive, satisfying and incentivising to play and to bet."

18-35, Male, White, is autistic, High risk level

Some neurodivergent people, especially those with ADHD, seek stimulation through gambling and other activities like shopping or alcohol, feeling trapped in a harmful cycle. Easy access to online gambling makes it a convenient way to meet this need for instant stimulation, which is further exploited through game designs, such as vivid graphics, quick wins, and near-misses. These techniques make feel like a game rather than a risk, encouraging more time and money spent (Close and Lloyd, 2021). This was echoed by a person interviewed:

"They manage to mask it in a way that seems more fun by making it into such a game... The [icons] all come up in a way of like showing you that you've almost won each spin, like oh, you've just missed a line on this one. You've just missed a line on that one. So, then you'll hit it again, because you'll think oh, I'll get it in a minute. And sometimes it doesn't come up and then you lose all your money."

18-35, Male, White, has ADHD and is dyspraxic, High risk level

"My ADHD makes me seek out stimulation all the time, especially during a medication shortage and gambling gives me that. It's there 24/7 now so much of it is online. I don't know if I would have ever started gambling without my ADHD."

18-35, Female, Mixed- White and Asian, has ADHD and is autistic, High risk level

Hyperfocus

Some neurodivergent people interviewed recalled gambling more often or for longer due to hyperfocus. This intense concentration, driven by excitement, interest in game mechanics, or fixation on specific games, increases the risk of gambling harm.

"[There are] multiple moments where you think, oh should I cash out? Or should I keep going? And these moments really play into my focus and keeps me really engaged."

18-35, Male, White, is autistic, High risk level

Some participants felt that the design of gambling products and environments encouraged these hyperfocus states. This included a lack of warnings about time spent on apps, an inability to save progress before leaving an app, or particularly engaging graphics.

"[The layout of the casino] just makes the whole thing seem fun, fun games, like we've got games here, we've got entertainment sport matches there."

18-35, Male, White, is autistic, High risk level



Neurodivergent people, especially those that are autistic or have ADHD, described how gambling products could become an obsession or hyperfixation. This often led to more frequent or prolonged gambling, overspending, and neglecting work, relationships, or health. Autistic participants reported long-term intensity, while those with ADHD expected interests to shift more quickly.

"I do feel that my autism can play a part when it comes to gambling, I know I can get very into something very easily and latch on to certain obsessions...This does link with gambling as I started off enjoying it at first but then the obsession etc. comes in to play and it goes a step too far."

18-35, Male, White, is autistic and dyscalculic, Moderate risk level

Preference for rules, order and routine

Qualitatively, neurodivergent people with regular schedules for putting money on the lottery and playing bingo were less likely to perceive their gambling behaviour as risky as it was part of their regular routine. Further, those who found comfort in their routines and structures, especially autistic people, described how gambling at a particular time daily or weekly had now been incorporated into this routine, which would be challenging to break even if they wanted to.

Using gambling as a coping mechanism for other challenges

Experiences and challenges associated with neurodivergence have led some neurodivergent people to engage in gambling as a coping mechanism, which may increase their risk of harm. Qualitatively, many neurodivergent people reported using gambling to manage emotions related to social isolation, such as stress, anxiety, or boredom, indicating that gambling could be a response to the negative feelings caused by isolation. For some, particularly younger people and those diagnosed with ADHD, gambling also served as a means of social interaction not otherwise available, filling a gap where traditional social opportunities were limited or inaccessible and leading to more time spent on these activities (Cairncross et al., 2019). In these cases, gambling was not merely a response to isolation but actively substituted interpersonal real-world connections. This pattern was especially evident among autistic people whose repetitive gambling behaviours could function as a substitute for real-world social engagement (Grant & Chamberlain, 2021).

"I'm a really restless person, and I can't get off to sleep very well at all, and as soon as I'm awake I'm like wide awake sort of thing. And I get bored really, really easily by the things I've got to do... I think that's why [gambling is] so addictive to me, because it's like such an intense feeling."

18-35, Male, White, has ADHD and is dyslexic, High risk level

Co-occurring mental health challenges

Co-occurring mental health difficulties also increased gambling harm risk for some neurodivergent people, particularly for individuals with ADHD or autistic people. Gambling can be used to cope with negative feelings or mental health conditions such as anxiety and depression, usually following losses or because of concerns about how friends and family would perceive their gambling behaviours. At the same time, negative impacts of gambling, such as financial loss, could exacerbate pre-existing mental health conditions for some.

Previous research found that people with ADHD seeking treatment for gambling harm were more likely to have co-occurring mental health difficulties compared to neurotypical people seeking

treatment (Brandt and Fischer, 2019; Waluk et al., 2016). This suggests that ADHD may not only increase vulnerability to gambling harm but also intersect with broader mental health challenges. Even without considering gambling harms, ADHD in adulthood is associated with high levels of unemployment (Kooij et al., 2010) and links have been drawn between ADHD, co-occurring mental health difficulties and substance use (such as drugs or alcohol) (Wilens et al., 2011; Black et al., 2013; Reid et al., 2020).

Intersectionality and the role of stigma

ALSPAC data analysis found no differences in regard to levels of risk of gambling harm (defined by PGSI scores) among neurodivergent people by sex and socioeconomic background. However, neurodivergent people from minoritised ethnic backgrounds were more likely to be at risk of gambling harms (defined by a PGSI score of 1+) than white neurodivergent people.

Fear of stigma, social isolation, and judgement significantly impacted the neurodivergent people interviewed within this research, especially those already facing social challenges including mental health challenges and sensory sensitivities. ADHD participants, sensitive to rejection, felt heightened judgement. Research shows ethnic minorities and religious individuals report higher stigma levels than white or non-religious individuals (Shipsey et al., 2025). Older age groups reported less stigma than younger ones.

Within the interviews, neurodivergent men, people from minoritised ethnic backgrounds and people from conservative communities reported reluctance to discuss gambling harms or seek help, fearing negative assumptions and relationship breakdowns. This secrecy reinforced stigma, isolation, and harm, creating a harmful cycle. These findings are also supported by aforementioned GambleAware commissioned research into the stigmatisation and discrimination of people who experience gambling harms (Shipsey et. Al, 2025).

"We're not very expressive people, we're very disciplined more so than other cultures. We definitely don't talk about gambling...I'm one of those old-school males that just tolerates a lot. For me seeking help is being weak...it paints how masculine you are."

36-54, Male, Asian, has ADHD and is autistic, High risk level

9 Neurodivergent peoples' experiences of gambling support and treatment

Key findings

Awareness of gambling support options among those interviewed varied, with those at higher risk more likely to know and access services.

Support was often sought reactively after significant negative outcomes, rather than proactively (Lischer et al., 2023).

Barriers to accessing treatment qualitatively and in wider research included low awareness, stigma, perceptions of low need, and negative past experiences (Gosschalk et al, 2024).

Qualitatively, gambling service delivery challenges for neurodivergent people included complex processes, sensory overload, rigid models, and lack of tailoring to their needs.

Feelings of shame, fear of judgement, and cognitive overload can deter neurodivergent people from seeking or continuing support (Gosschalk et al, 2024).

Support and treatment refers to the various methods and resources available to help neurodivergent people manage and mitigate the harms associated with gambling. This includes both formal and informal approaches.

Awareness of support and treatment options

Within the interviews, neurodivergent participants were generally aware of self-help tools and support groups. However, those at lower risk of experiencing problems from their gambling were less informed about specialised apps or counselling, as they didn't view their gambling as problematic and felt less motivated to seek support. In contrast, higher-risk individuals were more familiar with support services, often through past use or advertisements in gambling settings like betting shops or online platforms. These ads increased awareness, even among those not actively seeking help.

Some participants learned about gambling support through referrals from organisations assisting with debt, housing, or mental health issues. While neurodivergence itself didn't seem to affect awareness of support options, perceptions of stigma and shame around gambling often prevented open discussions about gambling challenges, limiting their access to information and support.

"I did want to speak to people about it [gambling harm], but I felt it was really embarrassing and a bit taboo.."

55+, Male, White, has ADHD and is autistic, Medium risk level

Support and treatment options accessed

Research on annual support and treatment needs in Great Britain (Gosschalk et al, 2024) found that people experiencing significant gambling harms (as classified using the PGSI scale and defined by a PGSI score of 8+) were more likely to report using advice, support and treatment (65%) when compared to those that reported experiencing any level of gambling harm (as defined by a PGSI score of 1+) (23%). This was supported in the qualitative research, with neurodivergent people with

higher risk levels more likely to have accessed some form of gambling treatment, support or advice than those with moderate (PGSI score of 3-7) or low risk levels (PGSI 1-2).

Within the interviews, neurodivergent participants with a low risk (PGSI 1-2) of gambling problems felt their gambling was under control and not severe enough to need support. They also did not expect their gambling to escalate to a level requiring treatment. However, when seeking help for other issues like mental health or financial problems, they were sometimes referred to gambling support services.

"I don't think I've really been through a phase where I'm addicted to it and can't stop."

18-35, Female, White, has ADHD, Low risk level

Previous research indicates that there are higher rates of ADHD among people seeking treatment for gambling harms than in the general population (Waluk et al., 2016; Fatseas et al., 2016; Jacob et al., 2018). No data was found on the prevalence of autistic people or other neurodivergent characteristics among people seeking treatment.

Types of support accessed

Twenty participants in the qualitative research used gambling support. Those with severe gambling harms often combined formal and informal methods, as they felt that no single service fully met their needs.

Informal support

Within the interviews, neurodivergent people at low risk (PGSI 1-2), of gambling problems typically felt no need for treatment but often used informal support, like talking to family or friends or blocking bank cards. Conversations with loved ones provided emotional support, accountability, and practical help, such as relatives managing money, fostering trust and motivation to reduce gambling.

"I did talk to my friend because we were [gambling] at work as well, and just saying I can't really do this as I'm trying to save for my house... [I said to her] I know I'm just wasting my money."

18-35, Female, White, has ADHD, Low risk level

Family members were often approached for support when individuals felt overwhelmed or after significant losses. The motivation for reaching out was typically based on trust, shared experiences, or the desire for non-judgemental help.

Some neurodivergent participants educated themselves about gambling risks, feeling empowered to understand their behaviour and make informed decisions. Access to resources improved awareness and self-regulation. Many preferred self-help to maintain independence, avoid stigma, and handle issues without external support, seeing help-seeking as a sign of weakness.

"I would search up gambling addiction advice and stuff for that [on YouTube] and it's been quite helpful and motivating."

18-35, Male, White, is autistic, High risk level



Some neurodivergent people interviewed used practical self-help measures like deleting browsers, setting deposit limits, and restricting bank access to create barriers to gambling. These actions helped them maintain self-control and avoid old habits.

"I have to put a limit on my accounts like the lottery one. You can only deposit so much and I just tell myself I'm not doing more."

18-35, Female, White, has ADHD, Low risk level

Formal support

Within the interviews, neurodivergent people that used formal support found it effective, valuing structured help, coping strategies, psychological insights, and regular check-ins. Tools like Gamban, the GambleAware Helpline, and counselling from organisations like the NHS, Ara, and GamCare were helpful. Gamban, which blocks gambling sites, was especially effective in breaking harmful patterns. Clear referrals to additional services and information on gambling psychology improved outcomes, helping participants manage emotions and stay focused on recovery.

"I was feeling really low and if I hadn't talked to [the National Gambling Helpline] about it then they wouldn't have put me on to the Ara people, they sorted the whole thing out for me."

18-35, Male, White, has ADHD and is dyspraxic, High risk level

Participants often hesitated to seek formal support due to stigma, discomfort, or lack of awareness but were motivated by crises or the need for structured help. Weekly counselling calls provided emotional support, accountability, and a focus on recovery. However, some, particularly those with ADHD, struggled to access support due to procrastination, shifting interests, or difficulty maintaining focus.

"I would find all the information if I was struggling, but would get in these periods where I don't want help... I don't want to anything to do, and I've kind of shutdown."

18-35, Female, White, has ADHD, Low risk level

Across all neurodivergent people, online support was preferred, with offline services reportedly less accessible.

Timing of support

People often sought help reactively, driven by crises like debt or relationship breakdowns, which made recovery harder. This highlights the need for greater awareness of gambling harm and preventative measures. Research shows most who gamble only seek support during crises, such as emotional distress or financial hardship (Lischer et al., 2023).

Proactive help-seeking was more common among neurodivergent participants aware of personal or familial gambling risks. They reduced gambling frequency or avoided high-risk situations to prevent escalation.

"[My gambling] wasn't too much, and it wasn't out of control at that point, but I was just like, I need to stop this."

18-35, Female, White, has ADHD, Low risk level

Barriers to support and treatment

Barriers to seeking or initiating support or treatment

We identified five main barriers to accessing treatment or support during the REA and from interviews with neurodivergent people, most of which also affect neurotypical individuals who gamble:

- Low awareness of support services: A lack of awareness of specialist gambling support services meant that some who felt they would benefit from gambling support chose to rely on informal support networks or go without any support at all.
- Perception that support is not needed: Two in five (39%) of people experiencing any level of gambling harm did not seek support because they thought their gambling was not problematic (Gosschalk et al, 2024), although this finding was not specific to neurodivergent individuals. Qualitatively, some neurodivergent people interviewed felt support would only be necessary if they experienced financial difficulties as a result of gambling. Alternatively, neurodivergent people who tended to go through cycles of intense interests, such as autistic or ADHD individuals, considered their interest in gambling as fleeting and expect to stop gambling when they found a new interest.

"One of the biggest traits of my ASD is obsessive behaviour, anything I remotely enjoy I rapidly become fixated on it for a prolonged period of time, then move onto the next thing."

18-35, Male, White, is autistic, Low risk level

- Perception of their gambling as low priority: Individuals experiencing other challenges, such as with their mental health, felt their gambling was a lower priority to address. This was particularly relevant when gambling was being used by neurodivergent people in part as a coping mechanism for these other challenges they faced.
- Negative past experiences of seeking help: Past experience of accessing support was a
 barrier for seeking support in the future, for gambling and other challenges. Neurodivergent
 people often felt misunderstood and unsupported when support was not tailored to their
 communication and learning needs, and that attempting to access support would be a
 'waste of time'. The lack of adaptation of support services based on their neurodivergent
 needs often deterred people from accessing support again.
- Stigma and fear of judgement: Addressing the negative stigma attached to gambling in the treatment space, as well as in society as a whole, is important for all people to feel confident reaching out for non-judgemental support (Gosschalk et al, 2024). Neurodivergent people generally can find it hard to reach out for help due to feelings of shame or judgement from others. Fears of being discovered accessing gambling support, or even participating in gambling at all, can deter individuals from finding out about or accessing support. These fears can be exacerbated by past feelings of being misunderstood by others including friends and family or feeling like they were a burden when they needed help in the past.

"I think neurodivergent people don't like asking for help. I suppose it comes from a lifetime of feeling like 'The Problem' in general."

18-35, Male, White, is autistic, Low risk level

Shipsey et al (2025) found that experienced and internalised stigma were generally higher among those who had accessed services than among those who had not. This could indicate that people encountered increased experienced and internalised stigma during the process of disclosure and support seeking, or that at high levels, stigma can act as a catalyst prompting people to seek treatment.

"It's guilt and fear of being looked at in a bad way. I don't want someone to think I am a bad person for doing it – that makes me feel physically sick."

36-54, Female, White, has ADHD and is autistic, High risk level

Barriers arising from how support and treatment is delivered

Gambling treatment, support and messaging in Great Britain, including signposting to services, is predominantly designed and tested on neurotypical people (GambleAware, 2022). There is no published research or documentation from Great Britain on adaptations to gambling support, treatment or messaging for neurodivergent audiences. This is supported qualitatively, with neurodivergent interview participants and Advisory Panel workshop attendees reporting that gambling support and treatment services did not feel tailored to their needs.

Many aspects of gambling support and treatment service delivery were inaccessible and posed barriers to engagement for neurodivergent people in this research. These barriers often lead to feelings of overwhelm or cognitive overload—a state of mental fatigue caused by processing excessive information—which may be further exacerbated for neurodivergent people by the simultaneous need to navigate complex social interactions. These barriers lead to a negative overall experience through stress and fatigue, risking attrition from support. They include:

 Overly complex or inaccessible processes and communications: Dyslexic people and those with ADHD can often struggle with processing complex or lengthy information, making it difficult and overwhelming to navigate application processes.

"If I don't get the information I need, maybe right away, I just lose interest"

18-35, Female, White, has ADHD, Low risk level

- Highly-stimulating environments: Those who experience sensory sensitivities often struggle with excessive noise, bright lights or cluttered spaces which can make it difficult for them to focus and engage effectively in physical environments such as those where support typically takes place.
- Rigid service delivery models: Rigid appointment schedules and the absence of hybrid or
 online options pose challenges for neurodivergent people with fluctuating energy levels,
 executive functioning challenges, or social anxieties.
- Lack of follow-ups and reminders: The absence of consistent follow-up sessions or reminders can make it difficult for some neurodivergent people, particularly those with ADHD



and those who struggle with self-motivation, to stay engaged with ongoing programmes of support and treatment such as CBT.

High degree of social interaction: Neurodivergent people, particularly autistic people, often report challenges with group dynamics including feeling misunderstood by others or finding it hard to concentrate on taking in information while also expending energy navigating novel or complex social interactions. These individuals often wanted support they could access independently (such as apps), without involving others.

"I wouldn't feel comfortable at all [using in-person support] as someone who is neurodiverse... when you're autistic, for me, and you meet with other people, you're always analysing how people are and if they like you. Your mind is constantly occupied on that rather than, I'm going there to get help."

36-54, Male, Asian, has ADHD and is autistic, High risk level

• Reliance on informal or self-directed strategies: Neurodivergent people that used informal support often struggled to initiate contact with these services as they preferred the flexibility, comfortability and ease of access of informal or self-directed support strategies. Some individuals also felt that informal support offered a more personalised and adaptable approach that did not have a fixed schedule of formal questions with a professional. Further, while some who had previously accessed structured support in the format of CBT programmes had found this helpful, others found it difficult to undertake 'homework' in their own time and reported negative experiences as a result.

"It's just me wanting to have a sort of independence...and reflection to think about how I can improve."

18-35, Male, White, is autistic, High risk level

• Lack of information or strategies to address key neurodivergent challenges:

Neurodivergent people often anticipated that the support on offer would not be useful as

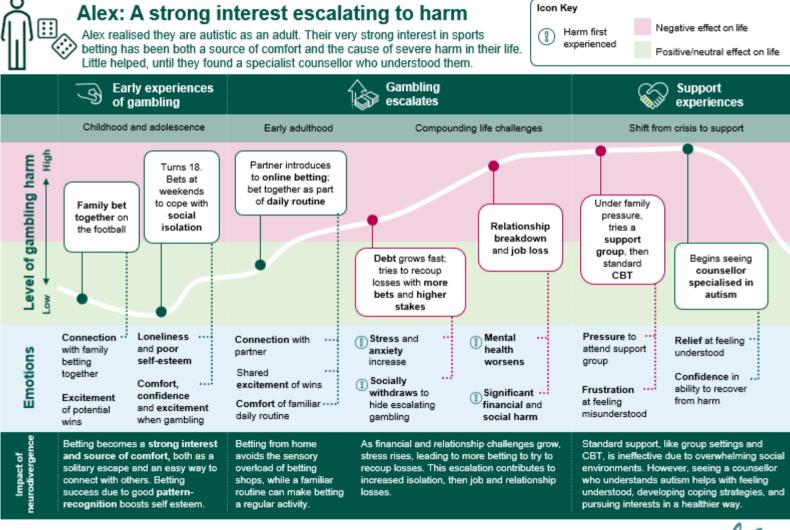
'generic advice' may not address the specific challenges they face, such as how to break out
of a hyper focused state.

"I sometimes feel hesitant to reach out, as not all support services are tailored to the ways neurodivergent people might think or communicate. For example, if I'm struggling with hyperfocus, breaking out of that cycle can be hard without support that directly addresses it."

18-35, Female, Black British, is dyslexic and dyspraxic, Low risk level

Figure 2 and Figure 3 below are composite journey maps based on findings from the qualitative research that represent common themes, patterns and issues found across the research from multiple real-life individuals. They showcase common early experiences of gambling, how the gambling escalated and support experiences.

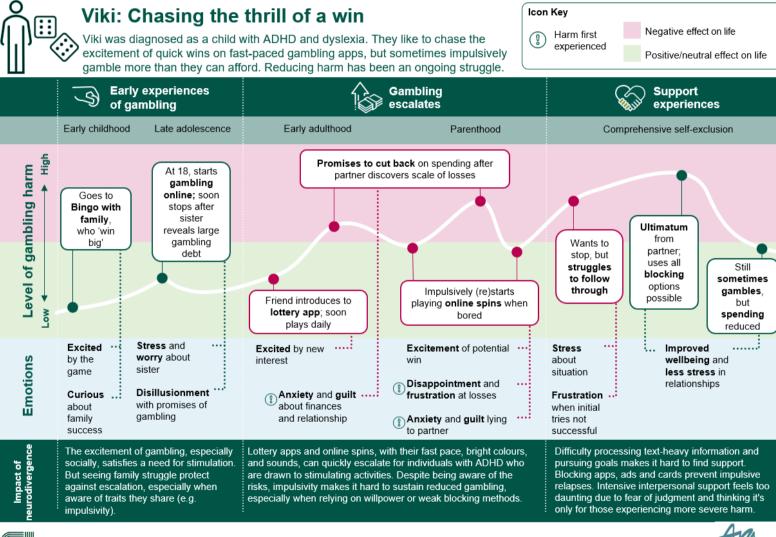
Figure 2 Pen portrait of a neurodivergent support and treatment journey: Alex





This journey map combines information from multiple real-life individuals. It is designed to represent common themes, patterns, and issues found across the research, while maintaining the privacy and confidentiality of the actual participants.

Figure 3 Pen portrait of a neurodivergent support and treatment journey: Viki





This journey map combines information from multiple real-life individuals. It is designed to represent common themes, patterns, and issues found across the research, while maintaining the privacy and confidentiality of the actual participants.



10 Perceptions of effective approaches to gambling support and treatment

Key findings

Findings across all phases of the research (REA, interviews with neurodivergent participants, discussions with the Advisory Panel) found that gambling support must be personalised and tailored to neurodivergent people's needs and characteristics, rather than relying on formal diagnoses.

Neurodivergent people interviewed and Advisory Panel members noted that flexible, clear communication, using visual aids and promoting client input, can help neurodivergent clients to engage with support more effectively.

The REA and discussions with neurodivergent participants found that support approaches that foster autonomy and encourage self-management are important for neurodivergent people. These approaches respect individual perspectives, offer choices, and provide meaningful rationale for tasks and instructions which can promote independence, self-regulation and problem solving skills.

Findings across all three phases of this research demonstrated that offering calm and flexible support environments with multiple delivery formats can help neurodivergent people access support in a way that suits their needs.

In the interviews, neurodivergent participants noted that peer support networks, where neurodivergent people can act as mentors, can be positive in facilitating communication, providing relatable insights, and fostering community which can help to overcome barriers associated with formal support. Similarly, wider research indicates that self-help tools (e.g., workbooks, online modules, chatbots) can empower neurodivergent people by reducing stigma, promoting autonomy, and enabling private, flexible engagement with support.

Discussions with neurodivergent people and findings from the REA indicate that training for staff in neurodiversity awareness, ideally informed and designed by those with lived experience, can build trust between practitioner and client and ensure the delivery of culturally sensitive, inclusive support.

Effective approaches to gambling support and treatment

All three phases of this research found that gambling support and treatment services must be tailored to meet the diverse needs of neurodivergent people to be effective. To achieve this, approaches must be centred on the specific characteristics of neurodivergence, rather than focusing on formal diagnoses. This will ensure neurodivergent people's needs are met, without being limited by assumptions of stereotypical presentations or the presence (or lack thereof) of a specific diagnosis.

With this value at its core, the research has identified six key principles on which gambling support and treatment approaches should be built, and these are discussed in turn below.

1. Understanding and adapting to the diversity of communication needs

Within the interviews, neurodivergent participants felt that staff understanding of flexible communication methods is important in helping to build trust and improve engagement. Research by New Philanthropy Capital (NPC) into gambling harms supports this, finding that 'the right language'

can help people to engage. This means understanding the words or phrases different communities use in relation to gambling and reflecting that in their support (NPC, 2025).

To achieve this, Advisory Panel members expressed that gambling support and treatment should be designed in a way that allows for adaptation for each client. Advisory panel members felt that support should avoid overly prescriptive language that does not allow for adaptability. Equally, practitioners should not assume anything about the way a client may wish to communicate but should actively seek input from clients on this. Additionally, support approaches should recognise that some may find it challenging to identify or express emotions and should allow ample time for clients to respond and reflect. These elements are important in ensuring the diverse array of communication needs that exist, across both neurodivergent and neurotypical individuals, are catered for.

Advisory panel members also noted that questions should not be phrased in a way that suggests a difference in the support being offered for neurodivergent clients. Questions should be introduced in open discussion, helping clients to feel comfortable and that they are able to respond in their preferred way. This can also reduce the cognitive demand on clients to answer questions in a rigid and structured format.

Wider research about the best way to support neurodivergent people in the criminal justice system suggested that adequate staff training may support good communication with neurodivergent people (Clasby et al., 2022). Whilst the research does not provide any specific information on what the training should entail, it indicates that staff should be trained to be aware of any additional needs their clients may have and adapt their approach to support in light of this. Staff knowledge and training will be discussed in more detail later in this chapter.

2. Ensuring clarity and simplicity in communications

Both neurodivergent participants interviewed within this research and Advisory Panel members felt that clear, structured communication is essential in supporting neurodivergent clients to access support services. Interviews with neurodivergent people found that dyslexic individuals and those with ADHD tended to struggle with processing complex or lengthy information, making it difficult to navigate application processes. Dyslexic people experienced challenges in absorbing information from written text. For people with ADHD, this was rooted in a difficulty with maintaining attention to finish reading or administrative tasks, particularly if they were not interested in the topic. Both groups reported skipping or skim reading when presented with long passages of text. As such, the use of visual aids, such as infographics and diagrams, can make information more accessible and help to address difficulties with processing verbal or written information.

Neurodivergent participants and Advisory Panel members both noted that cognitive overload, where overwhelming information causes confusion or anxiety, can be another key barrier to engaging with traditional support services. Participants reported long blocks of text without bullet points caused particular anxiety for those that experienced challenges processing written information. Some, particularly those with ADHD, reported difficulties in reaching out for support partly as a result of this. Succinct, direct language can help to minimise overwhelm, and support engagement, especially for those who may be easily distracted or lose interest when presented with large volumes of information, such as some clients with ADHD. While clarity is key, as previously discussed, communication should also be adaptable, allowing clients space for creativity in how they share their experiences.

3. Promoting autonomy and independence

The REA found that promoting autonomy and independence within support approaches is key for neurodivergent people. Wider literature from adjacent sectors suggests that autonomy-supportive approaches may be effective in supporting neurodivergent people accessing support for gambling harm. These approaches foster motivation and self-management by respecting individual perspectives, offering choices, and providing meaningful rationales for tasks and instructions (Reeve, 2009). This promotes independence, self-regulation and problem-solving skills, which can help neurodivergent people to feel more motivated and build their self-management skills (Reeve, 2009). Overall, it can create more positive outcomes for people with ADHD (Waluk et al., 2016), and possibly other neurodivergent characteristics.

Within the interviews, neurodivergent participants felt that treatment approaches for neurodivergent people should also be customised to account for characteristics such as attention difficulties and impulsivity. Therapies should incorporate strategies for impulse control, time management and cognitive support, such as autonomy-supportive approaches that empower people to take ownership of their own recovery.

Equally, these participants reported that cognitive behavioural therapy (CBT) can help to support neurodivergent people. CBT can help to identify triggers relating to gambling and target impulsivity which can be a common characteristic for those with ADHD and autistic people. Previous research suggests intensive and prolonged CBT, of around 20 weekly sessions, may help neurodivergent people experiencing gambling harms by helping to manage impulsivity and reduce the feeling of needing to use gambling urgently to regulate intense emotions (Grall-Bronnec et al., 2011). However, although they recognise the previously published research, Advisory Panel members noted that CBT can be ineffective or even a negative experience for neurodivergent people in their personal and professional experience, especially if it has not been specifically adapted for neurodivergent people.

Other research also demonstrates the history of harmful treatment and why a move to neuro-inclusive designed practices are important. Medicalised approaches have long pathologised neurodivergent characteristics and often erased neurodivergent identity, with people encouraged to mask their neurodivergent characteristics and conform to neurotypical norms. As such, therapeutic approaches must not view neurodivergent characteristics as 'differences' or 'deficit's, they must promote acceptance, pride and community, and encourage therapists to approach neurodivergent experiences with openness and respect, acknowledging the value of lived experiences (Chapman & Botha, 2022).

4. Supportive environments that consider sensory sensitivities

Neurodivergent participants raised the importance of considering sensory sensitivities in designing effective approaches to gambling support and treatment. As stated above, overstimulating environments can deter neurodivergent clients from engaging in support. While some may be drawn to stimulation in gambling contexts, they often prefer calm, predictable environments for support, further demonstrating the need for a better understanding of individual needs to inform personalised support. Offering choices in regard to the physical environment, such as turning off bright lights for example, is important in managing sensory sensitivities, especially for autistic people.

Offering a variety of delivery formats, such as online and hybrid options, can allow for individuals to choose what works best for their sensory and social needs. For example, some clients may prefer one-to-one support models as they find navigating group dynamics difficult. Equally, others who do

not experience these barriers may opt for group settings to help create common goals and habits with likeminded individuals.

Our Advisory Panel also noted that flexibility in scheduling sessions is important to ensure they suit the client and help them overcome any challenges they may be facing in accessing support and give them the best chance of being able to engage. Irrespective of a client's choice of format, creating a stigma-free environment that recognises and respects neurodivergent characteristics is essential.

5. Incorporating self-directed or informal support strategies

Outside of formal support approaches, the neurodivergent participants interviewed reported using informal or self-directed support strategies. In particular, participants reported that peer support networks, where neurodivergent people are able to act as mentors, can be valuable in facilitating communication, providing relatable insights, and fostering community. These networks offer a relatable, non-judgemental space for people who may be hesitant to engage with formal support services due to barriers such as complex application processes or long waiting lists.

Similarly, self-help tools or strategies were seen as having benefits for some groups over traditional forms of support in research conducted by Alma Economics for GambleAware. Whilst this research does not explicitly address neurodivergence, the benefits identified can be closely mapped to the preferences or barriers of neurodivergent people experiencing gambling harms. For example, digital self-help tools, such as workbooks, online modules, or chatbots, can allow users to engage with gambling support privately, reducing social anxiety, overwhelm, or stigma associated with face-to-face support, which are key barriers faced by neurodivergent clients. Additionally, as previously discussed, promoting autonomy and independence is a key principle within effective approaches to gambling support and treatment. This research suggests that self-help tools and strategies are important for fostering empowerment, supporting users to feel in control, motivated, and to take self-directed action, ultimately supporting autonomy, which neurodivergent people find to be effective.

6. Staff knowledge and training

Within the interviews, neurodivergent participants noted that staff training is key to ensure gambling support and treatment is able to effectively support the diverse needs of neurodivergent clients. Staff must be trained in neurodiversity awareness and flexible communication methods to ensure they are able to build trust with clients and foster engagement. Effective training can support practitioners to become confident and skilled facilitators who understand neurodiversity and can manage group dynamics. Advisory panel members also noted the importance of this training being both designed and delivered by those with lived experience to ensure it is as impactful and relevant as possible.

The REA also found evidence to indicate there may be benefits to including lived experience in the development of the support. Whilst almost none of the studies assessed by the REA involved people with lived experience in the development of support, one study about the criminal justice system in New Zealand did include lived experience in the design process and indicated that this may be important for developing successful support (Clasby et al., 2022).

Neurodivergent people interviewed as part of this research felt that support resources should be usable for all clients and avoid reference to specific "neurotypes" as not all neurodivergent people have a formal diagnosis, and many people self-identify. This is especially important for clients who can mask their neurodivergence in some settings, particularly those with ADHD and autistic people. Additionally, advisory panel members noted the importance of embedding an awareness of intersectionality in all training materials to ensure practitioners are able to delivery inclusive, person-

centred support. To facilitate this, members felt practitioners should receive training on cultural considerations. An example provided by the panel was that minority ethnic clients may experience heightened shame and stigma around gambling, and it is important for practitioners to have awareness of this ahead of delivering gambling support.

Applying principles of effective support to overcome barriers to support

In the previous chapter, a range of barriers to accessing support for neurodivergent people were discussed. The table below summarises these barriers and identifies effective solutions for delivering gambling support, utilising the principles outlined above. While the barriers are based on participant feedback within Phase 2, solutions are informed by both people's own suggestions and their reactions to solutions and ideas shared with them in the research.

Table 1: Summary of barriers to support and proposed solutions for neurodivergent people experiencing gambling harm

Barrier	Explanation	Potential solution
Low awareness of support services	Many people, particularly those with low-risk gambling behaviours, were unaware of specialised gambling support services, relying instead on informal networks.	Increase outreach for support through advertising in gambling environments and public awareness campaigns.
Perception of low severity	People who felt their gambling harm was not severe enough to require intervention often chose not to seek help.	Encourage proactive engagement and improved self-appraisal by normalising preventative approaches, for example the use of tools such as Gamban, and offering low-commitment, early intervention tools.
Stigma and fear of judgment	Stigma, shame, and fear of being judged deterred people from accessing support.	Create a supportive, nonjudgmental environment by training staff in neurodiversity awareness and reducing stigma through community engagement.
Negative past experiences or unsuitable services	Feeling misunderstood or unsupported when previously accessing support due to a lack of tailoring to their communication and learning needs, and services perceived as being designed for neurotypical people deterred some people from seeking help.	Develop neurodiversity-aware services by incorporating participant feedback and peer-led initiatives to ensure inclusivity and relatability.
Overly complex or inaccessible processes	Neurodivergent people, especially those with ADHD and dyslexia, found dense information and complex application processes overwhelming.	Simplify and streamline processes, using clear and direct communication with visual aids such as infographics or step-by-step guides.
Sensory sensitivity	Overly stimulating environments deterred some people, while others found stimulation appealing in gambling contexts.	Offer calming, sensory-friendly spaces and allow people to tailor their environment to their personal preferences. Ensure this is made clear at the outset when promoting support offers, for example on organisational websites or referral forms.

Barrier	Explanation	Potential solution
Sensory sensitivities	Rigid service provision and overwhelming information created barriers for some neurodivergent people. Sensory sensitivities made stimulating in-person environments difficult, while fixed schedules and lack of online options challenged those with low energy, executive functioning issues, or social anxiety. Dense or unclear communication added confusion and anxiety, hindering engagement.	Provide flexible delivery options, including online, hybrid, and in-person support, tailored to individual preferences. Ensure that communication and support materials are clear, structured, and designed to minimise cognitive load by using plain language, accessible formats, and visual aids.
Lack of follow-up and reminders	Some people with ADHD struggled to stay engaged due to the absence of consistent follow-up sessions or reminders.	Implement regular follow-ups and reminders through text, email, or phone to help people remain connected to support services. Important that these reminders are non-judgmental as a gentle, supportive approach can help reduce feelings of shame or guilt and encourage continued engagement with services.
Challenges with group dynamics	Some autistic people faced difficulties relating to group settings and navigating social interactions in support groups.	Offer both group-based and one-on-one support options or peer-led initiatives that accommodate individual preferences and comfort levels.
Reliance on informal or self-directed strategies	Those who perceived their gambling as less problematic often relied on coping strategies like blocking bank cards or talking to loved ones.	Promote awareness of low-barrier, structured support options, such as peer support networks, that complement existing coping mechanisms without requiring formal intervention.

Ara (a charity providing drug, alcohol and gambling treatment services across Wales and the South West of England), developed resources based on these principles to help the sector support neurodivergent people with gambling harm and address key barriers. These resources include:

- 1. A training deck for practitioners, including associated resources such as email templates to engage with neurodivergent clients, a summary document on how to support neurodivergent clients, and handouts for clients. This training covers background theory on neurodivergent characteristics, practical guidelines for providing support, and activities for putting this information into action. It aims to support the development of practitioners' practice, helping them to become confident and skilled facilitators that are able to support neurodivergent clients.
- 2. Screener questions that can be used by practitioners to engage with clients. These are templated questions that support organisations can consider asking of all clients at assessment stage, the start of support, and at different stages of the support journey. They can be used to determine a client's preferred communication method, delivery format, or general preferences on the surrounding environment. They are concise and clear in their intention, reducing the burden placed on clients.

11 Conclusions and recommendations

This research highlights the complex and nuanced relationship between neurodiversity and gambling, revealing significant gaps in understanding the experiences of neurodivergent people in relation to gambling behaviours, harms, and support. Characteristics like difficulty navigating social interactions, impulsivity, hyperfocus, preference for order, and a need for stimulation can drive gambling in neurodivergent people. Gambling may also help neurodivergent people experiencing social isolation to cope with its effects.

However, many of the reasons why neurodivergent people gamble in the first place can also serve as drivers of gambling harm for those who experience it. This can result in negative consequences including financial strain, relationship breakdowns, negative impacts on health and wellbeing, and setbacks in employment or education. The harms experienced by neurodivergent people are influenced by a higher risk of social isolation among this group and a subsequent wariness of straining relationships with friends and family who may be able to provide informal support. This is compounded by contextual factors such as stigma, shame, and a lack of appropriate support and treatment services that are tailored to neurodivergent people, which can further isolate them and create barriers to seeking help.

Other barriers to accessing gambling support and treatment for neurodivergent people relate to how this support is communicated about and delivered, with a lack of tailoring to their specific needs making it highly inaccessible for this audience to start or continue engaging with it.

This research has improved our understanding of neurodivergence and gambling, but evidence gaps remain. We lack insight on how neurodivergence intersects with gender and ethnicity, and on the effectiveness of gambling harms treatment for neurodivergent people. There is especially little evidence for those without formal diagnoses or have not engaged with formal support.

Most research to date focuses on ADHD and autism, so we need more evidence on dyslexia, dyspraxia, dyscalculia, and other neurodivergent characteristics. Our recommendations below include immediate actions for the sector (1-4) and further research needed to better support neurodivergent people that gamble in the future (5).

1. Build a neurodiversity-aware gambling industry workforce.

- Gambling operators should take into the consideration the needs of neurodivergent individuals when developing harm minimisation strategies and consumer protection measures.
- Support organisations should work with people with lived experience to design and deliver training for all staff on the characteristics of neurodivergence, and how these intersect with gambling harms and access to support and treatment. Training should also cover ableism, neurotypical biases, and attitudes toward neurodivergence. The training and resources Ara developed can support this.

2. Embed awareness of neurodivergent characteristics in support access, risk assessment, support and treatment approaches.

- Commissioners should make screening for neurodivergent characteristics, and adapting support plans accordingly, a required part of gambling support and treatment assessments.
 The training and resources Ara developed can support this.
- Commissioners should fund and support organisations to offer more diverse and simplified
 access routes (e.g. chat, phone, video, drop-ins) to support; and to diversify support and
 treatment delivery formats (online, hybrid, in-person; group or one-to-one). This should
 empower clients to have choice, increased by providing clear, concise communication and
 visual aids. The training and resources Ara developed can support this.
- Support organisations should adapt harm assessment and mental health tools to be inclusive of neurodivergent experiences by simplifying language, reducing length and complexity, and offering alternative formats (e.g. visual, verbal, or assisted options).
- Support organisations should design treatment plans that reflect individual neurodivergent characteristics, such as sensory sensitivities, attention patterns, and processing styles, and allow for flexibility in pacing, communication methods, and goal setting. The training and resources Ara developed can support this.

3. Adopt as standard peer-led and co-produced support.

- Commissioners should fund and support organisations to develop structured peer support
 programmes led by trained neurodivergent mentors or facilitators. These programmes
 should have clear pathways to participation, appropriate safeguarding measures, and links
 to formal support. They should also offer regular, accessible spaces (online or in-person)
 that foster trust, relatability, and shared experience.
- Support organisations should embed co-production at all stages of support and treatment design and delivery. This should be done by involving neurodivergent people with lived experience in decision-making roles such as advisory panels, working groups, or paid consultancy positions. Organisations should ensure their input directly influences how support and treatment is shaped, delivered, and evaluated, with appropriate support and recognition for their contributions.

4. Strengthen data collection and monitoring for support and treatment improvements.

Commissioners should require support organisations to collect and disaggregate support and treatment client data by neurodivergent characteristics, and demographics. This data should be routinely analysed to examine how client intersectional identities influence their support engagement and outcomes. This analysis, focusing on best practice and what works, should be shared among the sector and can be used to drive support and treatment improvements and identify gaps to address.

- 5. **Understand what works and build a movement to put this knowledge into practice.** Research commissioners should consider commissioning and funding:
 - Research that explores how gambling harms are experienced at the intersection of neurodivergence and other identities such as ethnicity, gender, class, sexual orientation, and religion and belief. This should include studies that uncover unique vulnerabilities, access barriers, and support needs within underrepresented groups.
 - Evaluations of the effectiveness of gambling harms interventions for neurodivergent people, focusing on both formal and informal support approaches.

12 Appendices

Appendix A: Rapid Evidence Assessment search terms and process

This Rapid Evidence Assessment (REA) only considered peer reviewed journal articles for inclusion to ensure a high quality of evidence considered. A total of 52 articles were identified using a title/abstract search on PubMed using the following terms:

Relating to neurodivergence:

- 'Neurodiver* (to include neurodiversity, neurodivergent and neurodivergence)
- 'Autism Spectrum Disorder', 'ASD', 'Autism', 'ASC', 'Autistic'
- 'Attention Deficit Hyperactivity Disorder' and 'ADHD'
- 'Dyslexia' and 'developmental language disorder'
- 'Dyspraxia'
- 'Dyscalculia'

Relating to gambling:

- Gambl* (to include gambling, gambling harm, 'problem gambling or gambler', gambling disorder)
- Gaming
- Gambling-related terms within gaming, e.g. 'loot boxes'

Relating to gambling support and treatment

- Cognitive Behavioural Therapy
- Treatment
- Support

The texts were then screened to check that the papers were relevant to the search terms and aims of the REA. Of the 52 papers identified, 12 were excluded from the review because they used decision-making cognitive tasks (Cambridge Gambling Task or Iowa Gambling Task) related to gambling but did not focus in any way on gambling harms or risks associated with gambling or used clinical or medical interventions that would not be practiced within the UK (Hosozawa et al., 2021). Snowballing (i.e. consulting reference lists in key documents to source other relevant items) was also used to supplement the search, this identified an additional 8 studies. This REA is therefore based on 48 published papers.

Appendix B: ALSPAC technical detail

For full details of the cohort profile and study design, see Boyd et al., 2013 and Fraser et al., 2013. Please note that the <u>study website</u> contains details of all the data that is available through a fully searchable data dictionary and variable search tool.

Ethics

Ethical approval for this study was obtained from the ALSPAC Ethics and Law Committee and the Local Research Ethics Committees. Informed consent for the use of data collected via questionnaires and clinics was obtained from participants following the recommendations of the ALSPAC Ethics and Law Committee at the time.

Sample sizes

20,248 pregnancies were identified as eligible, and the initial number of pregnancies enrolled was 14,541. Of the initial pregnancies, there was a total of 14,676 foetuses, resulting in 14,062 live births and 13,988 children who were alive at 1 year of age.

When the oldest children were approximately 7 years of age, an attempt was made to bolster the initial sample with eligible cases who had failed to join the study originally. As a result, the total maximum sample size for our analyses is therefore 15,447 pregnancies, resulting in 15,658 foetuses. Of these, 14,901 children were alive at 1 year of age.

The ALSPAC cohort is largely representative of the UK population when compared with 1991 Census data; there is under representation of some ethnic minorities, single parent families, and those living in rented accommodation (Boyd et al., 2013). We use the largest available samples in each of our analyses to increase precision of estimates, regardless of whether study participants contributed data to the other analyses. Participants were excluded from the study if they had missing information on sex or ethnicity or had died before the age of one.

Gambling measures

Gambling frequency

ALSPAC children were asked about their gambling behaviour and the frequency with which they gamble at ages 17, 20, 24 and 30. This included information on the types of gambling (e.g. slot machines, online gambling and table games). Responses were coded as "not within the past 12 months", "Within the past 12 months"; "Every week"; "Every day/almost every day". We derived a measure of gambling frequency by taking the most frequent value from responses to all types of gambling excluding the National Lottery given, consistent with other studies such as the Health Survey for England (NHS, 2023). Given differential patterns of missingness in gambling frequency measures across different ages, a summary measure of highest level of gambling frequency as measured at any age was derived for the analysis.

PGSI

The Problem Gambling Severity Index (PGSI) is a widely used and validated tool that is a proxy for gambling harms, to measure problem gambling. (Ferris & Wynne, 2001). ALSPAC children were asked to complete the PGSI at ages 19, 20, 24 and 31. The PGSI consists of nine individual items about gambling that are scored on a four-point scale: never (0); sometimes (1); most of the time (2); almost always (3). These scores are summed to give a total PGSI score ranging from 0 to 27. PGSI

scores were recoded into four groups representing differing levels of problem gambling: 0 "Gamblers who gamble with no negative consequences"; 1-2 "Gamblers who experience a low level of problems with few or no identified negative consequences"; 3-7 "Gamblers who experience a moderate level of problems leading to some negative consequences"; 8+ "Gambling with negative consequences and a possible loss of control". Questions in the PGSI are as follows:

- 1. Have you bet more than you could really afford to lose?
- 2. Have you needed to gamble with larger amounts of money to get the same feeling of excitement?
- 3. When you gambled, did you go back another day to try to win back the money you lost?
- 4. Have you borrowed money or sold anything to get money to gamble?
- 5. Have you felt that you might have a problem with gambling?
- 6. Has gambling caused you any health problems, including stress or anxiety?
- 7. Have people criticized your betting or told you that you had a gambling problem, regardless of whether or not you thought it was true?
- 8. Has your gambling caused any financial problems for you or your household?
- 9. Have you felt guilty about the way you gamble or what happens when you gamble?

Given differential patterns of missing scores in PGSI measures across different ages, a summary measure of highest PGSI category as measured at any age was derived for this analysis.

Neurodiversity measures

Our analyses were restricted by the measures that are available in ALSPAC for identifying neurodiversity. Our results must be interpreted in light of the fact that these measures will not perfectly capture clinical diagnosis of underlying ADHD, autistic and behavioural problems for all participants nor are they able to consider such neurodiversity beyond a binary measure. These measures have however been widely validated as good proxies for clinical diagnoses (McEwen et al., 2016; Goodman et al., 2011; Skuse et al., 2005), reducing the likely impact of this limitation on our conclusions.

Attention deficit hyperactivity disorder

Multiple indicators were used to identify attention deficit hyperactivity disorder (ADHD). Five of these were measured using responses about ADHD to the Development and Well-Being Assessment (DAWBA) at ages 7, 10, 13, 15 reported by the child's mother, and at age 7 reported by the child's schoolteacher. The DAWBA is a widely validated and reliable tool for deriving diagnoses of ADHD symptoms. DAWBA responses covered 18 questions on hyperactivity, inattention and impulsivity, such as "often fidgets with hands or feet" and "often interrupts or intrudes on others". Responses were coded as "no", "a little more than others", and "a lot more than others", with the values of 0, 1 and 2 respectively giving a total score of 0 to 36. The final indicator was based upon child self-reports at age 22 whether they had ever received additional support at school, at college/university or in the workplace for ADHD. We recorded children as having ADHD where any of these measures were positive.

Autism Spectrum Disorder

Autism Spectrum Disorder (ASD) "traits" were measured using the Skuse Social Communication Disorder Checklist (SCDC) reported by the study mother at 8. The SCDC is a widely validated and reliable screening instrument of verbal/nonverbal communication and social reciprocity for measuring ASD related "traits". Mothers reported on their child's behaviour in response to 12 questions, such as "not aware of other peoples' feelings" and "does not seem to understand social skills". Responses were recorded on a 3-point scale of "not true", "quite or sometimes true" and "very or often true", with the values of 0, 1 and 2 respectively giving a total score of 0 to 24. Children with an SCDC score of 9 or greater are typically classified as displaying sufficient ASD "traits" to warrant an assessment for diagnosis. SCDC scores were dichotomised at a cut-point of 9 and above for analysis in this study.

Behavioural disorders

Multiple indicators were used to identify behavioural disorders. The first three of these were measured using responses about behavioural disorders to the DAWBA at ages 7, 10, and 13 reported by the child's mother. The fourth indicator was based upon child self-reports at age 22 whether they had ever received additional support at school, at college/university or in the workplace for behavioural problems or hyperactivity. Children were recorded as having behavioural disorders where any of these four measures were positive.

Dyslexia

Three indicators were used to identify developmental dyslexia in the study children. The first was based on the accuracy component of the Neale Analysis of Reading Ability (NARA II) at age 9, using deviations of equivalent reading age from biological age. Children were classed as having developmental dyslexia if their reading age was greater than or equal to 30 months behind their actual age and their IQ was greater than or equal to 85 as measured using the short-form Wechsler Intelligence Scale for Children (WISC) at age 8. The second measure was based upon mother reports of whether she had been told by age 9 that the child was dyslexic. The third measure was based upon child self-reports at age 22 whether they had ever received additional support at school, at college/university or in the workplace for dyslexia. Children were recorded as having developmental dyslexia where any of these three measures were positive.

Dyspraxia

Three indicators were used to identify developmental coordination disorder (dyspraxia) in the study children. The first was based on measures of motor impairment and IQ during direct assessment of the study child at age 8. Children who were below the 15th percentile of motor impairment and who had an IQ of at least 70 were classed as dyspraxic children. The second measure was based upon mother reports of whether she had been told by age 9 that the child was dyspraxic. The third measure was based upon child self-reports at age 22 whether they had ever received additional support at school, at college/university or in the workplace for dyspraxia. Children were recorded as having developmental dyspraxia where any of these three measures were positive.

Covariates

Sex

Participants' biological sex at birth, as recorded in obstetric records.

Ethnicity

The study child's ethnicity was reported by the study mother at 9 months of age. Given the ethnic homogeneity of the ALSPAC sample, ethnicity was recoded into "white" and "non-white" to maintain statistical power.

Birth order

The participants birth order in their family was coded as 1 if they were the first-born child, etc.

Parental age

Mothers' and fathers' ages at study child's birth.

Parental socioeconomic position

A measure of parental socioeconomic position (SEP), based on the widely used Social Class based on Occupation (formerly Registrar General's Social Class), was used in this analysis. This measure contains the following groupings: (I) professional occupations; (II) managerial and technical occupations; (III-N) non-manual skilled occupations; (III-M) manual skilled occupations; (IV) partly skilled occupations; and (V) unskilled occupations. SEP was measured during pregnancy and reported for each parent by the study mothers. For dual parent families, the highest of the mother's and father's SEP was used.

Parental education

Highest parental education as reported by the study mothers during pregnancy was used. Mothers were asked to report their own and the father's highest level of education based on the following categories: Common Certificate of Education; Vocational qualification; O-level/GCSE; A-level; university degree or higher. For dual parent families, the highest of the mother's and fathers' education level was used.



Appendix C: Phase 2 sample composition

Depth interviews and online community

Table 2 Shows a full breakdown of the qualitative sample for Phase 2

Target=	Characteristic	Criteria		
45			Quota	Achieved
			Min	45
Primary	Method	Online community	30	28
		Depth	15	17
	Neurodivergence: All participants to have at least one of these neurodivergence ¹ .	ADHD	Min. 10	27
		Autism	Min. 10	17
		Dyslexia	Min. 6	16
		Dyspraxia	Min. 6	7
		None	None - exclude	0
	Extent of gambling activity and self-reported level of concern	'Problem gambler' (PGSI 8+) ²	10-15	14
		Low (PGSI 1-2) or moderate risk (PGSI 3- 7) gambler	25-35	31
		PGSI score of 0	None - exclude	0
Secondary	Has personally experienced adverse impacts from gambling - yes/ sometimes ³	Resources (e.g. work/employment, money/debt, crime)		12
		Relationships (e.g. partners, families, friends, communities)	10-15 across these (and each monitored)	17
		Health (e.g. physical health, psychological distress, mental health)		22
		None of these		19
	Whether ever access treatment or support for gambling	Yes – formal (accessed a service, used technology to block ability to gamble online)	10-15	7
		Yes – informal (spoken with a trusted friend, read information online)	10-15	13
		No	10-15	25
	Age	18-35	10-15	19
		35-54	10-15	20

¹ Note: numbers don't add to total (45) because individuals may select multiple neurotypes

<u>nttps://www.gamblingcommission.gov.uk/statistics-and-researcn/publication/problem-gambling-screens</u>

³ Note: numbers don't add to total (45) because individuals may select multiple impacts



² The Problem Gambling Severity Index (PGSI) is a widely used measure of 'problem gambling' in the population. PGSI score 0: individuals who gamble with no negative consequences; 1-2: individuals who experience a low level of problems with few or no identified negative consequences; 3-7 individuals who experience a moderate level of problems leading to some negative consequences; 8 or more: gambling with negative consequences and a loss of control. <a href="https://www.gamblingcommission.gov.uk/statistics-and-research/publication/problem-gambling-ambling-gamblin

		55+	10-15	6
	Nation	England	15-20	22
		Scotland	10-12	9
		Wales	10-12	14
Monitor	Ethnicity	White British	Monitor for even	34
		Ethnic minority	spread	11
	Gender	Woman	Monitor for even	21
		Man	spread	24
	Diagnosis of	Self-identified	Monitor for even	16
	neurodiversity ⁴	Formally/clinically diagnosed	spread	36
	Gambling activities ⁵	Arcades and gaming machines	Monitor for even spread	24
		Betting		31
		Bingo		23
		Casino and poker		21
		Lotteries and scratch		37
		cards		

⁵ Note: numbers don't add to total (45) because individuals may engage with multiple gambling activities.



⁴ Note: numbers don't add to total (45) because individuals may have multiple neurodivergence which are both self-identified and clinical.

Appendix D: Related publications

The following links will lead to earlier publications that have been produced as a result this research.

- Phase 1 Summary Report: <u>Gambling Harms and Neurodivergence: Mapping the Evidence</u> <u>Landscape</u>
- Phase 2 Summary Report: <u>Gambling Harms and Neurodivergence: Understanding the</u>
 <u>Context and Support for Neurodivergent People in Gambling Phase 2 Report</u>
- REA Journal Article: <u>Full article: Neurodiversity and gambling harm: a Rapid Evidence Assessment</u>

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