



Research into MBTI® type, neurodivergence, and neurodiversity

A report from The Myers-Briggs Company

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Executive summary

Introduction

15 to 20% of the world's population are neurodivergent, and their experience of the workplace can contrast unfavorably with that of the neurotypical majority. This study set out to look at differences in workplace experiences between neurodivergent and neurotypical people, and to investigate how personality type, and demographic factors such as gender and age, relate to neurodivergence. The research also investigated how completing the MBTI® assessment and receiving feedback had been useful, or counter-productive, for neurodivergent people. These findings were used to make practical recommendations for the workplace.

Results

Incidence of neurodivergence

- Just over 25% of respondents had been diagnosed as having some form of neurodivergent condition, though up to 42% of respondents considered themselves to be neurodivergent to at least some extent. This may imply an under-diagnosis of neurodivergence and contradicts the view that conditions such as ADHD and Autism Spectrum Disorder (ASD) are being over-diagnosed.
- Most neurodivergent people had been diagnosed with multiple conditions. 349 people, 18% of the total and 70% of those with any diagnosis, had been diagnosed with more than one condition.

Neurodivergence and experience of the workplace

- People who saw themselves as neurodivergent were less positive about the workplace than others were. The same findings applied to those who had been diagnosed with a neurodivergent condition compared with those not diagnosed.
- Across the different forms of neurodivergence, those diagnosed with Autism Spectrum Disorder (ASD) felt the least included, most misunderstood, and (together with those diagnosed with OCD) the most stressed. They had the lowest average level of job satisfaction, were the least likely to see their organization as positive about neurodiversity, and had the strongest personal views on neurodivergence.
- Those who believed themselves to be neurodivergent tended to agree that this could help them at work though almost half felt that their neurodivergence had caused them problems at work, and that they had to disguise or 'mask' their natural behavior at work. They themselves tended to have a positive view of neurodivergence, but only around a quarter agreed or strongly agreed that their manager, their co-workers, or their organization were supportive of their neurodiversity.
- Those who felt their organization was supportive of neurodiversity had significantly higher levels of job satisfaction; those who felt that they had to hide or mask their neurodivergence had significantly lower levels. Those who felt that their neurodivergence conferred some advantage had somewhat higher levels of job satisfaction.
- The more positive an individual was that they had ADHD or ASD, and the more conditions they had been diagnosed with or believed that they had, then the less

supportive they felt their organization was, and the more likely they were to think that being neurodivergent was an advantage, to hide or mask their behavior, and to be an advocate for neurodivergence.

- Detailed findings for different forms of neurodivergence (ADHD, ASD, dyscalculia, dyslexia, dyspraxia, obsessive-compulsive disorder, Tourette's syndrome) are given in the body of this report.

Relationships between neurodivergence and MBTI® personality type

- Individuals with an Introversion or an Intuition preference were more likely to have received a neurodivergent diagnosis of some kind than those with an Extraversion or a Sensing preference. In terms of whole type, those with preferences for INFJ, INTP, or INFP were the most likely to have received a diagnosis, those with preferences for ESTJ the least. In this context, it is interesting that the behaviors associated with E, S, T, and J have historically been seen more positively by Western society.
- Individuals with Perceiving and Intuition preferences, and to a lesser extent Feeling preferences, were the most likely to be diagnosed with ADHD, to see themselves as having ADHD, or to display behaviors typical of ADHD.
- Individuals diagnosed with, or who believed or thought they had autism spectrum disorder, were much more likely to have preferences for Introversion than for Extraversion. This does not mean that most Introverts have ASD; only 8% of those with an Introversion preference had this diagnosis. The individual type most likely to be diagnosed was ISTJ, though this only represented 11% of those with this preference.
- Individuals with an Introversion preference were more likely to have been diagnosed with OCD than those with an Extraversion preference. Those with Introversion and to some extent Judging preferences were the most likely to see themselves as having OCD.
- Those with a Judging preference were significantly more likely to think that they had dyspraxia (though not to be diagnosed) compared with those with a Perceiving preference.
- For Tourette's syndrome, though numbers were small and should be treated with caution, individuals with an Introversion preference were more likely to have been diagnosed and less likely to be sure that they did not have the condition.
- Dyslexia and dyscalculia did not show any significant relationships with personality type.

Relationships between neurodivergence and demographic factors

- Women were somewhat more likely than men to have had a diagnosis of some sort (27% compared with 23%). Those diagnosed were also on average slightly younger and were less likely to be a manager. There was no significant relationship with degree of remote working or organization size.
- Women were somewhat more likely than men to have been diagnosed as having ADHD and were more likely to be identified by the checklist as potentially having ADHD. This contrasts with previous research, which has tended to show a greater prevalence of ADHD amongst men. Younger people were also more likely to report as having ADHD. None of the measures of ADHD showed a significant relationship with degree of remote working, job level, or organization size.

- Men were somewhat more likely than women to have been diagnosed as having ASD, but women were more likely than men to say they believed they had ASD. This could indicate a tendency to under-diagnose women and girls with ASD, and/or over-diagnose men and boys. Managers were less likely to have or think they have ASD than more junior staff. There were no other demographic differences.
- Those diagnosed with OCD were on average younger than others. There was no significant relationship with gender, job level, degree of remote working, or organization size.
- There were no significant relationships with dyslexia.
- The degree of dyscalculia, dyspraxia, and Tourette's syndrome all showed a curvilinear relationship with age. On average, those diagnosed with or who believed they had the condition were on average the oldest, those who thought they had the condition the youngest, and those who were sure or who did not think they had the condition in between in age. There were no other demographic differences.

Views of the MBTI® assessment and MBTI® type

- In response to the question, "What is the best or most revealing thing that you learned as a result of completing the MBTI assessment", almost half of respondents talked about understanding themselves better or finding some confirmation of who they were. 29% talked about how understanding specific areas of type had been useful or revealing. Just under 3% said that the MBTI had not been useful, and less than 1% said that it wasn't very accurate. 2.4% said that it added to their knowledge of their neurodivergence.
- In response to the question, "In what ways, if any, has finding out your type helped you to understand yourself better", just over a quarter of respondents said that finding out their type had helped them to understand themselves better, either without further detail or in combination with other, different responses. Other frequent answers included greater self-acceptance and more understanding of others. Several respondents gave examples of how finding out about specific aspects of type had been useful, in particular Extraversion and Introversion. Six percent said that finding out their type had not helped them to understand themselves better or had not helped much. Most of these were from individuals who already felt they understood themselves very well (for example, "It just confirmed what I already knew", "None really. I was pretty sure who I was/am").
- In response to the question, "In what ways, if any, has finding out your type been counterproductive or less useful", two-thirds of respondents said that finding out their type had been helpful or useful, and not counterproductive. The most common negative response was from those who felt that they could become more aware of the possible downsides of their type preference, closely followed by being "put in a box", though many of these respondents saw this as a possibility or a danger rather than an actuality.
- Overall, the results suggest that in general neurodivergent individuals have found type and the MBTI assessment relevant and useful, though not always quite as useful as neurotypical individuals did.

Recommendations

- The results of this study suggest that neurodivergence may be under-diagnosed. Organizations should be aware that their employees might show a greater range of neurodiversity than they may realise, and that many people may have multiple forms of neurodivergence.
- On average, neurodivergent people felt less accepted and supported at work than neurotypical people. Two-thirds felt that their organization should do more to educate employees about neurodiversity, and just over half that people at work often misunderstood their behaviors or actions. There is a case for education and training of the wider workforce, and in particular managers, to allow neurodivergent people to feel better supported.
- There is also a need for organizations to be more open to neurodivergent people and to different ways of working and acting. 67% had changed their behavior to fit in at work and 63% said that they masked their behavior. Only 47% felt that they could be their authentic self at work, and 45% said they didn't feel that they could talk about their neurodivergence at work.
- Traditionally, development programs have looked to identify development needs and apply training or other interventions to bring individuals up to an acceptable level across the board. This approach may work less well for neurodivergent people. Here, an approach that allows individuals to make the most of their strengths may pay dividends. Respondents who had been able to adapt to 'craft' their job to make the best use of their neurodiversity had higher job satisfaction, felt more included, were less stressed, and saw their behavior as less likely to be misunderstood or cause them problems.
- The results suggest a tendency to under-diagnose women with ASD, and/or over-diagnose men, something that has also been suggested by previous research. Organizations, HR specialists, and managers should be aware that women as well as men can have ASD.
- Overall, those with an Introversion or an Intuition preference were more likely to have received a neurodivergent diagnosis of some kind than those with an Extraversion or a Sensing preference, and several relationships were found between type and specific conditions. However, type should not be used to 'explain away' or gloss over neurodivergence. Taking both into account can help people to understand themselves more fully.
- In general, neurodivergent individuals found type and the MBTI assessment relevant and useful, though not always quite as useful as neurotypical individuals did. However, many neurodivergent people did find MBTI feedback extremely useful, especially in helping them to understand themselves better. There is no reason why the MBTI assessment should not be used with neurodivergent individuals.
- Some comments point out specific issues to be aware of when using the MBTI assessment with neurodivergent people. These are described in more detail in the guidelines for practitioners, available from The Myers-Briggs Company, and are summarized in the final section of this report.

Introduction and methodology

Introduction

Neurodivergent, neurotypical, or neurodiverse?

Around 15 to 20% of the population of the world are **neurodivergent** (Doyle, 2020). Their cognitive functioning is different from what society sees as typical or has decided is 'normal'. 'Different' does not of course mean 'better' or 'worse', though many organizations and workplaces are set up in a way that can make life more difficult, or more complicated, for neurodivergent people. Being neurodivergent is often contrasted with being **neurotypical**, where one's mental functioning corresponds with what society sees as typical or 'normal'.

Rather than 'neurodivergent', you will often hear the words **neurodiversity** or **neurodiverse** being used. Strictly speaking, neurodiversity refers to the whole range of neurological functioning across the whole population, and this was the meaning originally intended when Judy Singer coined the term (Singer, 1999). In this sense, we are all neurodiverse, though in the words of Atif Choudhry, Co-founder of Diversity & Ability, "We are all neurodiverse, but not all of us are marginalised for it."¹ 'Neurodiverse' has for many become the most common way of saying 'neurologically different' and is often used as a synonym for 'neurodivergent'. However, there are issues with using the word neurodiverse in this way, such as:

- Some neurodivergent people and their allies object to this usage of 'neurodiverse'.
- As mentioned above, 'neurodiverse' takes in the whole spectrum of human cognitive functioning.
- Strictly speaking, 'neurodiverse' can only be applied to groups, whereas 'neurodivergent' can be applied to individuals.

This report will therefore use 'neurodivergent' by default, unless the whole range of human functioning is being discussed.

Purpose of this research

This study has several aims:

- To investigate differences in workplace experiences between neurodivergent and neurotypical people. Are there differences in how included people feel themselves to be, the extent to which they feel their behavior is misunderstood, how stressed they feel at work, their self-image, their views on neurodivergence and neurodiversity, and how they see their organization? Are there differences in job satisfaction? In this analysis, 'neurodivergent people' will not solely be treated as one group; where sample sizes allow, different forms of neurodivergence will also be investigated separately. See below for more information on types of neurodivergence.
- To look at how supportive neurodivergent people feel their organizations to be, the extent to which they feel that their neurodivergence confers an advantage at work, the extent to which they mask or hide their neurodivergence, and the extent to which they

¹ Quoted at <https://www.makingbusinessmatter.co.uk/neurodiverse/>

have a positive view of neurodivergence, even to the extent of becoming a neurodivergent advocate.

- To investigate the relationship between personality type and neurodivergence. There is a diversity of personality types across the population, and therefore personality can be seen as one form of neurodiversity. While there has been some research into the relationship between personality and neurodivergence, much of this has used trait measures of personality such as the Five-Factor Model (FFM). Little research has been carried out using the psychological type approach, as exemplified by the Myers-Briggs Type Indicator® (MBTI®) assessment (Myers, McCaulley, Quenk, & Hammer, 2018), even though the MBTI model is widely used by individuals and organizations (Furnham, 2017). This research seeks to fill this gap. See the section “the MBTI framework” below for more information on the type approach to personality and the MBTI assessment.
- To investigate the inter-relationships, or intersectionality, of neurodivergence with characteristics such as gender, age, job level and remote working as well as with personality type.
- To investigate how completing the MBTI assessment and receiving feedback has been useful, or counter-productive, for neurodivergent people.
- To use the results of these analyses to make practical recommendations.

Neurodivergent or dysfunctional?

Historically, the medical model was applied to neurodivergence. People who might now see themselves or be described as neurodivergent were seen as suffering from a medical condition or disorder, or from some form of dysfunction, learning disability, deficit, or impairment. The concept of neurodiversity replaced this with the idea that there is a range of human characteristics, with some people (the neurotypical) closer to the average and others (the neurodivergent) further from the average. As such, neurodivergent people may have both strengths at work and areas they find difficult, depending on the nature of their diversity. One of the aims of this study was to investigate where these groups felt their strengths lay.

Forms of neurodivergence

The idea that we are all neurodiverse means that neurodivergent individuals do not have to be seen as suffering from a specific illness or condition. Nevertheless, most people find it useful to distinguish between different forms of neurodivergence. Some of the most frequently occurring are described briefly below, and in more detail in specific sections later in this report. In practice, many individuals will show behaviors associated with more than one of these.

- **Attention deficit hyperactivity disorder (ADHD).** People with ADHD can seem restless, may have trouble with concentration and attention, and/or may act on impulse more than other people. Some people with ADHD are more inattentive (not paying attention to detail, not listening, getting distracted, making mistakes), others more hyperactive or impulsive (fidgeting, never staying still, talking too much, interrupting, not staying seated). Many show a combination of the two. While ADHD may affect tasks that involve attention to detail, repetitive tasks, rule following or strict management of time and resources, people with ADHD can be very creative and energetic. When they are doing a job that they enjoy and find interesting, they may show ‘hyperfocus’, avoiding distractions and producing high-quality and incisive results.

- **Autism spectrum disorder (ASD).** Autistic people may find it hard to communicate and interact with other people and can find it hard to understand how other people think or feel. Some may find things like bright lights or loud noises overwhelming, stressful, or uncomfortable, and get anxious or upset about unfamiliar situations and social events. Some can take longer to understand information while some do or think the same things over and over. However, it is important to emphasize that autism represents a spectrum of different behaviors. For most people, not all these issues will apply, and those that do will differ in their impact. Many autistic people can bring a high degree of attention, precision, and accuracy to tasks. They often have in-depth expertise and knowledge in specific areas, and many demonstrate a logical, analytical approach.
- **Dyscalculia** is a specific and persistent difficulty in understanding numbers, leading to a range of difficulties with mathematics. Those with dyscalculia may also have trouble understanding shapes, distance, or volume, or have difficulty with time, directions, recalling schedules, sequences of events, or financial planning. People with dyscalculia often see situations in a holistic way, leading to effective strategic decisions and creative problem-solving. They often have a great love of words and a high degree of practical ability.
- **Dyslexia.** People with dyslexia may read and write slowly, confuse the order of letters in words, be confused by letters that look similar, write letters the wrong way round (such as "b" and "d"), and have poor or inconsistent spelling. They may understand information when told verbally but have difficulty with information that is written down. They may, however, have advantages in areas such as big-picture or lateral thinking, visualization, and some forms of creativity.
- **Dyspraxia (developmental co-ordination disorder)** affects movement and co-ordination, impacting activities such as tasks requiring balance, playing sports, or learning to drive a car. Dyspraxia can also affect fine motor skills, such as writing or using small objects.
- Though **obsessive-compulsive disorder (OCD)** has historically been seen as a type of anxiety disorder or mental illness, it is now also often seen as a form of neurodiversity. In obsessive-compulsive disorder, a person has obsessive, unwanted, unpleasant and repeated thoughts and compulsive behaviors. These are repetitive acts that they feel compelled to do to relieve the unpleasant feelings brought on by the obsessive thought—for example, cleaning and hand washing, checking and rechecking, counting, or hoarding. The compulsive behavior temporarily relieves the anxiety, but the obsession and anxiety soon return, causing the cycle to begin again.
- **Tourette's syndrome** is a condition that causes a person to make involuntary sounds and movements called tics. These may be physical (such as blinking, eye rolling, jerking of the head or limbs, or touching objects and other people) or verbal (such as grunting, coughing, tongue clicking, or saying random words and phrases). Although swearing is often depicted as a symptom, only a small percentage of people with Tourette's syndrome do this.

Across populations, large numbers of people will be affected by one or more of these. Between 3 and 7% of children are affected by ADHD (Kessler, et al., 2006) and estimations for adults vary from 3.5% (de Graaf, et al., 2008) to almost 7% (Song, et al., 2021). 2.8% of 8-year-old children in the US and around 2% of adults have been diagnosed with autism spectrum disorder (Centers for Disease Control and Prevention (CDC), 2023). Some estimates suggest that 15% of the population may be affected by dyslexia. Overall, it is estimated that around 15 to 20% of the population worldwide are neurodivergent (Doyle, 2020).

The MBTI® framework

This research used the MBTI personality framework. The MBTI approach looks at four areas of personality:

- Is an individual energized by, and do they prefer to focus their attention on, the outside world of people and things (Extraversion) or their inner world of thoughts and feelings (Introversion)?
- Do they trust and prefer to use information that is practical and based on the evidence of their senses (Sensing) or do they pay more attention to connections, the big picture, and future possibilities (Intuition)?
- Do they prefer to make decisions based on objective logic (Thinking) or based on their values and on how people will be affected by the decision (Feeling)?
- Do they prefer to live their lives in an ordered, structured, planned way (Judging) or in an open, spontaneous, emergent way (Perceiving)?

Any one individual will therefore have preferences for either Extraversion (E) or Introversion (I), for Sensing (S) or for Intuition (N), for Thinking (T) or for Feeling (F), and for Judging (J) or for Perceiving (P). The four preferences combine dynamically to give one of 16 different personality types, such as 'ISTP' or 'ENFJ'. More detail about the MBTI framework is given in Appendix A.

In the context of this research, it is worth noting that many forms of neurodivergence are seen more frequently in the population than are some individual personality type preferences. For example, it is likely that there are fewer people with preferences for INFJ, or ENFJ, or ENTJ than there are people with ADHD, and fewer people with ENTJ preferences than there are people diagnosed with ASD. In other words, some forms of neurodivergence are more common in the population, less of a minority position, than several type preferences regarded as part of the 'normal' range of personality.

Methodology

To carry out the study, we created an online survey. This was sent out to anyone who had completed the MBTI assessment in the previous three months and who had said they may be interested in taking part in future research. The survey was also publicized via LinkedIn, on Facebook, and in online forums, with groups and forums run by or focused on neurodivergent people targeted. The intention was to achieve a broad range of neurodiversity across respondents, rather than to have a sample that was representative of the general population.

Survey respondents were asked to:

- Rate themselves, on a five-point scale, from "I have been diagnosed as having this condition" to "I am sure that I do not have this condition", on ADHD, ASD, dyscalculia, dyslexia, dyspraxia, OCD, and Tourette's syndrome.
- Complete 40 multiple-choice questions relating to workplace experiences, including how included respondents felt themselves to be, the extent to which they felt their behavior was misunderstood, how stressed they felt at work, their self-image, their views on neurodivergence and neurodiversity, and how they saw their organization.
- Rate their level of job satisfaction.
- For respondents who saw themselves as neurodivergent or neurodiverse, to complete 14 further questions relating to how supportive they saw their organizations as being, the

extent to which they felt that their neurodivergence conferred an advantage at work, the extent to which they masked or hid their neurodivergence, and the extent to which they had a positive view of neurodivergence,

- Enter their MBTI type:
 - Respondents who knew their type were also asked how this had helped them or been counterproductive.
 - Respondents who did not know their type were asked to complete a short form of the assessment, which was used to estimate their type.
- Complete demographic questions including gender, age, location, job level, and degree of remote working.
- Complete a short checklist of ADHD symptoms, part 1 of the *Adult ADHD Self-Report Scale (ASRS-v1.1) Symptom Checklist* (Adler, Kessler, & Spencer).

Because respondents may not have been familiar with the term 'neurodivergent', the words 'neurodiverse' and 'neurodiversity' were used in many survey questions, even though, as outlined earlier, this phrasing is not strictly correct.

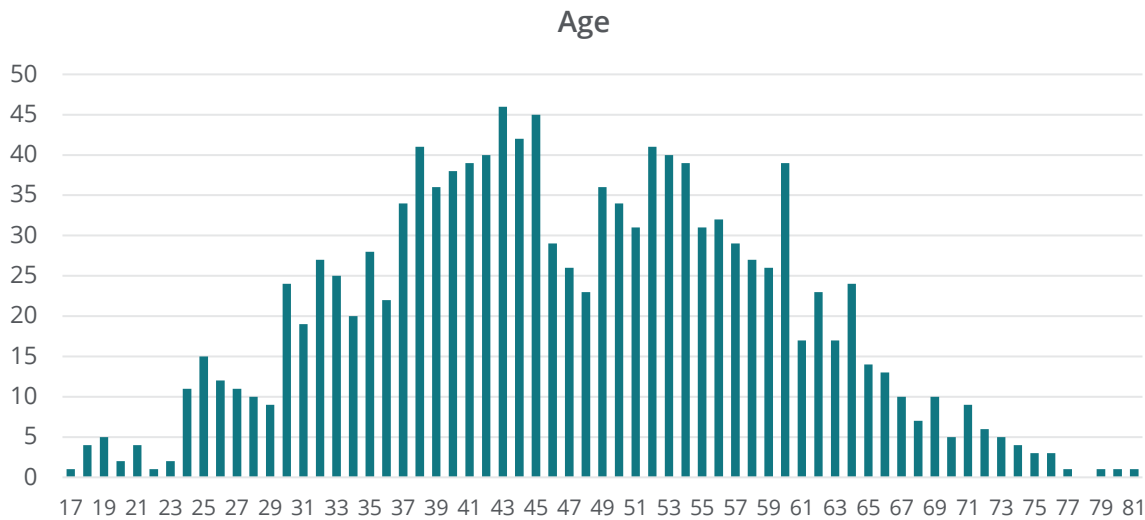
In total, 1,361 individuals completed the survey and were included in the analysis.

Results

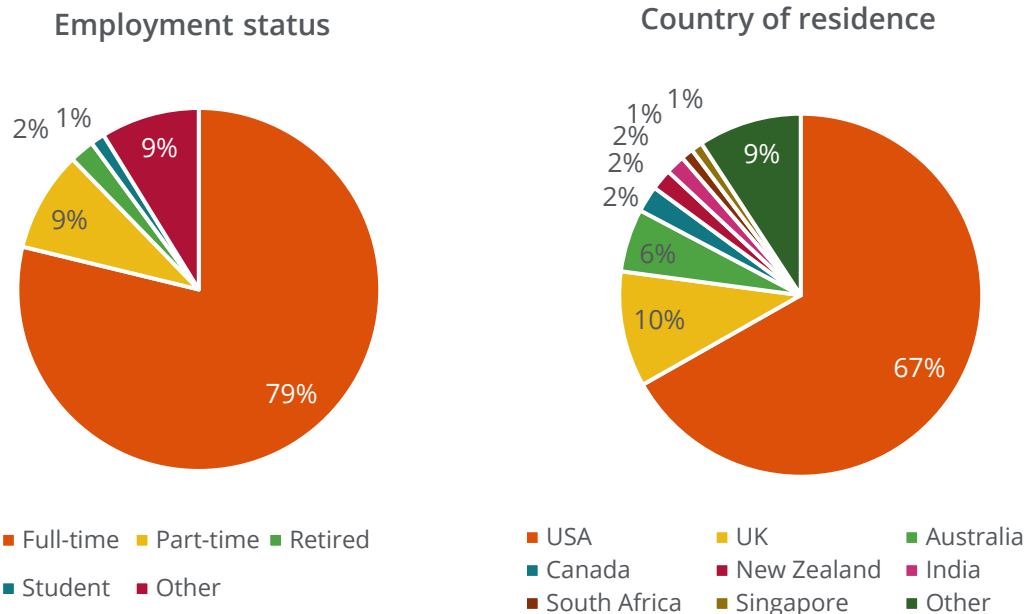
Who took part? Description of the sample

Group demographics

68.5% of the group were female, and 28.6% male, with 1.6% choosing “prefer to self-describe” and 1.2% “prefer not to say.” Age ranged from 17 to 81 years, with an average (mean) of 47.

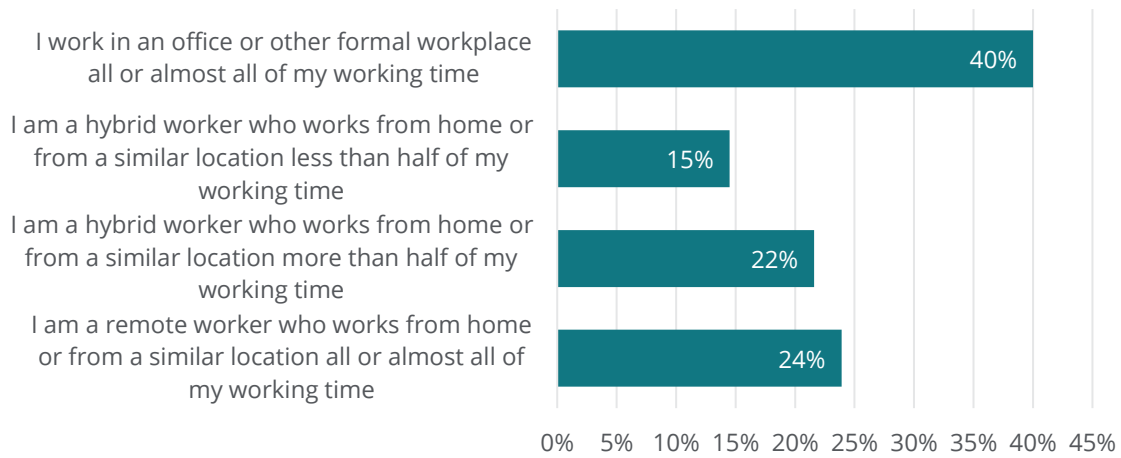


Most respondents (88%) were employed full-time or part-time in an organization. Two-thirds of respondents lived and worked in the USA.



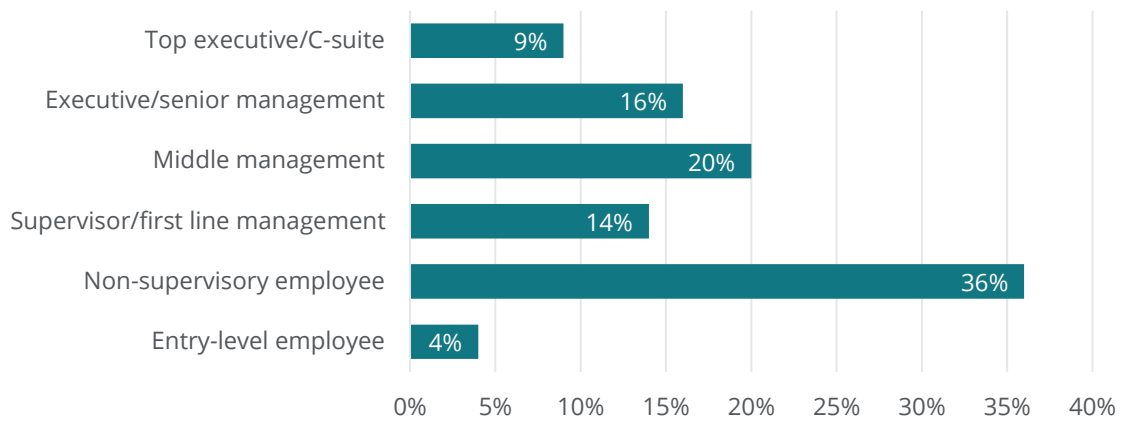
Among those who were employed, a range of remote, hybrid, and non-remote working patterns were shown.

Remote, hybrid, or workplace?



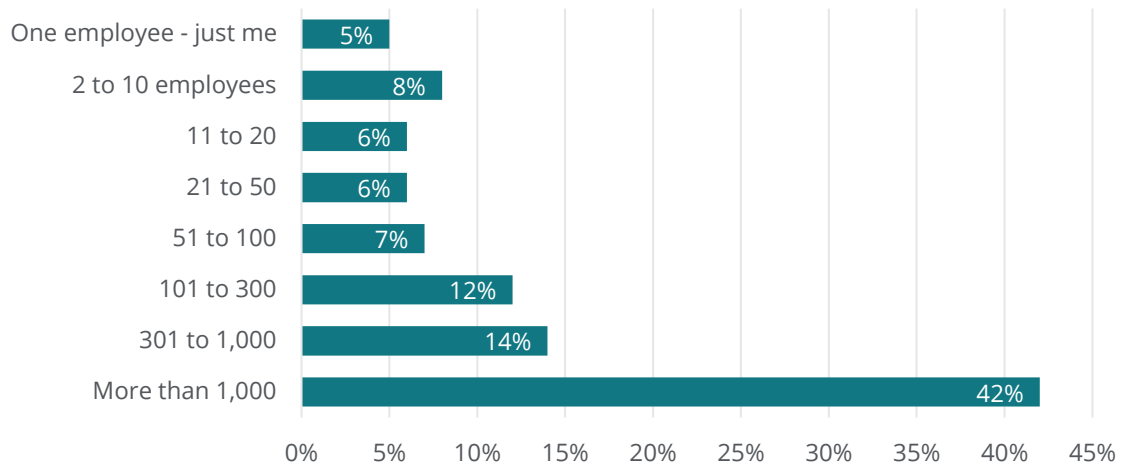
A range of job levels were represented.

Job level



And a range of organization sizes.

Organization size



Relationships between demographic variables

There were several inter-relationships between the various demographic variables:

- On average, male respondents were 2 years older than female respondents (Cohen $d=0.15^2$, a statistically significant but objectively small difference) and were more likely to be in high-level jobs (35% of men compared with 21% of women).
- Those in higher-level jobs were on average somewhat older.

MBTI® type distribution

Type data was available for 1,285 individuals, consisting of 1,057 people who knew their type and 228 who completed the additional questions. A type table for the whole group of 1,285 people is shown below:

| Type | N | % |
|------|-----|-------|
| E | 514 | 40.0% |
| I | 772 | 60.0% |
| S | 474 | 34.1% |
| N | 812 | 63.1% |
| T | 655 | 50.9% |
| F | 631 | 49.1% |
| J | 783 | 60.9% |
| P | 503 | 39.1% |

| MBTI Type | N | % | SSR |
|-----------|-----|-------|------|
| ISTJ | 128 | 10.0% | 0.63 |
| ISFJ | 72 | 5.6% | 0.67 |
| INFJ | 143 | 11.1% | 4.84 |
| INTJ | 163 | 12.7% | 4.88 |
| ISTP | 44 | 3.4% | 0.35 |
| ISFP | 38 | 3.0% | 0.45 |
| INFP | 106 | 8.2% | 1.31 |
| INTP | 78 | 6.1% | 1.26 |
| ESTP | 33 | 2.6% | 0.42 |
| ESFP | 29 | 2.3% | 0.38 |
| ENFP | 114 | 8.9% | 1.08 |
| ENTP | 61 | 4.7% | 1.10 |
| ESTJ | 71 | 5.5% | 0.61 |
| ESFJ | 58 | 4.5% | 0.79 |
| ENFJ | 70 | 5.4% | 2.48 |
| ENTJ | 77 | 6.0% | 3.33 |

² Cohen's d is a measure of the size of the difference between two means. With a large sample, a difference might be statistically significant, but not mean a great deal in practical terms. A d of 0.5 means that two groups differ by half a standard deviation, a d of 1 that they differ by 1 standard deviation, and so on. A d of 0.2 is considered small, 0.5 medium, and 0.8 large. If d is much smaller than 0.2, then the difference is negligible and not of practical importance, even if it is statistically significant.

The SSR (Self-Selection Ratio) compares the sample to the general population. Types with an SSR greater than 1 are over-represented in this group compared with the general population.³ Several Intuition types are therefore over-represented, in particular NJ types (ENFJ, ENTJ, INFJ, and INTJ). Several Sensing types are under-represented, in particular SP types. An over-representation of Intuition is not uncommon in a group of people interested in personality type. However, there are enough people of each type preference in the sample to carry out meaningful analyses at the preference pair level and for a number of type combinations or lenses.

Relationships between MBTI® type and demographic data

There were two significant differences⁴ related to MBTI type:

- 55% of women had a Feeling preference; 64% of men had a Thinking preference. Women were more likely than men to have a Feeling preference, men more likely than women to have a Thinking preference. This is a common finding that has been seen in previous studies (for example, Hackston, 2017; Myers, McCaulley, Quenk, & Hammer, 2018).
- Those in more senior roles were more likely than those in more junior roles to have preferences for Extraversion and for Thinking, rather than for Introversion and for Feeling.

³ The MBTI Global sample (Myers, McCaulley, Quenk, & Hammer, 2018) was used as a reference group.

⁴ Based on chi-square analyses.

Neurodivergent identity

Do respondents see themselves as neurotypical or as neurodivergent?

All respondents were asked to what extent they agreed with the statement, “I see myself as more neurotypical than neurodiverse or neurodivergent”. 34% disagreed or strongly disagreed, suggesting that around a third of respondents saw themselves as neurodivergent to some extent.

| | | | |
|---|----------------------------|-------|-------|
| I see myself as more neurotypical than neurodiverse or neurodivergent | Strongly disagree | 12.7% | 34.4% |
| | Disagree | 21.7% | |
| | Neither agree nor disagree | 26.2% | 39.5% |
| | Agree | 31.7% | |
| | Strongly agree | 7.8% | |

Forms of neurodivergence

Survey respondents were given a list of seven neurodivergent conditions (ADHD, ASD, dyscalculia, dyslexia, dyspraxia, OCD, and Tourette’s syndrome) plus an ‘other, please specify’ category. For each, they were asked to rate themselves on the following scale:

- I have been diagnosed as having this condition.
- I have not been diagnosed but I believe I have this condition.
- I think I may have this condition.
- I do not think I have this condition.
- I am sure I do not have this condition.

Analysis of respondents’ answers to the ‘other’ category allowed some additional forms of neurodivergence, self-identified by respondents, to be identified.

| Form of neurodivergence | Diagnosed | I believe I have this | I think I may have this | I do not think I have this | I’m sure I do not have this |
|-------------------------|-----------|-----------------------|-------------------------|----------------------------|-----------------------------|
| ADHD | 16% | 13% | 13% | 29% | 29% |
| ASD | 5% | 6% | 8% | 30% | 50% |
| OCD | 4% | 6% | 14% | 33% | 42% |
| Dyslexia | 2% | 4% | 5% | 23% | 66% |
| Anxiety, depression | 2% | (0.1%) | (0.1%) | 0% | 98% |
| Dyspraxia | 1% | 1% | 3% | 27% | 68% |

| | | | | | |
|-----------------------------|--------|--------|--------|-----|-----|
| Dyscalculia | 1% | 3% | 4% | 29% | 63% |
| Tourette's syndrome | 1% | 1% | 1% | 17% | 81% |
| PTSD | 1% | 0% | 0% | 0% | 99% |
| Bipolar disorder | 1% | 0% | 0% | 0% | 99% |
| Sensory processing disorder | (0.4%) | (0.4%) | (0.1%) | 0% | 99% |
| Dysgraphia | (0.2%) | (0.1%) | (0.1%) | 0% | 99% |
| Other | 3% | 1% | 2% | 17% | 77% |

ADHD, ASD, and OCD were the forms of neurodivergence most often identified with. Dyslexia, dyspraxia, and dyscalculia also showed a spread of results across the different levels of the scale. Detailed analysis will therefore focus on these six categories.

Overall, just over 25% of respondents had been diagnosed as having a neurodivergent condition. This contrasts with the greater number (34%) who do not see themselves as neurotypical.

| Number of conditions diagnosed | Frequency | Percentage |
|--------------------------------|-----------|------------|
| No conditions diagnosed | 1012 | 74.4% |
| One condition diagnosed | 106 | 7.8% |
| Two conditions diagnosed | 168 | 12.3% |
| Three conditions diagnosed | 51 | 3.7% |
| Four conditions diagnosed | 11 | 0.8% |
| Five conditions diagnosed | 6 | 0.4% |
| Six conditions diagnosed | 2 | 0.1% |
| Seven conditions diagnosed | 4 | 0.3% |
| Eight conditions diagnosed | 1 | 0.1% |

In our data, many neurodivergent people had multiple diagnoses. 243 people, 18% of the total and 70% of those with any diagnosis, had been diagnosed with more than one condition. 75 people, 5.4% of the total and 21% of those with any diagnosis, had been diagnosed with 3 or more conditions. Similar findings have been reported in other research; for example, the Centers for Disease Control and Prevention (CDC) found that 14% of children with ADHD also had autism spectrum disorder. Across different studies, between 30% and 50% of individuals diagnosed with ASD also show elevated levels of ADHD symptoms (Davis & Kollins, 2012).

Respondents were asked not only if they had been diagnosed with each condition, but also if they believed that they had the condition. If those who believe they have a condition are added to those diagnosed, then 573 people, 42% of respondents, had been diagnosed with or believed

they had at least one neurodivergent condition. 445 people, 33% of the total, had been diagnosed with or believed that they had more than one condition. 205 people, 15% of the total, had been diagnosed with or believed that they had 3 or more conditions.

| Number of conditions diagnosed or believed to have | Frequency | Percentage |
|--|-----------|------------|
| No conditions diagnosed or believed to have | 788 | 57.9% |
| One condition diagnosed or believed to have | 128 | 9.4% |
| Two conditions diagnosed or believed to have | 240 | 17.6% |
| Three conditions diagnosed or believed to have | 129 | 9.5% |
| Four conditions diagnosed or believed to have | 46 | 3.4% |
| Five conditions diagnosed or believed to have | 9 | .7% |
| Six conditions diagnosed or believed to have | 7 | .5% |
| Seven conditions diagnosed or believed to have | 4 | .3% |
| Eight conditions diagnosed or believed to have | 4 | .3% |
| Nine conditions diagnosed or believed to have | 6 | .4% |

Only 201 people, 15% of the sample, said that they were sure that they did not have any of the neurodivergent conditions.

The following table shows, for each form of neurodivergence, the percentage of people in the sample who had also been diagnosed with another condition. For example, 14% of those diagnosed as having ADHD had also been diagnosed as having ASD, while 40% of those diagnosed as having ASD had also been diagnosed as having ADHD—in the middle of the range reported by Davis & Kollins.

| | ADHD | ASD | OCD | Dyslexia | Dyspraxia | Dyscalculia | Tourette's |
|-------------|------|-----|-----|----------|-----------|-------------|------------|
| ADHD | - | 14% | 11% | 5% | 4% | 3% | 2% |
| ASD | 40% | - | 16% | 8% | 11% | 8% | 8% |
| OCD | 41% | 20% | - | 5% | 9% | 7% | 5% |
| Dyslexia | 35% | 21% | 10% | - | 31% | 28% | 21% |
| Dyspraxia | 50% | 50% | 31% | 56% | - | 44% | 44% |
| Dyscalculia | 50% | 50% | 33% | 67% | 58% | - | 58% |
| Tourette's | 46% | 55% | 27% | 55% | 64% | 64% | - |

As respondents were asked to rate themselves on a 5-point scale from “I have been diagnosed as having this condition” to “I am sure I do not have this condition”, their answers to these questions were intercorrelated. The results show correlations above 0.4 between ADHD and ASD, between dyslexia, dyspraxia, and dyscalculia, and between dyspraxia, dyscalculia, and Tourette’s syndrome.

| | ADHD | ASD | OCD | Dyslexia | Dyspraxia | Dyscalculia | Tourette’s |
|-------------|------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| ADHD | 1 | .406** <.001 | .242** <.001 | .238** <.001 | .276** <.001 | .262** <.001 | .198** <.001 |
| ASD | | 1 | .242** <.001 | .249** <.001 | .386** <.001 | .345** <.001 | .334** <.001 |
| OCD | | | 1 | .170** <.001 | .243** <.001 | .240** <.001 | .225** <.001 |
| Dyslexia | | | | 1 | .480** <.001 | .437** <.001 | .359** <.001 |
| Dyspraxia | | | | | 1 | .475** <.001 | .500** <.001 |
| Dyscalculia | | | | | | 1 | .478** <.001 |
| Tourette’s | | | | | | | 1 |

N= 1,361. ** significant at the 0.001 level.

Summary

- Just over 25% of respondents had been diagnosed as having some form of neurodivergent condition.
- Depending on the precise question asked of them, between 34% and 42% of respondents considered themselves to be neurodivergent to at least some extent.
- ADHD was, by some distance, the most common form of neurodivergence seen in this group. ASD and OCD were the next most common.
- It was common for neurodivergent people to have been diagnosed with multiple conditions. 349 people, 18% of the total and 70% of those with any diagnosis, had been diagnosed with more than one condition.
- The largest overlaps or correlations between conditions included: between ADHD and ASD; between dyslexia, dyspraxia, and dyscalculia; between dyspraxia, dyscalculia, and Tourette’s syndrome.

Views on and experience of the workplace

Overview

Survey respondents were given 40 statements relating to how they experienced the workplace and asked to rate each on a scale from 1 (Strongly disagree) to 5 (Strongly agree). The following table shows the average (mean) and standard deviation for each statement, and the percentage of the sample who agreed or strongly agreed.

| Statement | Mean | SD | Percent agree or strongly agree |
|---|------|------|---------------------------------|
| If I need to, I can get a lot done in a short time | 4.35 | .71 | 93% |
| When I am doing something I really enjoy, I can focus on this for hours and hours | 4.28 | .83 | 87% |
| Most people do not know enough about neurodiversity | 4.26 | .75 | 86% |
| I am a very resilient person | 4.12 | .82 | 86% |
| I'm good in a crisis | 4.00 | .89 | 80% |
| I usually follow the rules | 3.95 | .83 | 81% |
| I notice details that others miss | 3.93 | .88 | 75% |
| Organizations that do not pay attention to neurodiversity are missing out | 3.90 | .78 | 72% |
| I come up with lots of new ideas | 3.83 | .92 | 70% |
| My manager or supervisor supports me at work | 3.83 | 1.00 | 74% |
| I am an expert in my field | 3.81 | .92 | 70% |
| I feel accepted by my co-workers | 3.77 | .93 | 73% |
| I feel included by my manager or supervisor | 3.71 | 1.07 | 68% |
| I feel comfortable and at home in my organization | 3.64 | 1.03 | 66% |
| I can do detailed work – but only if it interests me | 3.64 | 1.09 | 66% |
| I am more productive than most of my co-workers | 3.57 | .96 | 54% |
| I feel valued by my organization | 3.56 | 1.11 | 61% |
| I am more creative than most people | 3.54 | .99 | 53% |
| I am able to be my authentic self at work | 3.53 | 1.13 | 64% |
| My co-workers make an effort to include me | 3.51 | .88 | 58% |
| I prefer working at home to working in the office | 3.39 | 1.27 | 48% |
| I have a lot of energy | 3.38 | 1.11 | 51% |
| I rarely feel excluded by my co-workers | 3.35 | 1.09 | 54% |
| My organization is positive about neurodiversity | 3.33 | .88 | 40% |
| I do not always understand other people's behavior | 3.31 | 1.15 | 53% |
| My job makes me stressed | 3.29 | 1.10 | 48% |

| | | | |
|--|------|------|-----|
| I find work stressful | 3.26 | 1.06 | 48% |
| I have changed my behavior to fit in at work | 3.24 | 1.12 | 50% |
| I usually say what I think, without holding back | 3.17 | 1.08 | 46% |
| I see myself as more neurotypical than neurodiverse or neurodivergent | 3.00 | 1.16 | 40% |
| I find that people at work often misread my behaviors or actions | 2.94 | 1.12 | 34% |
| Neurotypical people cause far more problems at work than neurodivergent people do | 2.92 | .86 | 17% |
| People at work don't really understand me | 2.82 | 1.08 | 30% |
| The way in which I think and act has caused me problems at work | 2.73 | 1.18 | 32% |
| I sometimes feel marginalized at work | 2.72 | 1.13 | 30% |
| Sometimes I don't understand my own behavior | 2.71 | 1.20 | 33% |
| At work, I have heard negative or rude comments about neurodiversity | 2.54 | 1.13 | 23% |
| Too much fuss is made about neurodiversity these days | 2.34 | .98 | 10% |
| The best neurodivergent employee can never perform as well as the best neurotypical employee | 2.08 | 1.00 | 7% |
| I have had significant periods of unemployment in my working life | 1.83 | 1.18 | 14% |

Workplace scales

These items were used to produce 6 scales measuring how included people feel themselves to be, the extent to which they feel their behavior is misunderstood or causes them problems, how stressed they feel at work, their self-image, their views on neurodivergence and neurodiversity, and how they see their organization. The following table shows the six scales. All had acceptable or good internal consistency reliabilities.

| Scale | Example items | Mean | SD | Alpha | No. items |
|---|--|-------|-------|-------|-----------|
| Inclusion <i>I feel included at work</i> | I feel included by my manager or supervisor I feel valued by my organization I rarely feel excluded by my co-workers | 3.624 | 0.779 | 0.882 | 7 |
| Misunderstood <i>My behavior is misunderstood or causes me problems</i> | I find that people at work often misread my behaviors or actions People at work don't really understand me The way in which I think and act has caused me problems at work | 2.798 | 0.911 | 0.800 | 4 |

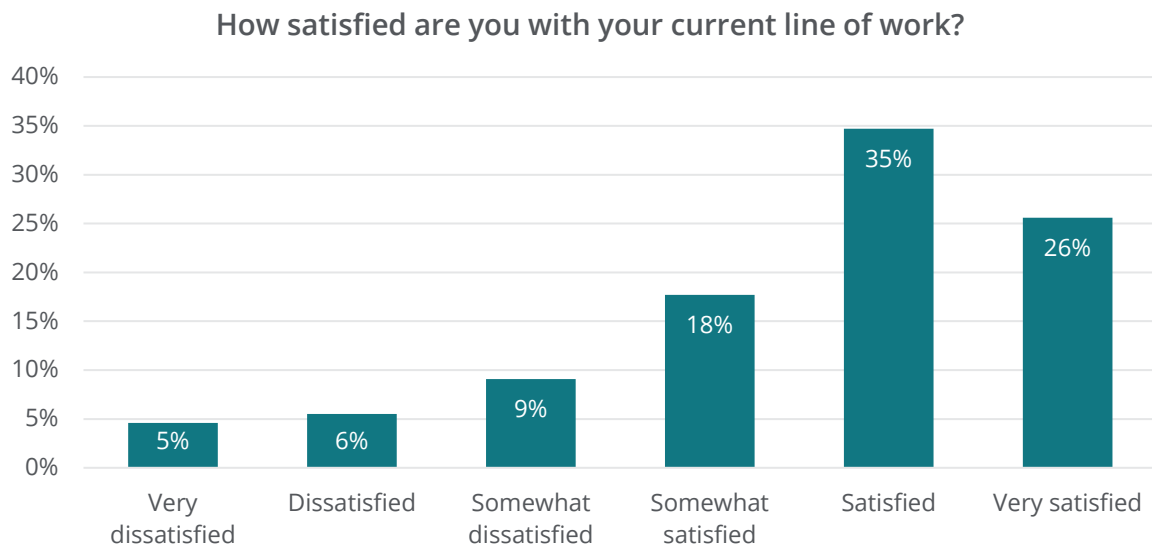
| | | | | | |
|---|--|-------|-------|-------|---|
| Workplace stress <i>I feel stressed at work</i> | I find work stressful My job makes me stressed | 3.278 | 1.015 | 0.872 | 2 |
| Positive self-image <i>I am resilient, creative, energetic and productive.</i> | I am an expert in my field I come up with lots of new ideas If I need to, I can get a lot done in a short time | 3.826 | 0.548 | 0.734 | 8 |
| Organizational attitude <i>My organization has a positive attitude to neurodivergence</i> | I am able to be my authentic self at work I sometimes feel marginalized at work* My organization is positive about neurodiversity | 3.271 | 0.739 | 0.708 | 5 |
| Neurodiversity attitude <i>Personal views on neurodiversity</i> | Most people do not know enough about neurodiversity Organizations that do not pay attention to neurodiversity are missing out Too much fuss is made about neurodiversity these days* | 3.936 | 0.628 | 0.662 | 4 |

*Scored negatively

In addition, the question “I have had significant periods of unemployment in my working life” (mean: 1.83, SD: 1.18) was analyzed separately.

Job satisfaction

All respondents were asked, “How satisfied are you with your current line of work”. 60% were satisfied or very satisfied.



Relationship with forms of neurodivergence

Scores on each scale were correlated with the 1-5 self-reported scores on ADHD, ASD, OCD, and dyslexia, and with the number of conditions diagnosed and the number of conditions that an individual had been diagnosed with or believed they had.

| | Inclusion | Misunderstood | Workplace stress | Positive self-image | Org. attitude | NeuroD attitude |
|---|-----------|---------------|--------------------|---------------------|---------------|---------------------|
| ADHD | -.225** | .398** | .284** | .003 ^{NS} | -.338** | .249** |
| ASD | -.317** | .479** | .281** | -.054 ^{NS} | -.441** | .243** |
| OCD | -.111** | .225** | .184** | -.029 ^{NS} | -.126** | .029 ^{NS} |
| Dyslexia | -.076** | .164** | .077** | .026 ^{NS} | -.113** | .005 ^{NS} |
| Dyspraxia | -.097** | .194** | .146** | -.032 ^{NS} | -.170** | .006 ^{NS} |
| Dyscalculia | -.100** | .195** | .151** | -.006 ^{NS} | -.144** | .020 ^{NS} |
| Tourette's syndrome | -.059* | .119** | .052 ^{NS} | .041 ^{NS} | -.085** | -.037 ^{NS} |
| Number of conditions diagnosed | -.178** | .303** | .208** | .029 ^{NS} | -.273** | .201** |
| N. conditions diagnosed or believed to have | -.215** | .358** | .254** | .033 ^{NS} | -.315** | .230** |

N=1350 to 1361. NS: Not significant. *: significant at the 0.05 level **: significant at the 0.01 level.

| | Significant periods of unemployment (N=1361) | Job satisfaction (N=1200) |
|---|---|------------------------------|
| ADHD | .148** | -.147** |
| ASD | .228** | -.172** |
| OCD | .052 ^{NS} | -.090** |
| Dyslexia | .033 ^{NS} | -.024 ^{NS} |
| Dyspraxia | .063* | -.068* |
| Dyscalculia | .091** | -.061* |
| Tourette's syndrome | .053 ^{NS} | -.007 ^{NS} |
| Number of conditions diagnosed | .156** | -.109** |
| N. conditions diagnosed or believed to have | .152** | -.119** |

N=1200 to 1361. NS: Not significant. *: significant at the 0.05 level **: significant at the 0.01 level.

The more positive an individual was that they had ADHD or ASD, and the more conditions they had been diagnosed with or believed they had, then the more they:

- Felt misunderstood and stressed at work.
- Believed that more attention should be paid to neurodiversity and neurodivergence.
- Were likely to have had significant periods of unemployment.

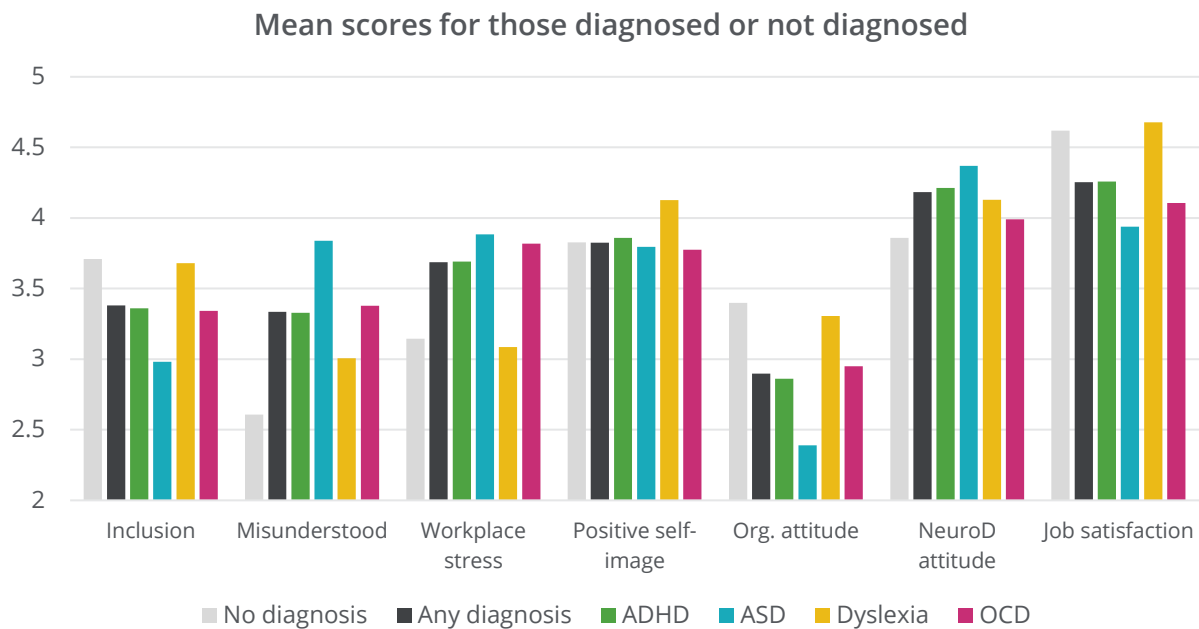
And the less they:

- Felt included at work.
- Believed that their organization was positive about neurodiversity.
- Felt satisfied with their job.

There was no significant relationship with positive self-image.

The more positive respondents were that they had OCD, dyslexia, dyspraxia, dyscalculia, and Tourette’s syndrome, then the more they felt misunderstood and stressed at work, and the less they felt included at work or believed that their organization was positive about neurodiversity.

To investigate these relationships further, the average (mean) scores of those not diagnosed with any condition were compared with the scores of those diagnosed with any condition, and with specific conditions where more than 25 people in the sample had been diagnosed—ADHD, ASD, dyslexia, and OCD.



These results show that:

- Those without any neurodivergent diagnosis felt less misunderstood than those diagnosed with any condition or with any individual condition. Compared to all conditions except dyslexia, they also felt more included, less stressed, were more likely to see their organization as positive about neurodiversity, and had a higher level of job satisfaction.
- Those diagnosed with ASD felt the least included, most misunderstood, and (together with those diagnosed with OCD) the most stressed. They had the lowest average level of job satisfaction, were the least likely to see their organization as positive about neurodiversity and had the strongest personal views on neurodivergence.
- The results for those diagnosed with dyslexia stand out. On average, they felt just as included as those with no diagnosis, were just as likely to see their organization as positive about neurodiversity, had a similar level of job satisfaction and perceived workplace stress, and a somewhat higher level of positive self-image. They felt more

misunderstood than those with no diagnosis, but less misunderstood than those with any other diagnosis.

- The positive self-image dimension showed little difference between groups, except for those diagnosed with dyslexia.

Relationship with demographic data

Women were more likely than men to feel that more attention should be paid to neurodiversity and were very slightly more likely to feel stressed at work. Men were somewhat more likely than women to have a positive self-image.



Younger respondents were somewhat more likely to feel stressed ($r=-.190$) or misunderstood ($r=-.156$). Older people were somewhat more likely to have a positive self-image ($r=.179$), to be satisfied with their job ($r=.164$), and to see their organization as positive about neurodiversity ($r=.133$).

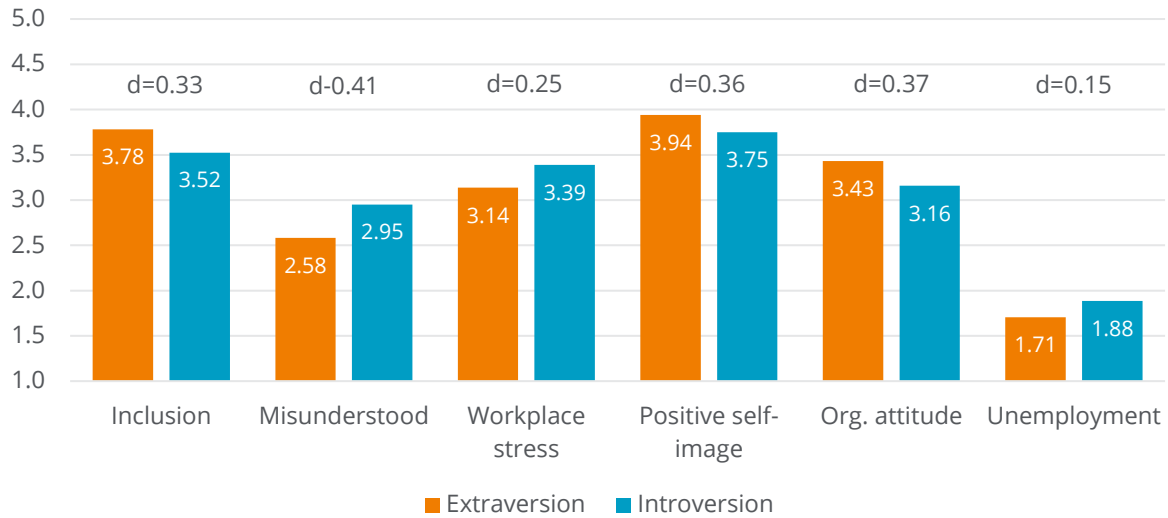
More senior people on average felt more included, less misunderstood, and less stressed. They had a more positive self-image and higher levels of job satisfaction and were less likely to have had significant periods of unemployment in their working life.

Remote and hybrid workers felt more included than those entirely based in an office or other workplace and had higher levels of job satisfaction. This result may seem counterintuitive but has been found in other research (for example, Hackston, 2022).

Relationship with personality type

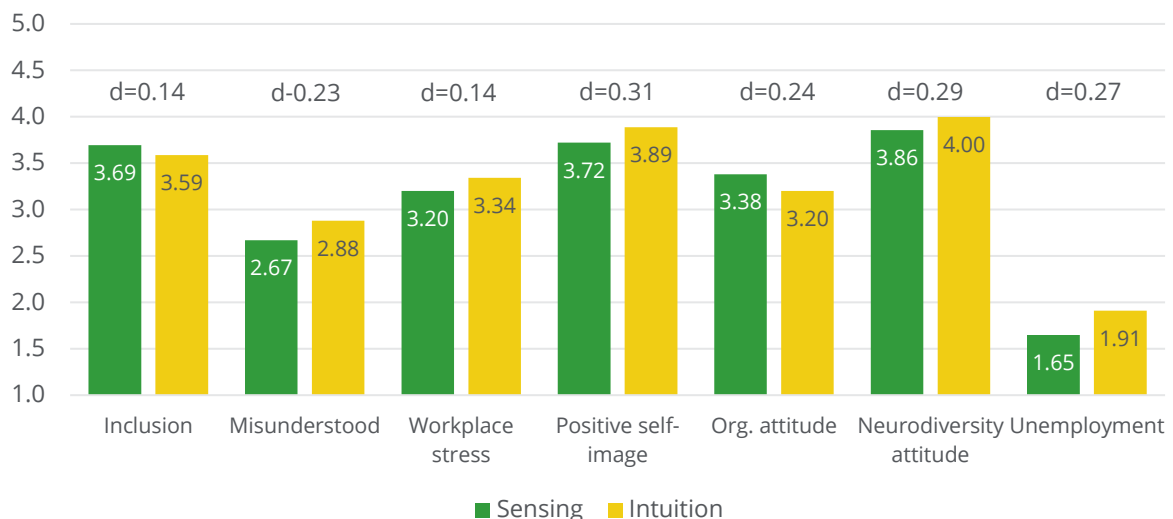
Based on independent-samples t-tests, there were several significant differences between those with Extraversion and Introversion preferences and those with Sensing and Intuition preferences, and somewhat fewer between those with Thinking and Feeling preferences. Effect sizes were small to moderate.

Extraversion–Introversion differences



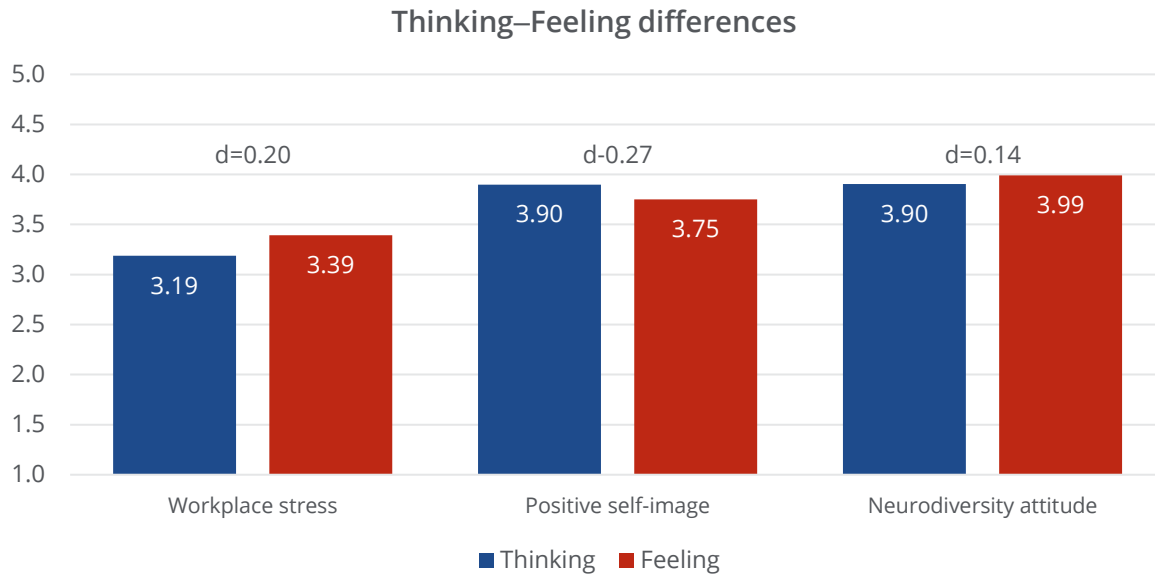
Those with an Introversion preference were more likely to feel their behavior is misunderstood and to be stressed at work and were very slightly more likely to have had significant periods of unemployment in their working lives. Those with an Extraversion preference were more likely to feel included, to have a positive self-image, and to see their organization as being positive about neurodivergence.

Sensing–Intuition differences



Those with a Sensing preference were more likely to see their organization as being positive about neurodivergence and on average felt very slightly more included. Those with an Intuition preference tended to have a more positive self-image, but also felt more misunderstood, very

slightly more stressed, were more likely to have had periods of unemployment, and were more likely to think that more attention should be paid to neurodiversity.



Those with a Thinking preference tended to have a more positive self-image. Those with a Feeling preference on average tended to feel more stressed and were very slightly more likely to think that more attention should be paid to neurodiversity.

There were no significant Judging–Perceiving differences.

In terms of whole type:

- Those with ESFP preferences were the most likely to feel included at work. Those with INTJ or INFJ preferences were the least likely.
- Those with INTP or INFJ preferences were the most likely to feel that their behavior is misunderstood or causes them problems. Those with ESFJ preferences were the least likely.
- Those with INFJ preferences were the most likely to feel stressed at work. Those with ENTP preferences were the least likely.
- Those with ENTJ preferences had the most positive self-image, those with ISFJ preferences the least positive.
- Those with ESFP preferences were the most likely to see their organization as having a positive attitude to neurodivergence. Those with INFJ preferences were the least likely.
- Those with ENFJ preferences were the most likely to say that more attention should be paid to neurodiversity. Those with ESFP preferences were the least likely.
- Those with INFJ preferences were the most likely to have had periods of unemployment. Those with ESFJ or ESTJ preferences were the least likely.
- There was no significant difference in terms of job satisfaction.

Summary

- Respondents' answers to questions on their views on the workplace could be resolved into 6 scales, plus two additional questions:
 - Inclusion: how included people feel at work.
 - Misunderstood: the extent to which their behavior is misunderstood or causes them problems.
 - Workplace stress.
 - Positive self-image: how resilient, creative, energetic, and productive they feel.
 - Organizational attitude: does their organization have a positive attitude to neurodivergence.
 - Neurodiversity attitude: do they personally have a positive view of neurodiversity.
 - Extent to which they have had significant periods of unemployment in their working life.
 - Job satisfaction.
- On average, respondents agreed that they felt included, had a positive attitude to neurodiversity, and had a positive self-image. They tended to agree that their organization had a positive attitude and that they were stressed at work, and tended to disagree that they were misunderstood. Over half were satisfied or very satisfied with their job.
- In general, people who saw themselves as neurodiverse were less positive than others:
 - The more sure an individual was that they had ADHD or ASD, and the more conditions they had been diagnosed with or believed they had, then the more they felt misunderstood and stressed at work, believed that more attention should be paid to neurodiversity and neurodivergence, and were likely to have had significant periods of unemployment. Additionally, the less they felt included at work, believed that their organization was positive about neurodiversity, or felt satisfied with their job.
 - The more sure respondents were that they had OCD, dyslexia, dyspraxia, dyscalculia, and Tourette's syndrome, then the more they felt misunderstood and stressed at work, and the less they felt included at work or believed that their organization was positive about neurodiversity.
 - Those diagnosed with ASD felt the least included, most misunderstood, and (together with those diagnosed with OCD) the most stressed. They had the lowest average level of job satisfaction, were the least likely to see their organization as positive about neurodiversity, and had the strongest personal views on neurodivergence.
 - On average, those diagnosed with dyslexia felt just as included as those with no diagnosis, were just as likely to see their organization as positive about neurodiversity, had a similar level of job satisfaction and perceived workplace stress, and a somewhat higher level of positive self-image. They felt more misunderstood than those with no diagnosis, but less misunderstood than those with any other diagnosis.
- Demographic differences:
 - Women were more likely than men to feel more attention should be paid to neurodiversity and were somewhat more likely to feel stressed at work. Men were somewhat more likely than women to have a positive self-image.

- Younger respondents were somewhat more likely to feel stressed. Older people were somewhat more likely to have a positive self-image, to be satisfied with their job, and to see their organization as positive about neurodiversity.
- More senior people on average felt more included, less misunderstood, and less stressed. They had a more positive self-image and higher levels of job satisfaction and were less likely to have had significant periods of unemployment in their working life.
- Remote and hybrid workers felt more included than those entirely based in an office or other workplace and had higher levels of job satisfaction.
- Personality differences:
 - Those with an Introversion preference were more likely to feel their behavior was misunderstood and to be stressed at work and were somewhat more likely to have had significant periods of unemployment in their working lives. Those with an Extraversion preference were more likely to feel included, to have a positive self-image, and to see their organization as being positive about neurodivergence.
 - Those with a Sensing preference were more likely to see their organization as being positive about neurodivergence and on average felt somewhat more included. Those with an Intuition preference tended to have a more positive self-image, but also felt more misunderstood, somewhat more stressed, were more likely to have had periods of unemployment and were more likely to think that more attention should be paid to neurodiversity.
 - Those with a Thinking preference tended to have a more positive self-image. Those with a Feeling preference on average tended to feel more stressed and were somewhat more likely to think that more attention should be paid to neurodiversity.
 - There were no significant Judging–Perceiving differences.

The workplace and the neurodivergent experience

Overview

Survey respondents were asked if they felt they were neurodivergent or neurodiverse, and if so, whether questions about the workplace were relevant to them. If both conditions were met, they were asked to complete 14 questions relating to their experience of their neurodivergence at work, on a scale from 1 (Strongly disagree) to 5 (Strongly agree). The following table shows the average (mean) and standard deviation for each statement, and the percentage of the sample who agreed or strongly agreed.

| Statement | Mean | SD | Percent agree or strongly agree |
|---|------|-------|---------------------------------|
| My neurodiversity allows me to excel at aspects of my work | 3.82 | 0.905 | 64% |
| I feel my organization should do more to educate our employees about neurodiversity | 3.74 | 0.896 | 64% |
| I have been able to adapt or 'craft' my job to make the best use of my neurodiversity | 3.69 | 0.926 | 62% |
| My own neurodiversity has caused me problems at work | 3.35 | 1.014 | 48% |
| I see my neurodiversity as my 'superpower' | 3.27 | 1.043 | 39% |
| I have to disguise or 'mask' my natural behavior at work | 3.20 | 1.196 | 46% |
| My manager is supportive of my neurodiversity | 3.16 | 0.857 | 27% |
| My co-workers are supportive of my neurodiversity | 3.15 | 0.756 | 23% |
| I see myself as a neurodivergent advocate or neurodiversity campaigner | 3.14 | 1.097 | 36% |
| My organization is supportive of my neurodiversity | 3.06 | 0.837 | 23% |
| I don't feel that I can talk about my neurodiversity at work | 3.02 | 1.114 | 32% |
| Many people at work know that I am neurodiverse | 2.60 | 1.058 | 18% |
| I would never let anyone at work know about my neurodiversity | 2.57 | 1.054 | 16% |
| Sometimes I feel as if I'm the token neurodiverse person at work | 2.26 | 1.012 | 8% |

These results present a mixed picture. Over half of respondents agreed or strongly agreed that their neurodiversity allowed them to excel at aspects of their work, and that they had been able to adapt or 'craft' their job, and only 16% that they would never let anyone at work know about their neurodivergent condition. However, over half felt that their organization should do more to educate their employees about neurodiversity, almost half felt that their own neurodiversity had caused them problems at work and that they had to disguise or 'mask' their natural behavior at work, and only around a quarter felt that their manager, their co-workers and their organization were supportive of their neurodiversity.

Neurodivergent at work scales

These items, combined with some of the general workplace experience questions, were used to produce 4 scales measuring how supported people felt themselves to be, the extent to which they felt their neurodivergence helped them at work, the extent to which they felt they needed to hide or mask their neurodivergence, and the extent to which they themselves had a positive view of neurodivergence. The following table shows the four scales. All had acceptable or good internal consistency reliabilities.

| Scale | Example items | Mean | SD | Alpha | No. items |
|---|--|-------|-------|-------|-----------|
| Supportive of neurodivergence <i>My organization supports my neurodivergence</i> | My co-workers are supportive of my neurodiversity My manager is supportive of my neurodiversity My organization is supportive of my neurodiversity | 3.026 | 0.625 | 0.742 | 6 |
| Neurodivergent advantage <i>Neurodivergence helps me at work</i> | I have been able to adapt or ‘craft’ my job to make the best use of my neurodiversity I see my neurodiversity as my ‘superpower’ My neurodiversity allows me to excel at aspects of my work | 3.763 | 0.580 | 0.734 | 7 |
| Masking <i>I mask or hide my neurodivergence at work</i> | I am able to be my authentic self at work* I don’t feel that I can talk about my neurodiversity at work I have to disguise or ‘mask’ my natural behavior at work | 3.025 | 0.757 | 0.753 | 6 |
| Positive advocacy <i>I have a positive view of neurodivergence and may be a neurodiversity advocate</i> | I feel my organization should do more to educate our employees about neurodiversity I see myself as a neurodivergent advocate or neurodiversity campaigner Organizations that do not pay attention to neurodiversity are missing out | 3.653 | 0.593 | 0.702 | 7 |

*Scored negatively

Respondents tended to agree that their neurodivergence helped them at work and that they themselves had a positive view of neurodivergence, but on average neither agreed nor disagreed that their organization was supportive or that they had to mask or hide their neurodivergence at work.

Relationship with workplace scales

Scores on the neurodivergent scales were correlated with scores on the general workplace scales.

| | Supportive of neurodivergence | Neurodivergent advantage | Masking | Positive advocacy |
|-------------------------------------|-------------------------------|--------------------------|---------|---------------------|
| Inclusion | .588** | -.013 ^{NS} | -.587** | -.119** |
| Misunderstood | -.397** | .136** | .578** | .234** |
| Workplace stress | -.291** | -.061 ^{NS} | .411** | .101** |
| Positive self-image | .026 ^{NS} | .765** | -.133** | .270** |
| Organizational attitude | -.209** | .223** | .153** | .775** |
| Neurodiversity attitude | .689** | -.124** | -.748** | -.233** |
| Job satisfaction | .316** | .104** | -.383** | -.030 ^{NS} |
| Significant periods of unemployment | -.133** | .012 ^{NS} | .169** | .033 ^{NS} |

N=840 to 915. NS: Not significant. **: significant at the 0.01 level.

There are several very high correlations here, reflecting the fact that several of these scales have items in common. However, the job satisfaction score was independent of these scales. Those who felt their organization was supportive of neurodivergence had significantly higher levels of job satisfaction, while those who felt that they had to hide or mask their neurodivergence had significantly lower levels. Those who felt that their neurodivergence conferred some advantage had somewhat higher levels of job satisfaction.

Relationship with forms of neurodivergence

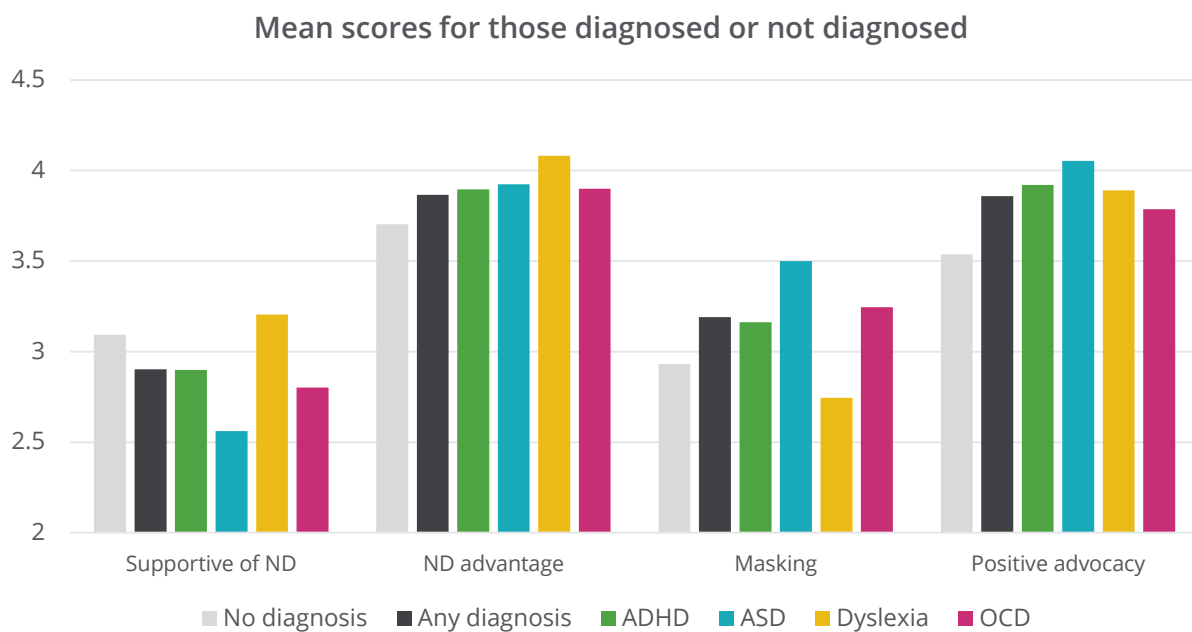
Scores on each scale were correlated with the 1-5 self-reported scores on ADHD, ASD, OCD, and dyslexia, and with the number of conditions diagnosed and the number of conditions that an individual had been diagnosed with or believed they had.

| | Supportive of neurodivergence | Neurodivergent advantage | Masking | Positive advocacy |
|---|-------------------------------|--------------------------|--------------------|--------------------|
| ADHD | -.112** | .165** | .170** | .310** |
| ASD | -.261** | .130** | .336** | .270** |
| OCD | -.049 ^{NS} | .094** | .079* | .061 ^{NS} |
| Dyslexia | -.012 ^{NS} | .074* | .053 ^{NS} | .034 ^{NS} |
| Number of conditions diagnosed | -.151** | .153** | .135** | .272** |
| N. conditions diagnosed or believed to have | -.172** | .191** | .172** | .307** |

N=898 to 908. NS: Not significant. *: significant at the 0.05 level **: significant at the 0.01 level.

The more positive an individual was that they had ADHD or ASD, and the more conditions they had been diagnosed with or believed that they had, then the less supportive they felt their organization was, and the more likely they were to think that being neurodivergent was an advantage, to hide or mask their behavior, and to be an advocate for neurodivergence. The relationship with masking was especially strong for those with ASD. More detailed findings on each form of neurodivergence are given later in this report.

To investigate these relationships further, the average (mean) scores of those not diagnosed with any condition were compared with the scores of those diagnosed with any condition, and with specific conditions where more than 25 people in the sample had been diagnosed.

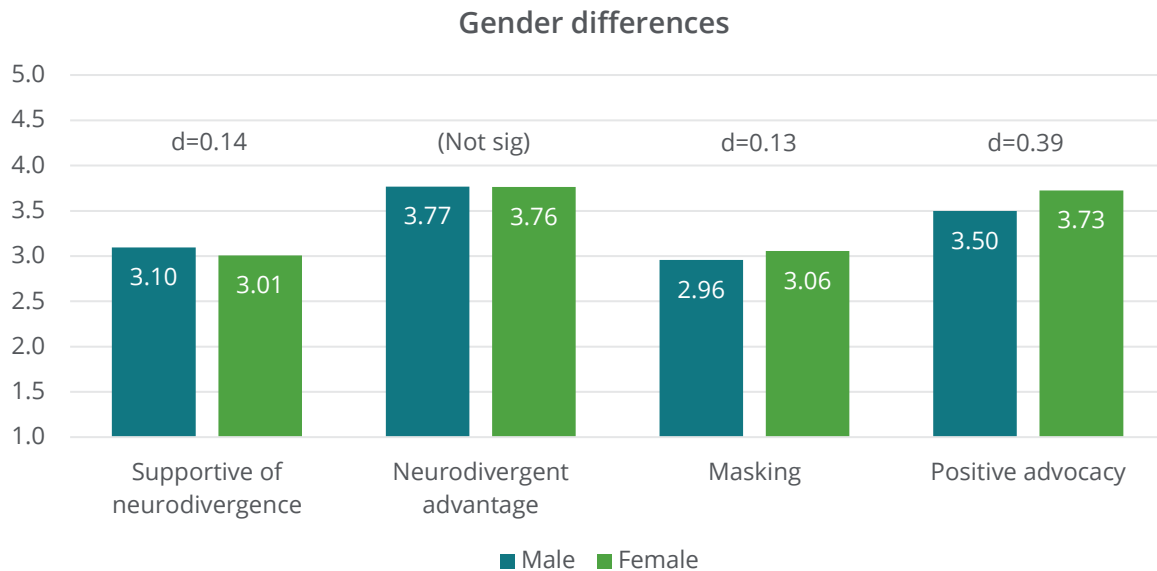


These results show that:

- Those diagnosed with dyslexia were more likely than any other group, including those not diagnosed with any condition, to see their organization as supportive of neurodivergence, and were the least likely to mask or hide their behavior. They were also the most likely group to see their neurodivergence as an advantage.
- Except for dyslexia, those diagnosed with any condition were less likely than those not diagnosed to see their organization as supportive of their neurodivergence and more likely to mask their behavior. Including those diagnosed with dyslexia, they were more likely than those undiagnosed to see their neurodivergence as an advantage and to be a neurodiversity advocate.
- Those diagnosed with ASD were the most likely to mask or hide their behavior, the most likely to be a neurodiversity advocate, and the least likely to see their organization as supportive.

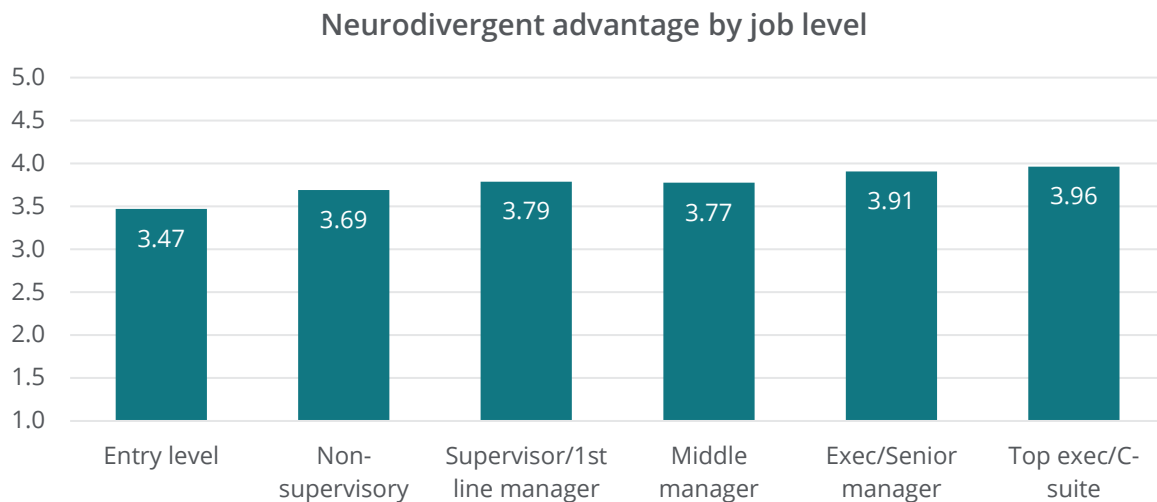
Relationship with demographic data

Women were more likely than men to have a positive view of their neurodivergence or to be an advocate, were very slightly more likely to mask or hide their behavior, and very slightly less likely to see their organization as supportive. There was no significant difference in terms of seeing their neurodivergence as an advantage or superpower.



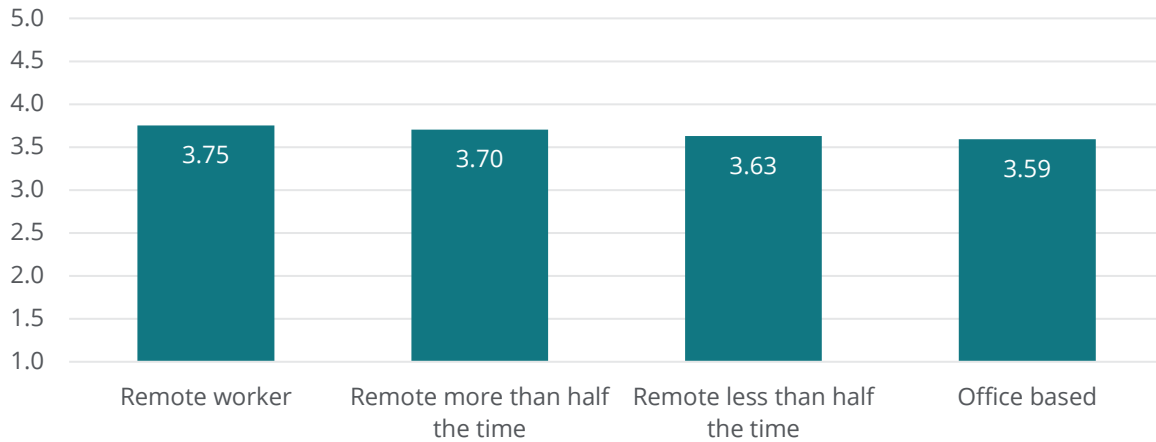
Younger respondents were somewhat more likely to mask or hide their neurodivergence at work (correlation of -0.140 with age, significant at the 1% level).

More senior people were more likely to see their neurodivergent condition as an advantage at work.



Remote and hybrid workers were more likely to have a positive view of neurodivergence and to be a neurodiversity advocate.

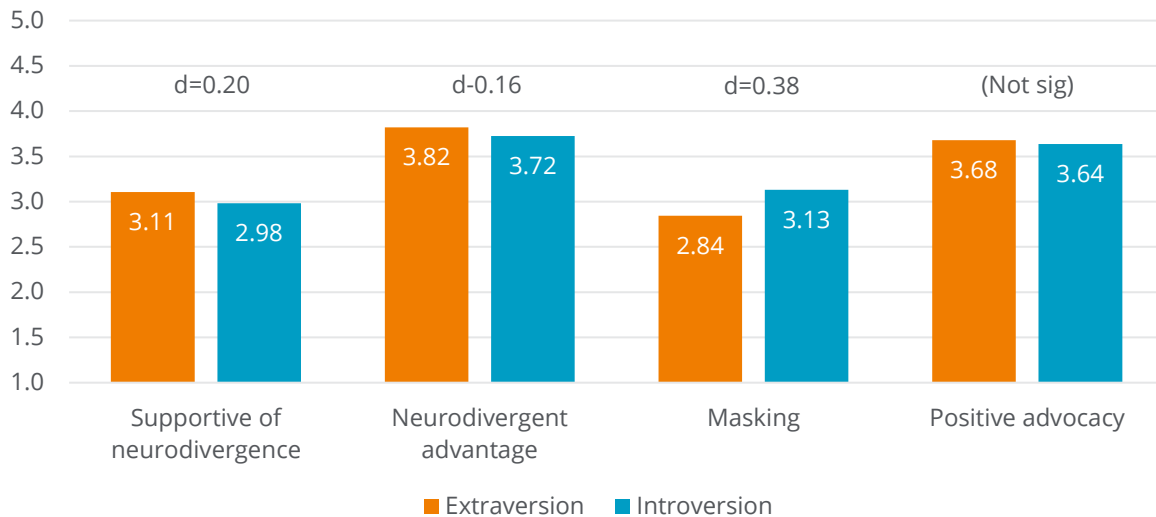
Positive advocacy by work location



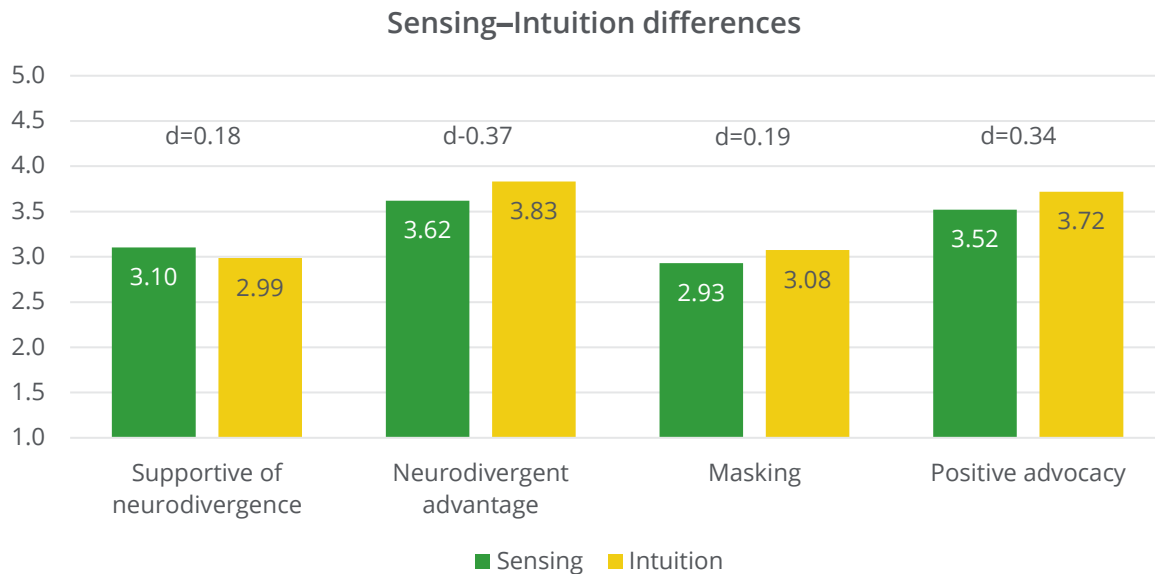
Relationship with personality type

Based on independent-samples t-tests, there were some significant differences between those with Extraversion and those with Introversion preferences, and between those with Sensing and those with Intuition preferences. However, effect sizes were generally small.

Extraversion–Introversion differences



Those with an Introversion preference were more likely to mask or hide their neurodivergent condition. Those with an Extraversion preference were somewhat more likely to see their organization as being supportive of their neurodivergence and to see their neurodivergent condition as an advantage at work.



Respondents with a Sensing preference were somewhat more likely to see their organization as supportive of their neurodivergence. Those with an Intuition preference were more likely to see their condition as an advantage and to have a positive view of their neurodivergence or be an advocate, but were also somewhat more likely to mask or hide their behavior.

In terms of whole type:

- There was no significant difference in terms of how supportive people felt their organization was of their neurodivergence.
- Those with ENTJ or ENTP preferences were the most likely to see advantages to their neurodivergent condition at work. Those with ISFP preferences were the least likely to.
- Those with INFJ or INTJ preference were the most likely to mask or hide their behavior, those with ENTP preferences the least likely.
- Those with ENFJ or ENFP preferences were the most likely to have a positive view of their neurodivergence or be an advocate. Those with ISTP or ESTP preferences were the least likely.

Summary

- Survey respondents who believed themselves to be neurodivergent were asked about their experience of their neurodivergence at work. Over half agreed or strongly agreed that their neurodiversity allowed them to excel at aspects of their work, and that they had been able to adapt or ‘craft’ their job. Only 16% agreed or strongly agreed that they would never let anyone at work know about their neurodivergent condition. However, over half felt that their organization should do more to educate their employees about neurodiversity, almost half felt that their own neurodiversity had caused them problems at work and that they had to disguise or ‘mask’ their natural behavior at work, and only around a quarter felt that their manager, their co-workers, and their organization were supportive of their neurodiversity.
- Respondents’ answers were used to develop four scales. They described the extent to which:
 - They felt their organization supported their neurodivergence.

- Their neurodivergence helped them at work.
 - They masked or hid their neurodivergence at work.
 - They had a positive view of neurodivergence and may be a neurodiversity advocate.
- Respondents tended to agree that their neurodivergence helped them at work and that they themselves had a positive view of neurodivergence, but on average neither agreed nor disagreed that their organization was supportive or that they had to mask or hide their neurodivergence at work.
 - Those who felt their organization was supportive of neurodivergence had significantly higher levels of job satisfaction; those who felt that they had to hide or mask their neurodivergence had significantly lower levels. Those who felt that their neurodivergence conferred some advantage had somewhat higher levels of job satisfaction.
 - The more positive an individual was that they had ADHD or ASD, and the more conditions they had been diagnosed with or believed that they had, then the less supportive they felt their organization was, and the more likely they were to think that being neurodivergent was an advantage, to hide or mask their behavior, and to be an advocate for neurodivergence. The relationship with masking was especially strong for those with ASD.
 - Women were more likely than men to have a positive view of their neurodivergence or be an advocate, very slightly more likely to mask or hide their behavior, and very slightly less likely to see their organization as supportive.
 - Younger respondents were somewhat more likely to mask or hide their neurodivergence at work.
 - More senior people were more likely to see their neurodivergent condition as an advantage at work.
 - Remote and hybrid workers were more likely to have a positive view of neurodivergence and to be a neurodiversity advocate.
 - Those with an Introversion preference were more likely to mask or hide their neurodivergent condition. Those with an Extraversion preference were somewhat more likely to see their organization as being supportive of their neurodivergence and to see their neurodivergent condition as an advantage at work.
 - Respondents with a Sensing preference were somewhat more likely to see their organization as supportive of their neurodivergence. Those with an Intuition preference were more likely to see their condition as an advantage and to have a positive view of their neurodivergence or be an advocate but were also somewhat more likely to mask or hide their behavior.
 - In terms of whole type:
 - There was no significant difference in terms of how supportive people felt their organization was of their neurodivergence.
 - Those with ENTJ or ENTP preferences were the most likely to see advantages to their neurodivergent condition at work. Those with ISFP preferences were the least likely.
 - Those with INFJ or INTJ preference were the most likely to mask or hide their behavior. Those with ENTP preferences the least likely.
 - Those with ENFJ or ENFP preferences were the most likely to have a positive view of their neurodivergence or be an advocate. Those with ISTP or ESTP preferences were the least likely.

Characteristics of people with a neurodivergent diagnosis

Overview

There is a danger that people with a diagnosis of ADHD, ASD, OCD, dyslexia, or any other neurodivergent condition are seen as one cohesive group. This is not the case, and separate sections are given later in this report for ADHD, ASD, OCD, and dyslexia. However, some groups in our sample were too small to carry out meaningful analyses. For example, only 12 people reported that they had been diagnosed with dyscalculia, and only 11 with Tourette’s syndrome. As there may be some common elements to the workplace experiences of many neurodivergent people, this section of the report contrasts the responses of those diagnosed with **any** condition with the responses of those not diagnosed with any condition.

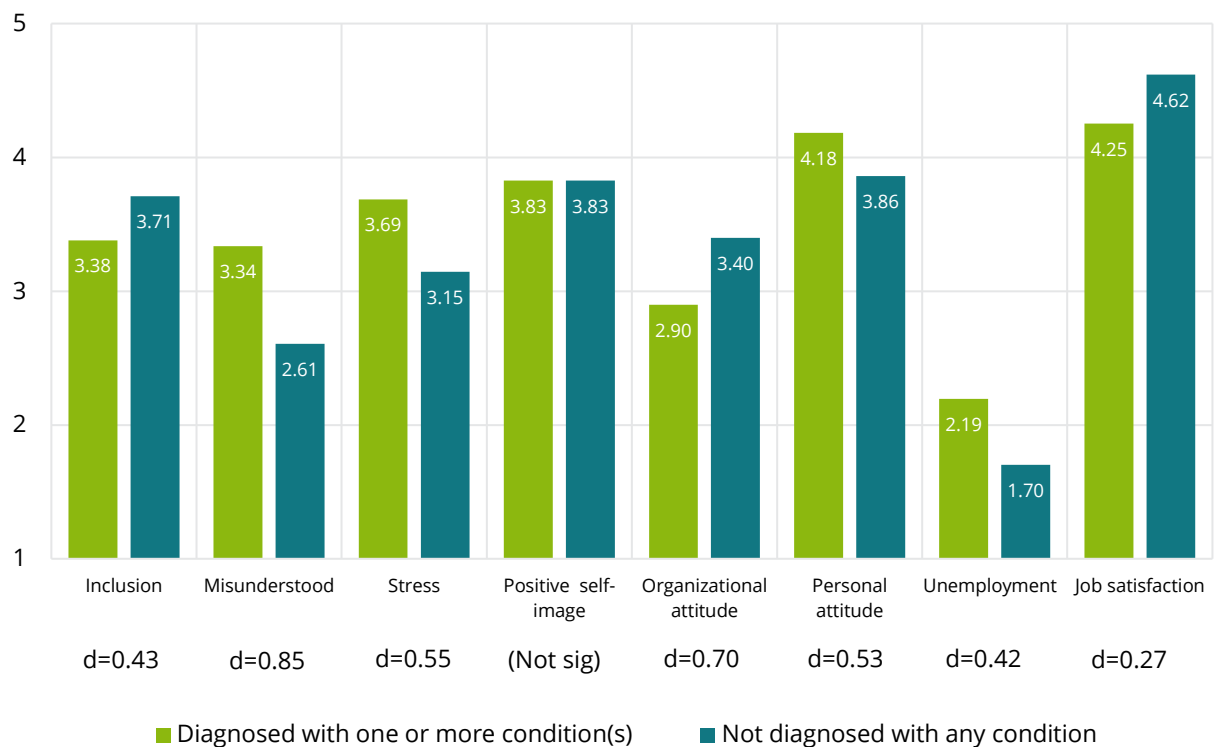
Incidence of neurodivergence

(Doyle, Neurodiversity at work: A biopsychosocial model and the impact on working adults, 2020) estimates that 15–20% of the global population is neurodivergent. In our sample, 349 people, 26% of the total, had been diagnosed with one or more conditions. 573 people, 42% of the total, had been diagnosed with or believed that they had one or more conditions.

How does a neurodivergent diagnosis relate to workplace experience and attitude?

Do people with a neurodivergent diagnosis in general feel more or less included, misunderstood, or stressed at work? An independent t-test was carried out on the mean score on each of the workplace variables between those who were or were not diagnosed with any condition.

Difference between those who were and were not diagnosed with any condition



Compared with others, those diagnosed felt much more misunderstood and more stressed at work. They felt less included, had a much less positive view of their organization’s attitude to neurodivergence, and felt that more attention should be paid to neurodivergence. They were more likely to have experienced periods of unemployment and on average had somewhat lower levels of job satisfaction.

The ten individual questions showing the greatest differences between those with and those without a diagnosis were as follows (percentages refer to those agreeing or strongly agreeing with each statement).

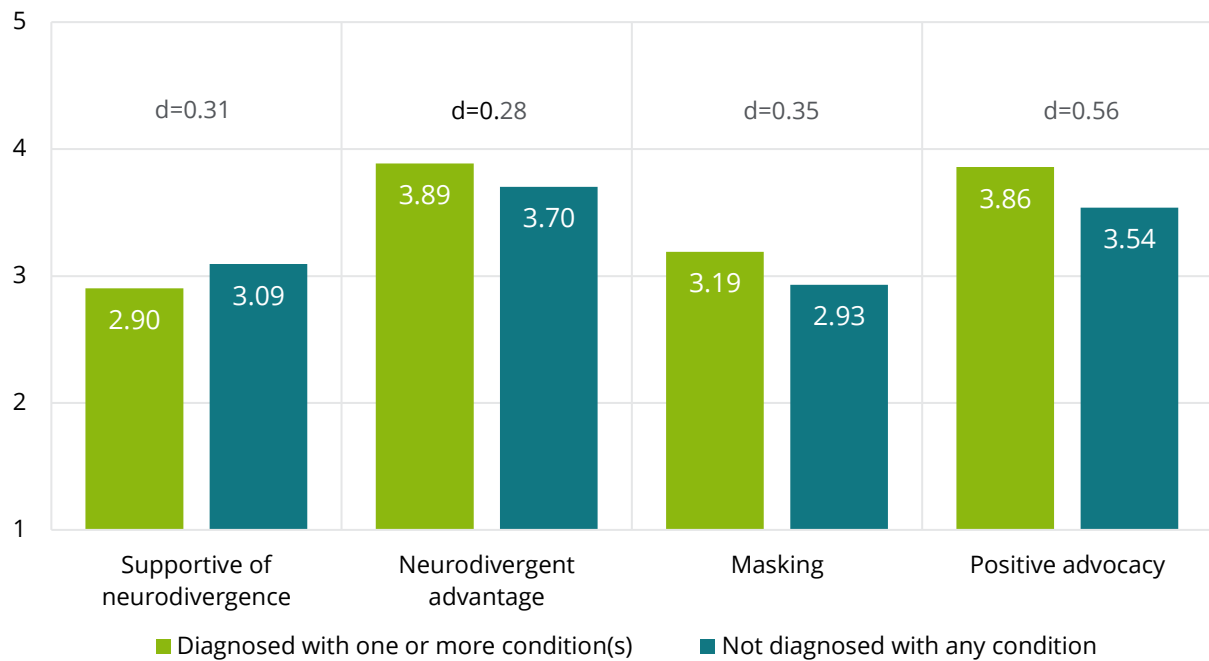
| Question | % of those diagnosed | % of those not diagnosed | Difference |
|--|----------------------|--------------------------|------------|
| The way in which I think and act has caused me problems at work | 53% | 24% | 29% |
| I find that people at work often misread my behaviors or actions | 54% | 28% | 26% |
| Sometimes I don’t understand my own behavior | 51% | 27% | 24% |
| I have changed my behavior to fit in at work | 67% | 44% | 23% |
| People at work don’t really understand me | 46% | 23% | 23% |
| My job makes me stressed | 64% | 43% | 21% |
| I find work stressful | 64% | 43% | 21% |
| I feel accepted by my co-workers | 57% | 78% | -21% |
| I am able to be my authentic self at work | 47% | 70% | -23% |
| I feel comfortable and at home in my organization | 49% | 72% | -23% |

These results illustrate some of the issues that neurodivergent people can face in the workplace and demonstrate how greater self-awareness may be useful.

How a neurodivergent diagnosis relates to the neurodivergent experience scales

The questions comprising the neurodivergent scales were answered by respondents who agreed with the statement that “If you feel that you are neurodiverse or neurodivergent, and that questions about the workplace are relevant to you, please answer the following questions”. 893 people went on to answer the questions, 66% of respondents. This included many people who did not have a formal neurodivergent diagnosis. The responses of those who were and were not diagnosed can therefore be compared. As with the workplace experience scales, an independent t-test was carried out on the mean score on each of the scales.

Differences between those were and were not diagnosed with any condition



Compared with others, those diagnosed were more likely to have a positive view of neurodivergence or see themselves as a neurodivergent advocate, and somewhat more likely to feel that their condition conferred an advantage and to mask or hide their behavior. They were less likely to see their organization as supportive of their condition. Effect sizes (Cohen’s d) were small (0.28) to medium (0.56).

Regarding the percentage of people agreeing or strongly agreeing with individual statements, five questions show a difference of 20 points or more between those diagnosed and those not diagnosed.

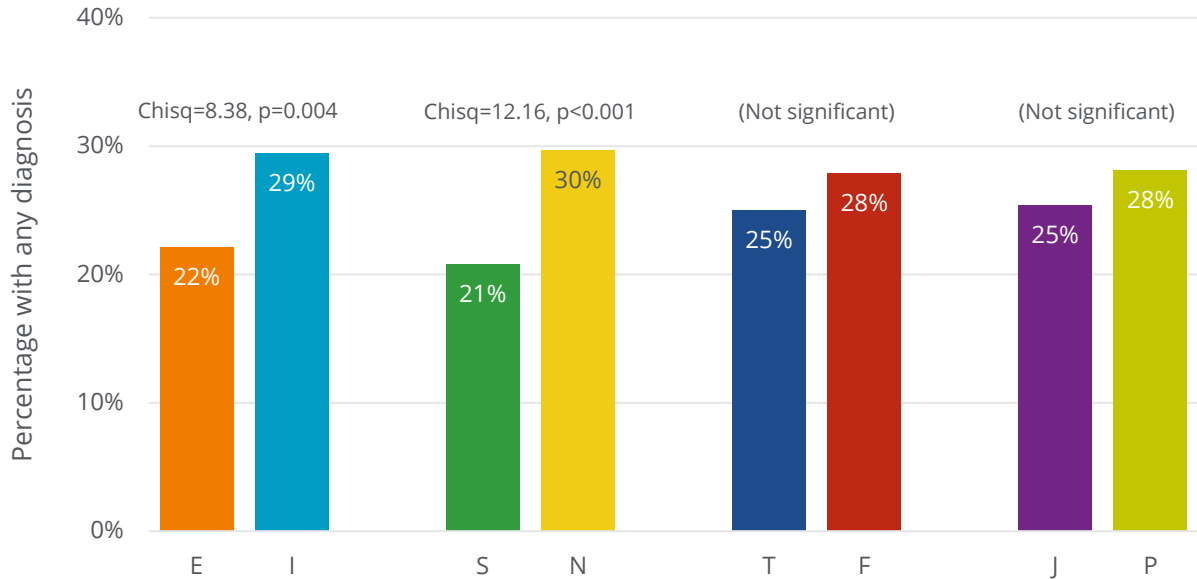
| Question | % of those diagnosed | % of those not diagnosed | Difference |
|--|----------------------|--------------------------|------------|
| My own neurodiversity has caused me problems at work | 70% | 34% | 36% |
| My neurodiversity allows me to excel at aspects of my work | 80% | 54% | 26% |
| I have to disguise or ‘mask’ my natural behavior at work | 63% | 37% | 26% |
| Many people at work know that I am neurodiverse | 32% | 9% | 23% |
| I don’t feel that I can talk about my neurodiversity at work | 45% | 25% | 20% |

Those diagnosed were more likely to say that their neurodiversity had caused them problems, but also more likely to see it as allowing them to excel.

Personality type and a neurodivergent diagnosis

The personality characteristics of different neurodivergent conditions would be expected to differ; there would not be a single neurodivergent ‘type’. Nevertheless, the relationship between personality type and having or not having a diagnosis was explored using chi-square analysis.

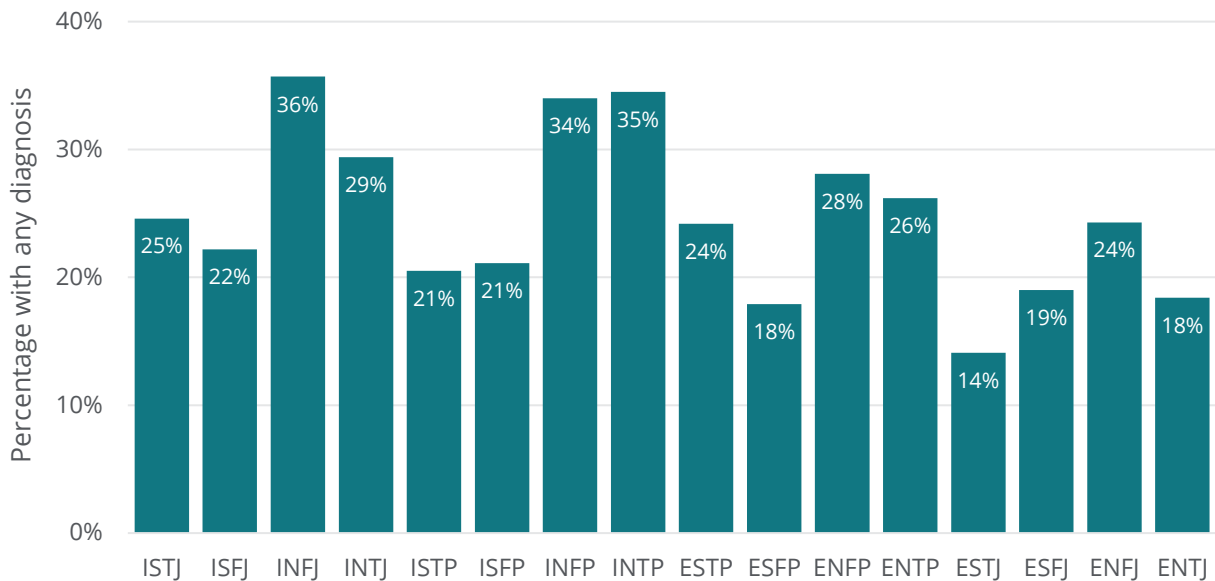
Preference pairs and neurodivergent diagnosis



Those with an Introversion or an Intuition preference were more likely to have a neurodivergent diagnosis than those with an Extraversion or a Sensing preference. There was no significant relationship with Thinking–Feeling or Judging–Perceiving.

In terms of whole type, those with preferences for INFJ, INTP, or INFP were the most likely to have received a diagnosis. Those with preferences for ESTJ were the least likely.

Whole type and neurodivergent diagnosis

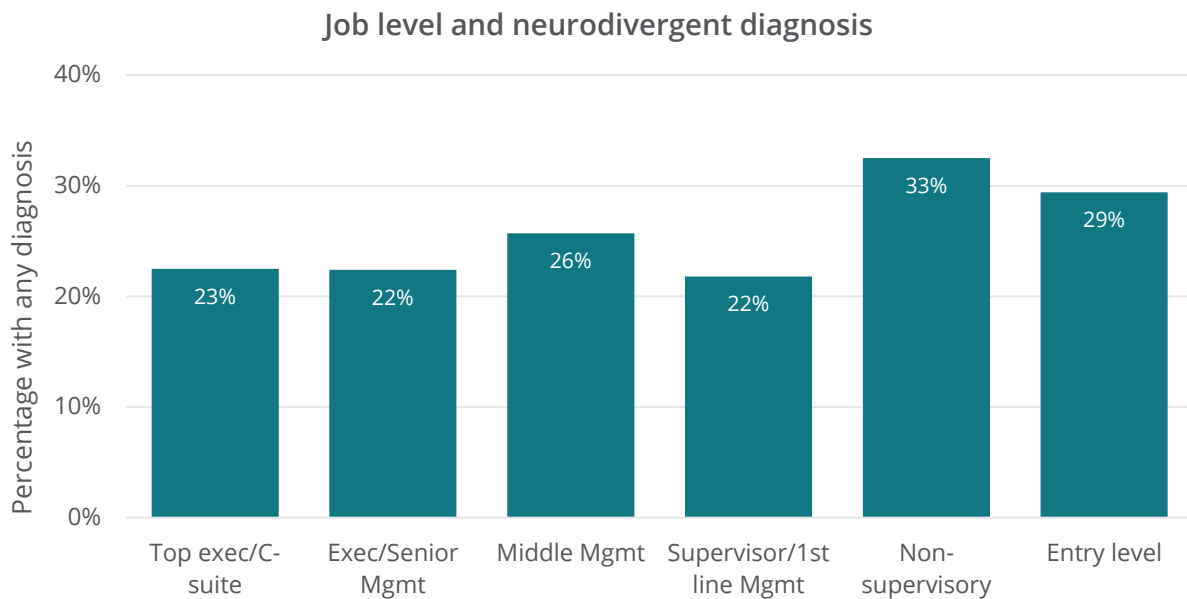


How a neurodivergent diagnosis relates to demographic factors

Women were somewhat more likely than men to have had a diagnosis (27% compared with 23%). Over half (52%) of those who preferred to self-describe had received a diagnosis, though this finding should be treated with caution as the absolute numbers are small (11 people with and 10 people without a diagnosis).

The mean age for those with a diagnosis was 43.8 years and for those without was 48.1 years, which is a statistically significant difference with a relatively small effect size (Cohen's $d=0.36$).

Managers were less likely to have received a diagnosis than non-managers.



There was no significant relationship with age, degree of remote working, or organization size.

Summary

- 349 people, 26% of the total, had been diagnosed with one or more conditions. 573 people, 42% of the total, had been diagnosed with or believed that they had one or more conditions.
- Those diagnosed:
 - Felt much more misunderstood and more stressed at work. They felt less included at work, had a less positive view of their organization's attitude to neurodivergence, and felt that more attention should be paid to neurodivergence. They were more likely to have experienced periods of unemployment and on average had somewhat lower levels of job satisfaction.
 - Were more likely to have a positive view of neurodivergence or see themselves as a neurodivergent advocate, and somewhat more likely to feel that their condition conferred an advantage and to mask or hide their behavior. They were less likely to see their organization as supportive of their condition.
 - Were more likely to have a personality preference for Introversive or Intuitive.
 - Were somewhat more likely to be women than men, and to be younger.
 - Were less likely to be managers or executives.

Attention deficit hyperactivity disorder (ADHD)

ADHD at work: an overview

People with ADHD can seem restless, may have trouble with concentration and attention, and/or may act on impulse more than other people. In the workplace, they can have problems with organization and time management, following instructions, or focusing on and completing tasks. They may seem restless, impatient, or impulsive, or take unnecessary risks. Some people with ADHD are more inattentive (not paying attention to detail, not listening or paying attention, getting distracted, making mistakes). Some are more hyperactive or impulsive (fidgeting, never staying still, talking too much, interrupting, not staying seated). Many show a combination of the two.

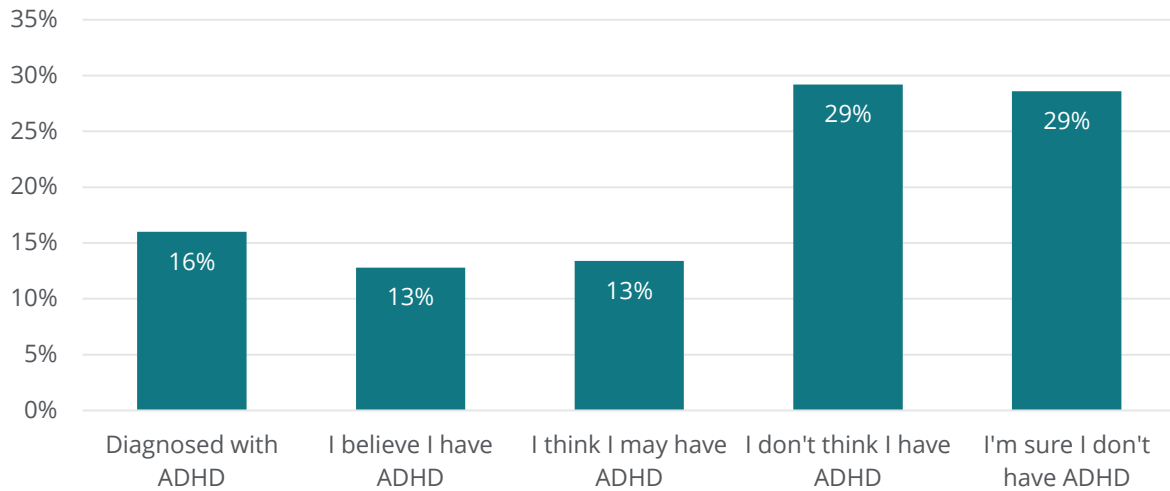
Some research suggests that the behaviors associated with ADHD may have been advantageous in the distant past, for example in hunter-gatherer societies, but may be less so now (Estellar-Cucala, et al., 2020). ADHD may certainly seem a poor fit for some more traditional work environments that stress attention to detail, repetitive tasks, rule-following, and strict management of time and resources. There is, however, evidence that people with ADHD can bring many benefits to the workplace:

- Creativity: research shows that people with ADHD report more real-world creative achievements and can, when sufficiently motivated, generate more original ideas than others (Boot, Nevicka, & Baas, 2017).
- High energy: this is one of the defining characteristics of ADHD.
- Hyperfocus: when they are doing a job that they enjoy and find interesting, many can focus on a task for hour after hour, avoiding distractions and producing high-quality and incisive results (Ashinoff & Abu-Akel, 2021).
- Impulsivity and spontaneity: though this can lead to taking unnecessary risks, it can also result in great successes.
- Resilience and courage: many individuals with ADHD have had to overcome barriers during their education and built resilience and developed courage as a result. Interviews with successful adults with ADHD showed resilience and courage to be key attributes (Sedgwick, Merwood, & Asherson, 2019).

Incidence of ADHD

It is estimated that in 2020, 6.76% of the global adult population had ADHD (Song, et al., 2021). In our sample 218 people, 16% of respondents, had been diagnosed with ADHD. A further 174 people had not been diagnosed with ADHD, but believed that they had the condition, meaning that 29% of respondents had or believed that they had ADHD.

Incidence of ADHD



The survey also included the six questions from the *Adult ADHD Self-Report Scale (ASRS-v1.1) Symptom Checklist* (Adler, Kessler, & Spencer). These were answered on a 5-point scale from 'never' to 'very often'. 1,272 respondents completed these questions. The percentage of respondents giving each answer for each question is shown below.

| Question | Never | Rarely | Sometimes | Often | Very often |
|--|-------|--------|-----------|-------|------------|
| How often do you have trouble wrapping up the final details of a project, once the challenging parts have been done? | 10% | 30% | 30% | 19% | 12% |
| How often do you have difficulty getting things in order when you have to do a task that requires organization? | 13% | 40% | 27% | 13% | 7% |
| How often do you have problems remembering appointments or obligations? | 13% | 40% | 27% | 12% | 8% |
| When you have a task that requires a lot of thought, how often do you avoid or delay getting started? | 5% | 20% | 33% | 26% | 16% |
| How often do you fidget or squirm with your hands or feet when you have to sit down for a long time? | 9% | 21% | 24% | 23% | 24% |
| How often do you feel overly active and compelled to do things, like you were driven by a motor? | 13% | 30% | 29% | 17% | 11% |

Where four or more scores fall into the red shaded boxes above then an individual “has symptoms highly consistent with ADHD in adults and further investigation is warranted”. 459 people, 36% of those who completed these questions, had four or more marks in the shaded boxes, meaning that over a third of respondents had behaviors consistent with a diagnosis of ADHD.

There was an overlap, though not a perfect correlation, between the ADHD checklist and self-reported incidence of ADHD. For example, 77% of those diagnosed with ADHD scored as positive on the checklist, but only 36% of those who scored positive on the checklist had been diagnosed with ADHD. 8% of those who were sure they did not have ADHD nevertheless displayed behaviors that would have resulted in an ADHD diagnosis. These results suggest that ADHD-related behaviors are more common than a formal diagnosis, even in a sample where an ADHD diagnosis is considerably more common than in the general population.

| Incidence of ADHD | | Checklist negative | Checklist positive |
|----------------------------|--------------------------|--------------------|--------------------|
| Diagnosed with ADHD | Percent within incidence | 23% | 77% |
| | Percent within checklist | 6% | 36% |
| I believe I have ADHD | Percent within incidence | 34% | 66% |
| | Percent within checklist | 7% | 24% |
| I think I may have ADHD | Percent within incidence | 51% | 49% |
| | Percent within checklist | 11% | 18% |
| I don't think I have ADHD | Percent within incidence | 80% | 20% |
| | Percent within checklist | 36% | 16% |
| I'm sure I don't have ADHD | Percent within incidence | 92% | 8% |
| | Percent within checklist | 41% | 7% |

How ADHD relates to workplace experience and attitude

Do people with ADHD feel more or less included, misunderstood, or stressed at work? The relationship between ADHD and workplace experience and attitude was investigated in three ways:

- Scores on the 1-5 scale (from diagnosed with ADHD to being sure that one doesn't have ADHD) were correlated with scores on the workplace variables.
- An independent t-test was carried out on the mean score on each of the workplace variables, to reveal differences between those diagnosed with ADHD and those sure that they did not have ADHD.
- An independent t-test was carried out on the mean score on each of the workplace variables between those positive on the ADHD checklist and those negative.

The results are shown below.

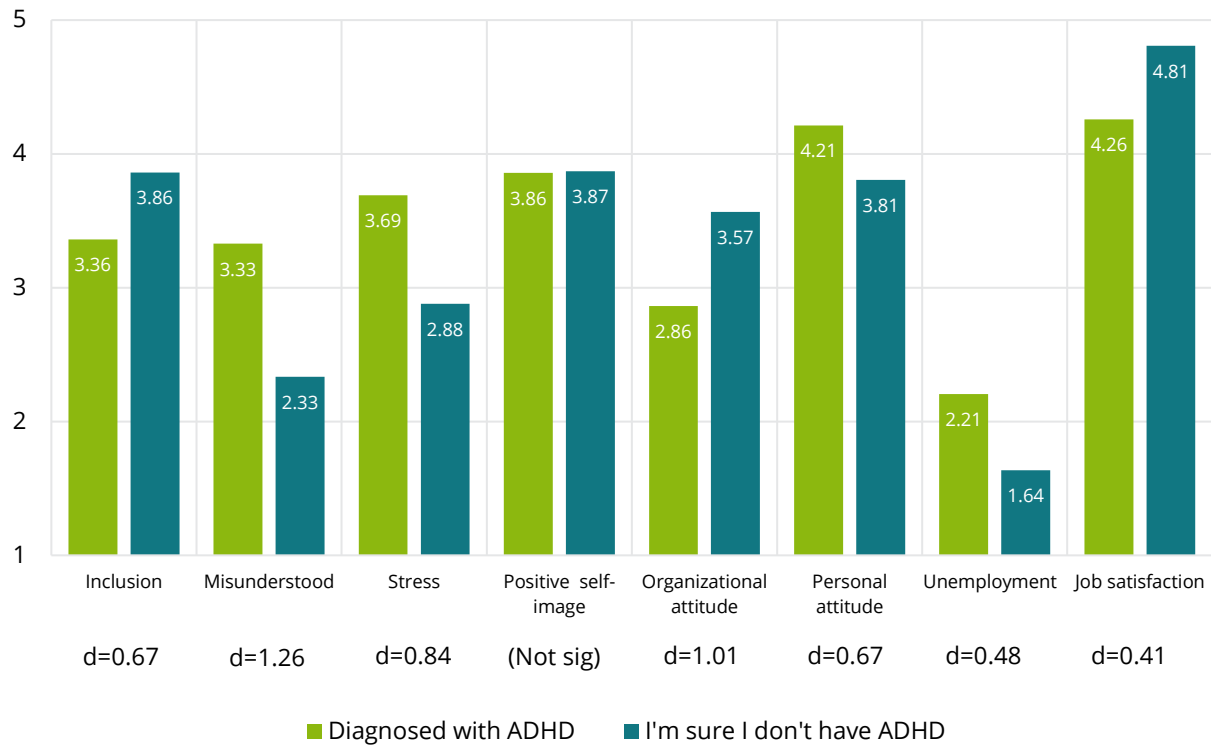
Correlation with ADHD score

| Inclusion | Misunderstood | Stress | Positive self image | Org attitude | ND attitude | Unemployment | Job satisfact. |
|-----------|---------------|--------|---------------------|--------------|-------------|--------------|----------------|
| -.225** | .398** | .284** | .003 ^{NS} | -.338** | .249** | .148** | -.147** |

NS: not significant. ** significant at the .001 level.

Those scoring towards the ADHD diagnosis end of the scale felt less included, more misunderstood, more stressed, had a less positive view of their organizations attitude to neurodivergence, felt that more attention should be paid to neurodiversity and divergence, were somewhat more likely to have had significant periods of unemployment, and tended to have lower levels of job satisfaction.

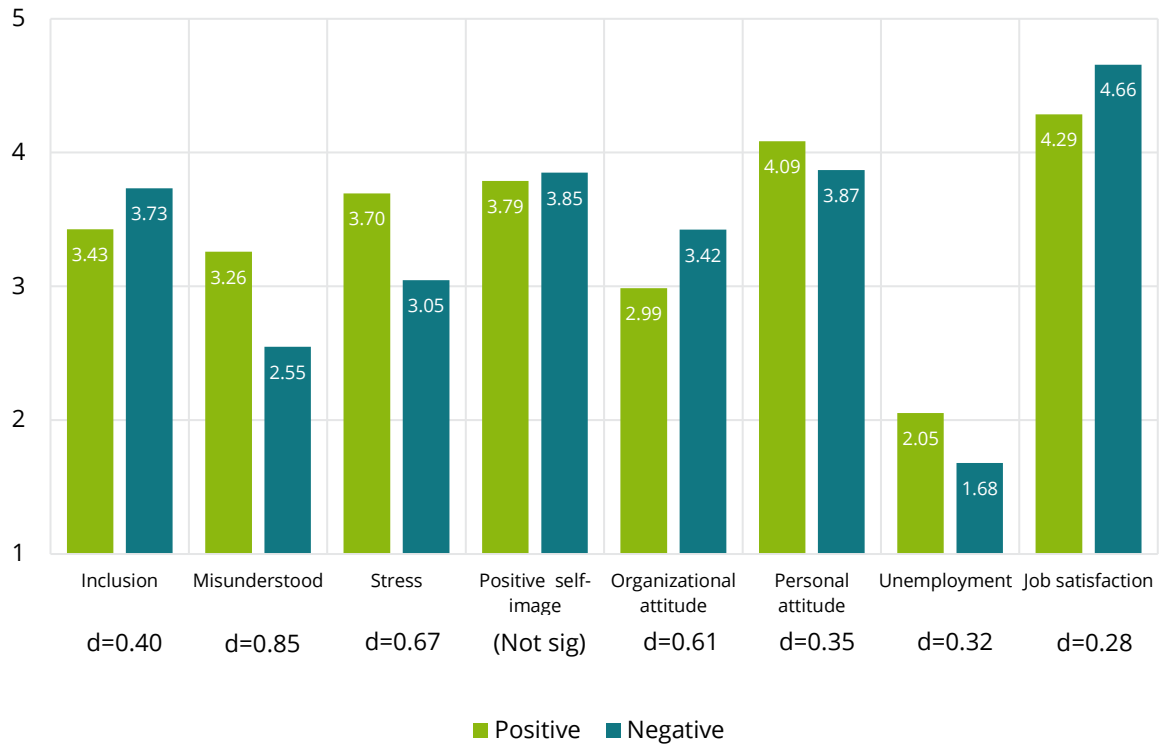
Difference between those diagnosed with ADHD and those sure they did not have ADHD



Compared with those sure that they did not have ADHD, those diagnosed felt less included and much more misunderstood and more stressed at work and were more likely to agree that they had had significant periods of unemployment. They had a much less positive view of their organizations attitude to neurodivergence, felt that more attention should be paid to neurodiversity and divergence, and had lower levels of job satisfaction. Effect sizes (Cohen’s d) ranged from small-medium (0.41) to very large (1.26).

Difference between those positive and those negative on the ADHD checklist

Very similar results were found when comparing the mean scores of those who were positive on the ADHD checklist with the mean scores of those negative on the checklist, though the effect sizes were somewhat smaller.



How ADHD relates to the neurodivergent experience scales

As with the workplace experience scales, the relationship between ADHD and the neurodivergent experience scales were investigated in three different ways. Scores on the ADHD scale were correlated with scores on the experience scales. Independent t-tests were carried out on the mean scores for each of the scales between those diagnosed with ADHD and those sure that they did not have ADHD, and between those positive on the ADHD checklist and those negative.

The results are shown below.

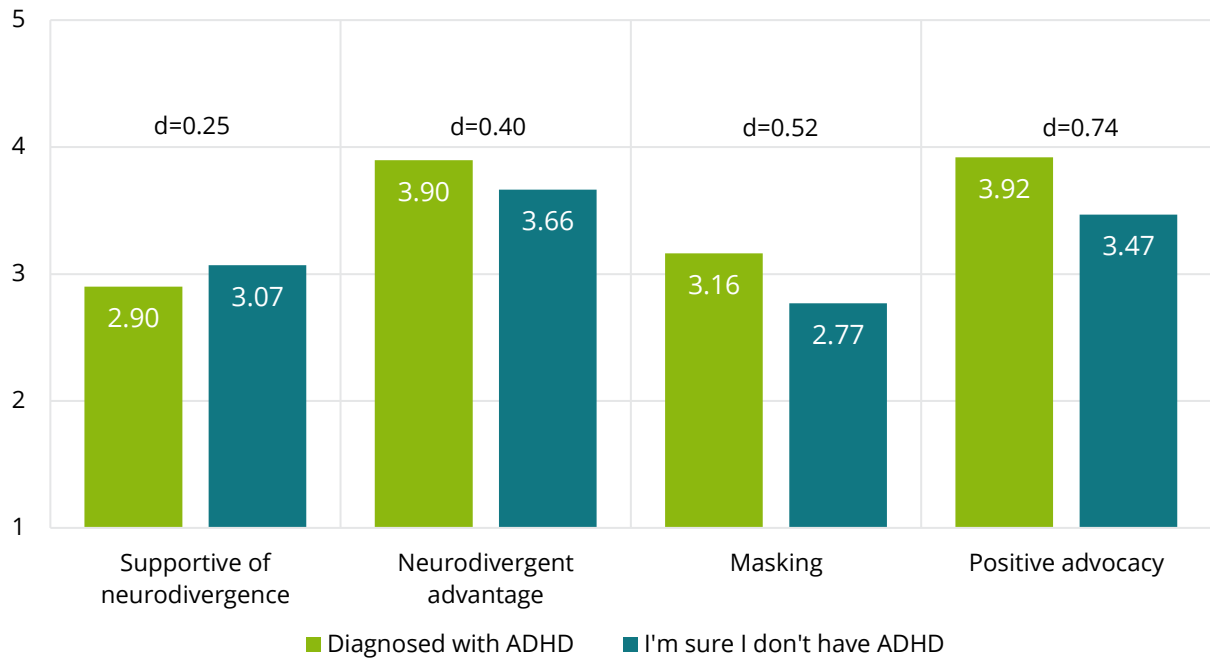
Correlation with ADHD score

| Supportive of neurodivergence | Neurodivergent advantage | Masking | Positive advocacy |
|-------------------------------|--------------------------|---------|-------------------|
| -.112** | .165** | .170** | .310** |

N= 898 to 914. **: significant at the 0.01 level

Those scoring towards the ADHD diagnosis end of the scale were more likely to have a positive view of neurodivergence or to be a neurodivergent advocate, and somewhat more likely to see their neurodivergence as helpful at work and to mask or hide their neurodivergence at work. They were somewhat less likely to see their organization as supportive of their neurodivergence.

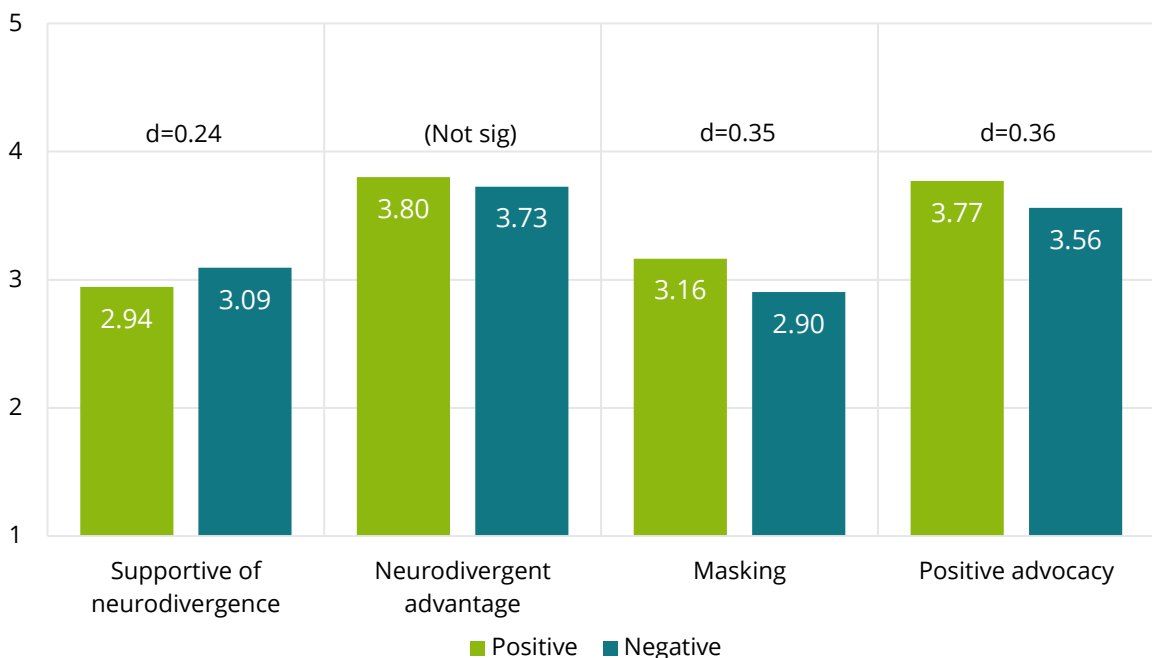
Differences between those diagnosed with ADHD and those sure they did not have ADHD



Compared with those sure that they did not have ADHD, those diagnosed were more likely to feel that their condition conferred an advantage, to mask or hide their behavior, and to have a positive view of neurodivergence or see themselves as a neurodivergent advocate. They were somewhat less likely to see their organization as supportive of their condition.

Differences between those positive and those negative on the ADHD checklist

Similar results were found when comparing the mean scores of those who were positive on the ADHD checklist with the mean scores of those negative on the checklist, though with smaller effect sizes.



Specific strengths of people with ADHD

The survey contained several items relating to areas that have been seen as specific strengths of people with ADHD, ASD, and other conditions. The table below shows the correlation between each of these and the ADHD diagnosis scale and the result of a t-test between those diagnosed with ADHD and those sure that they did not have ADHD

| Survey item | r | t sig | Cohen d |
|---|---------------------|-------|---------|
| My neurodiversity allows me to excel at aspects of my work | 0.306** | <.001 | .822 |
| I can do detailed work—but only if it interests me | 0.222** | <.001 | .621 |
| When I am doing something I really enjoy, I can focus on this for hours and hours | 0.221** | <.001 | .610 |
| I come up with lots of new ideas | 0.167** | <.001 | .486 |
| I am more creative than most people | 0.164** | <.001 | .458 |
| I have been able to adapt or ‘craft’ my job to make the best use of my neurodiversity | 0.141** | <.001 | .325 |
| I notice details that others miss | 0.126** | <.001 | .339 |
| I see my neurodiversity as my 'superpower' | 0.111** | .012 | .326 |
| If I need to, I can get a lot done in a short time | 0.053 ^{NS} | NS | - |
| I’m good in a crisis | 0.002 ^{NS} | NS | - |
| I am an expert in my field | -0.061* | NS | - |
| I usually follow the rules | -0.073** | .016 | .182 |
| I have a lot of energy | -0.108** | <.001 | .329 |
| I am more productive than most of my co-workers | -0.123** | <.001 | .416 |

Those diagnosed with ADHD were much more likely so say that their neurodiversity allowed them to excel as aspects of their work, to say that they can do detailed work if it interests them, and that they can focus on a task that they really enjoy for hours and hours. They were more likely to say that they come up with lots of new ideas, are more creative than most people, have been able to craft or adapt their job, notice details that others miss, and see their neurodiversity as their superpower. They were less likely to say that they have a lot of energy or that they are more productive than their co-workers.

Previous research into personality type and ADHD

In one study, Meisgeier, Poillion, & Haring, (1994) found that students with ADHD did not significantly differ in their type preferences from non-ADHD students. However, other research has suggested a link between ADHD and the Perceiving preference:

- Many of the behaviors listed on checklists of ADHD symptoms (see for example Adler, Kessler, & Spencer), seem to describe the Perceiving preference, and this has also been noted by other commentators (for example, Kise, 2007).
- Alt (1999) found that individuals with ADHD were more likely to have Intuition and Perceiving preferences than those without ADHD. Landau, (1997) found that ADD children have a tendency to prefer the Intuition function as their dominant function, and Cabak (1998) that ENTP, ENFP, and INFP were over-represented amongst adults with an ADHD diagnosis.
- Two studies by Gordon & Jackson (2019) also suggest that people with preferences for Extraverted Intuition are more likely to be diagnosed with, and show behaviors typical of, ADHD. Their research also drew a distinction between inattentive ADHD (Extraverted Intuition more likely; Extraverted Thinking, Introverted Sensing and, to some extent, Introverted Intuition and Extraverted Sensing less likely) and hyperactive/impulsive ADHD (Extraverted Intuition and, to some extent, Extraverted Sensing and Extraverted Feeling more likely; Introverted Sensing, Introverted Feeling and, to some extent, Introverted Thinking less likely). As the MBTI model looks at functions and at the interactive combination of preferences into whole type, these results suggest that this might be a more useful tool for people with ADHD than a trait measure looking at scores on separate, discrete scales. Their results also may explain why Amos et al., (2017) found that children diagnosed with ADHD were significantly more likely to have a Sensing preference.

Personality type and ADHD: results from this study

The relationship between ADHD and MBTI type was examined in several ways:

- A type table was produced for those diagnosed with ADHD.
- The relationship between type and the respondents' self-ratings on ADHD, using a scale from diagnosed with ADHD to being sure that one did not have this condition, was analyzed in three ways:
 - o Using a chi-square analysis, whether there were differences in score distributions by type preference pairs.
 - o Using independent t-tests, whether there were mean differences by type preference pairs.
 - o Using a one-way analysis of variance, whether there were mean differences by whole type and favorite process.
- The relationship between type and the ADHD checklist was analyzed.

Type table for those diagnosed with ADHD (N=211)

| MBTI Type | N | % | SSR |
|-------------|------|-------|----------|
| ISTJ | N=13 | 6.2% | SSR=0.39 |
| ISFJ | N=10 | 4.7% | SSR=0.56 |
| INFJ | N=27 | 12.8% | SSR=5.56 |
| INTJ | N=24 | 11.4% | SSR=4.37 |
| ISTP | N=8 | 3.8% | SSR=0.39 |
| ISFP | N=6 | 2.8% | SSR=0.43 |
| INFP | N=27 | 12.8% | SSR=2.03 |
| INTP | N=16 | 7.6% | SSR=1.58 |
| ESTP | N=8 | 3.8% | SSR=0.62 |
| ESFP | N=2 | 0.9% | SSR=0.16 |
| ENFP | N=22 | 10.4% | SSR=1.27 |
| ENTP | N=12 | 5.7% | SSR=1.32 |
| ESTJ | N=7 | 3.3% | SSR=0.37 |
| ESFJ | N=6 | 2.8% | SSR=0.50 |
| ENFJ | N=14 | 6.6% | SSR=3.02 |
| ENTJ | N=9 | 4.3% | SSR=2.37 |

| Type | N | % |
|------|-----|-------|
| E | 80 | 37.9% |
| I | 131 | 62.1% |
| S | 60 | 28.4% |
| N | 151 | 71.6% |
| T | 97 | 46.0% |
| F | 114 | 54.0% |
| J | 110 | 52.1% |
| P | 101 | 47.9% |

Intuition and, to some extent, Introversion were over-represented in comparison to the general population. INFJ and INTJ were the most-over-represented individual types. The most common types were INFJ and INFP; together these represented a quarter of those diagnosed with ADHD. ESFP was the least common type. It is important to note, however, that every type was represented in the group.

Among those who believed they had ADHD but had not been diagnosed, INFJ was the most common type (13.2%), followed by INFP (11.4%), and INTJ (10.8%). ESTP and ESFJ were the least common.

Comparing those diagnosed with ADHD with others within the sample, then preferences for INFP were significantly over-represented and preferences for ISTJ under-represented. Comparing those who were sure that they did not have ADHD with others within the sample, then preferences for ISTJ and ENTJ were significantly over-represented and preferences for INFJ, INFP, and INTP under-represented.

Previous research had suggested that those with Extraverted Intuition as their favorite process would be the most likely to have an ADHD diagnosis. This was not supported by these results. 19% of those with dominant Extraverted Intuition (ENTP, ENFP) self-reported an ADHD diagnosis, compared to 20% of those with dominant Introverted Thinking (ISTP, INTP) and 23% of those with dominant Introverted Feeling (ISFP, INFP). All of these have Perceiving preferences, however.

Relationship of type to ADHD self-rating

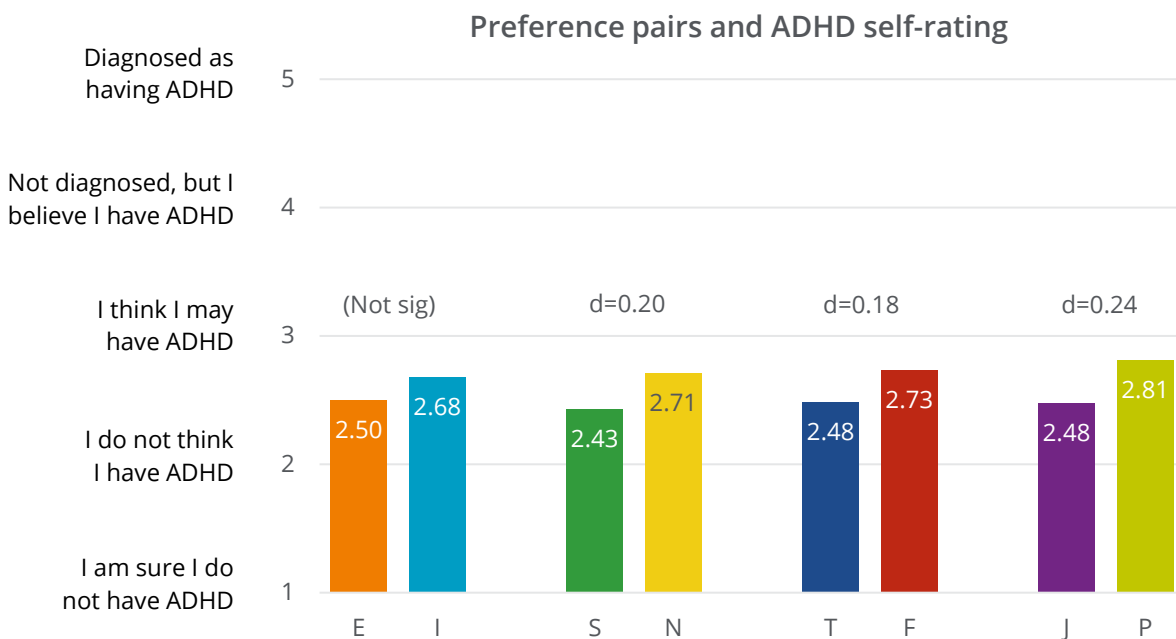
A chi-square analysis showed significant differences by S-N, T-F and J-P, but not E-I:

| ADHD level | S | N | T | F | J | P |
|--|---------------|-----|---------------|-----|----------------|-----|
| Diagnosed as having ADHD | 28% | 72% | 46% | 54% | 52% | 48% |
| Not diagnosed, but I believe I have ADHD | 37% | 63% | 44% | 56% | 53% | 47% |
| I think I may have ADHD | 28% | 72% | 46% | 54% | 60% | 40% |
| I do not think I have ADHD | 41% | 59% | 54% | 46% | 65% | 35% |
| I am sure I do not have ADHD | 41% | 59% | 56% | 44% | 66% | 34% |
| Chi-square value and significance | 17.84, p=.001 | | 12.28, p=.015 | | 17.85, p=-.001 | |

The results show that:

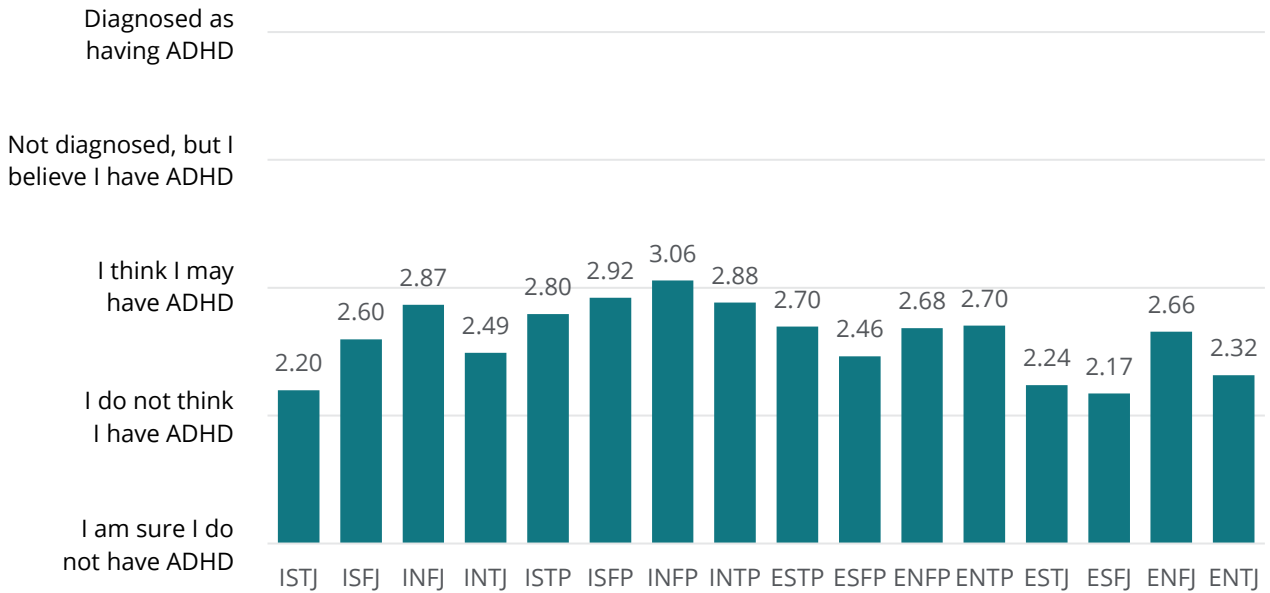
- Those diagnosed with, or who believed or thought they had ADHD, were more likely to have preferences for Intuition and for Feeling than those who did not think or who were sure they did not have the condition.
- Those diagnosed with or who believed they had ADHD were more likely to have preferences for Perceiving than those who thought they may have the condition, who in turn were more likely to have a Perceiving preference than those who did not think or who were sure they did not have the condition.
- The T-F effect was smaller than that for S-N or J-P.

Similar results were seen when the mean self-ratings for each preference pair were analyzed. Those with Intuition, Feeling, and Perceiving preferences had, on average, a higher 'score' than those with Sensing, Thinking, or Judging preferences.



A one-way analysis of variance showed a significant effect of whole type.

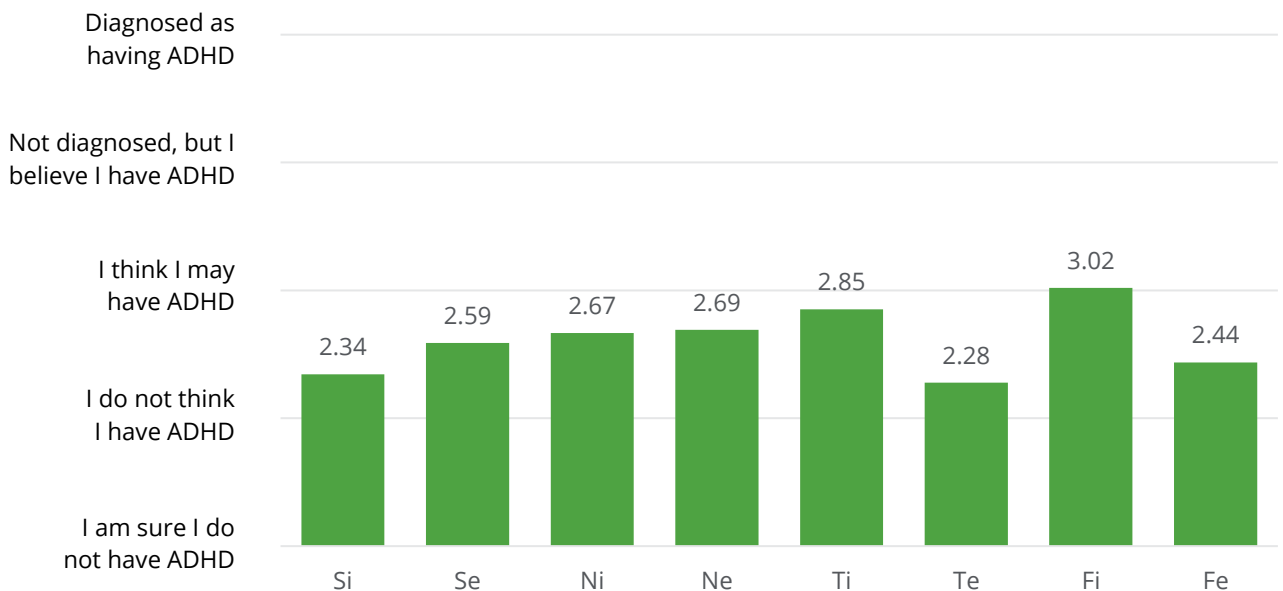
Mean ADHD self-rating by type



ESFJ, ISTJ, and ESTJ have the lowest score. INFP has the highest, followed by ISFP, INTP, and INFJ.

In terms of favorite process, Extraverted Thinking had the lowest score and Introverted Feeling the highest.

Mean ADHD self-rating by favorite process



23% of those with Introverted Feeling as their favorite process had been diagnosed with ADHD, 20% of those with Introverted Thinking, and 19% of those with Extraverted Intuition. Only 11% of those with Extraverted Thinking had been diagnosed.

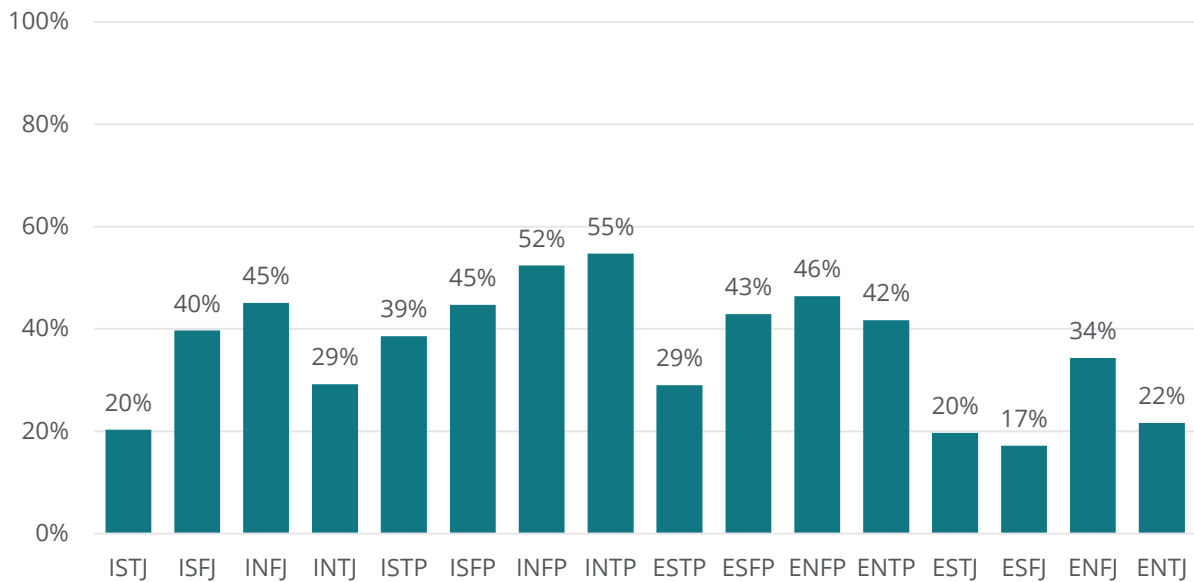
Relationship of type to the ADHD checklist

A chi-square analysis showed significant differences by E-I, S-N, T-F and J-P. However, the E-I differences were small.

| ADHD checklist | E | I | S | N | T | F | J | P |
|--------------------------|--------------|-----|----------------|-----|----------------|-----|----------------|-----|
| Checklist positive | 36% | 64% | 29% | 71% | 43% | 57% | 50% | 50% |
| Checklist negative | 42% | 58% | 41% | 59% | 56% | 44% | 67% | 33% |
| Chi square value and sig | 5.26, p=.022 | | 19.53, p <.001 | | 19.13, p <.001 | | 35.91, p <.001 | |

The results show that those who the ADHD checklist identified as potentially having ADHD were very much more likely to have preferences for Perceiving than for Judging, more likely to have preferences for Intuition and Feeling than for Sensing or Thinking, and somewhat more likely to have preferences for Introversion than for Extraversion.

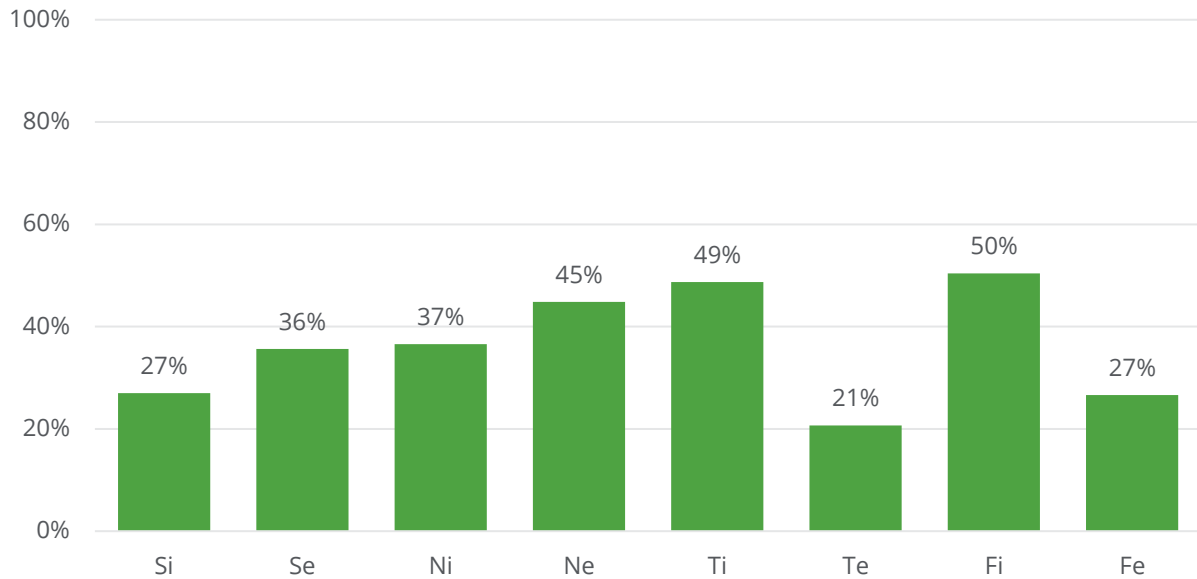
Percentage of each type positive on checklist



A chi-square analysis showed a significant relationship between type and the ADHD checklist. The types most likely to be flagged by the checklist as possibly having ADHD were INTP and INFP. Over half of respondents with these type preferences scored positive. Least likely were ESFJ, ESTJ, ISTJ, and ENTJ.

A significant relationship was also shown between favorite process and the checklist. 50% of those with Introverted Feeling, 49% of those with Introverted Thinking, and 45% of those with Extraverted Intuition as their favorite process were flagged by the checklist, but only 21% of those with Extraverted Thinking.

Percentage of each favorite process positive on checklist



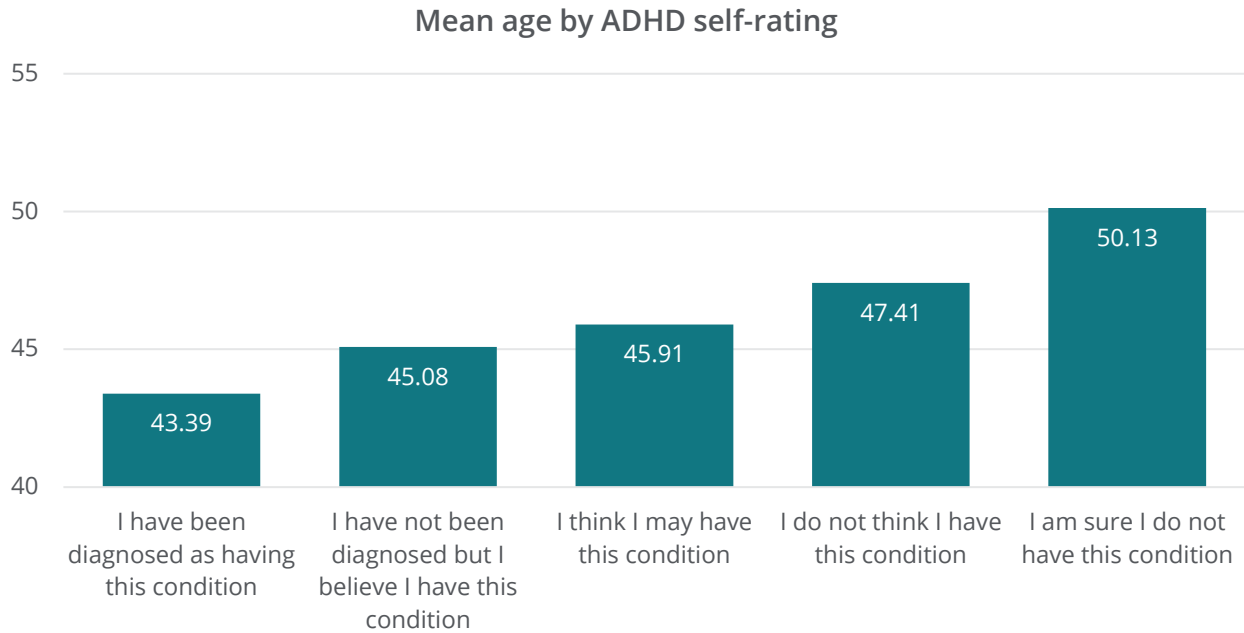
ADHD and type: summary

In line with previous research, those with preferences for Perceiving and for Intuition were the most likely to be diagnosed with ADHD, see themselves as having ADHD, or display behaviors typical of ADHD. However, in the current study, Feeling also had a significant, though smaller, impact. Those with a Feeling preference were somewhat more likely to be diagnosed with or see themselves as having ADHD than those with a Thinking preference, and somewhat more likely to be flagged by the checklist.

How ADHD relates to demographic factors

Women were somewhat more likely than men to have been diagnosed as having ADHD (17% of women compared with 14% of men) and were more likely to be identified by the checklist as potentially having ADHD (37% of women compared with 32% of men). This contrasts with previous research, which has tended to show a greater prevalence of ADHD amongst men (Oerbeck, et al., 2019; Polanczyk, de Lima, Horta, Biederman, & Rohde, 2007).

On average, those identified by the checklist as potentially having ADHD were 5 years younger than those not identified (44 years and 49 years respectively; Cohen $d=0.42$). The mean age for those diagnosed was just under 7 years lower than that of those who were sure they did not have ADHD, a statistically significant result (based on a one-way analysis of variance). Other research has also found that reported ADHD declines with age (Oerbeck, et al., 2019).



None of the measures of ADHD showed a significant relationship with degree of remote working, job level, or organization size.

Summary

- 16% of respondents had been diagnosed with ADHD, more than double the estimated incidence of ADHD in the population. This reflects the targeting of the survey towards ADHD-related forums and groups. 36% of those who completed the *Adult ADHD Self-Report Scale* checklist had behaviors consistent with ADHD.
- Compared with those sure that they did not have ADHD, those diagnosed felt less included and more misunderstood and stressed at work and were more likely to agree that they had had significant periods of unemployment. They had a less positive view of their organization’s attitude to neurodivergence, felt that more attention should be paid to neurodiversity and divergence, and had lower levels of job satisfaction. Very similar results were found when comparing the mean scores of those who were positive on the ADHD checklist with the mean scores of those who were negative on the checklist.
- Compared with those who were sure that they did not have ADHD, those diagnosed were more likely to feel that their condition conferred an advantage, to mask or hide their behavior, and to have a positive view of neurodivergence or see themselves as a neurodivergent advocate. They were somewhat less likely to see their organization as supportive of their condition. Similar results were found when comparing the mean scores of those who were positive on the ADHD checklist with the mean scores of those negative on the checklist.
- Those diagnosed with ADHD were much more likely to say that their neurodiversity allowed them to excel at aspects of their work, to say that they can do detailed work if it interests them, and that they can focus on a task that they really enjoy for hours and hours. They were more likely to say that they come up with lots of new ideas, are more creative than most people, have been able to craft or adapt their job, notice details that others miss, and see their neurodiversity as their superpower. They were less likely to say that they have a lot of energy or that they are more productive than their co-workers.

- Looking at personality differences, then those with N, F, and especially P preferences were the most likely to have ADHD:

 - Those diagnosed with, or who believed or thought they had ADHD, were more likely to have preferences for Intuition and for Feeling than those who did not think or who were sure they did not have the condition.
 - Those diagnosed with or who believed they had ADHD were more likely to have preferences for Perceiving than those who thought they may have the condition, who in turn were more likely to have a Perceiving preference than those who did not think or who were sure they did not have the condition.
 - The T-F effect was smaller than that for S-N or J-P.
 - Similar results were seen when the mean self-ratings for each preference pair were analyzed. Those with Intuition, Feeling, or Perceiving preferences had, on average, a higher 'score' than those with Sensing, Thinking, or Judging preferences.
 - Those who the ADHD checklist identified as potentially having ADHD were very much more likely to have preferences for Perceiving than for Judging, more likely to have preferences for Intuition and Feeling than for Sensing or Thinking, and somewhat more likely to have preferences for Introversion than for Extraversion.
 - 23% of those with Introverted Feeling as their favorite process had been diagnosed with ADHD, 20% of those with Introverted Thinking, and 19% of those with Extraverted Intuition. Only 11% of those with Extraverted Thinking had been diagnosed. The individual type most likely to be diagnosed was INFP.
- Women were somewhat more likely than men to have been diagnosed as having ADHD and were more likely to be identified by the checklist as potentially having ADHD. This contrasts with previous research, which has tended to show a greater prevalence of ADHD amongst men.
- Younger people were more likely to report as having ADHD. On average, those identified by the checklist as potentially having ADHD were 5 years younger than those not. The mean age for those diagnosed was just under 7 years lower than that of those who were sure they did not have ADHD. Other research has also found that reported ADHD declines with age.
- None of the measures of ADHD showed a significant relationship with degree of remote working, job level, or organization size.

Autism spectrum disorder (ASD)

ASD at work: an overview

Some autistic people can find it hard to communicate and interact with other people and hard to understand how other people think or feel. Some may find things like bright lights or loud noises overwhelming, stressful, or uncomfortable, and get anxious or upset about unfamiliar situations and social events. Some can take longer to understand information or may think the same things over and over.

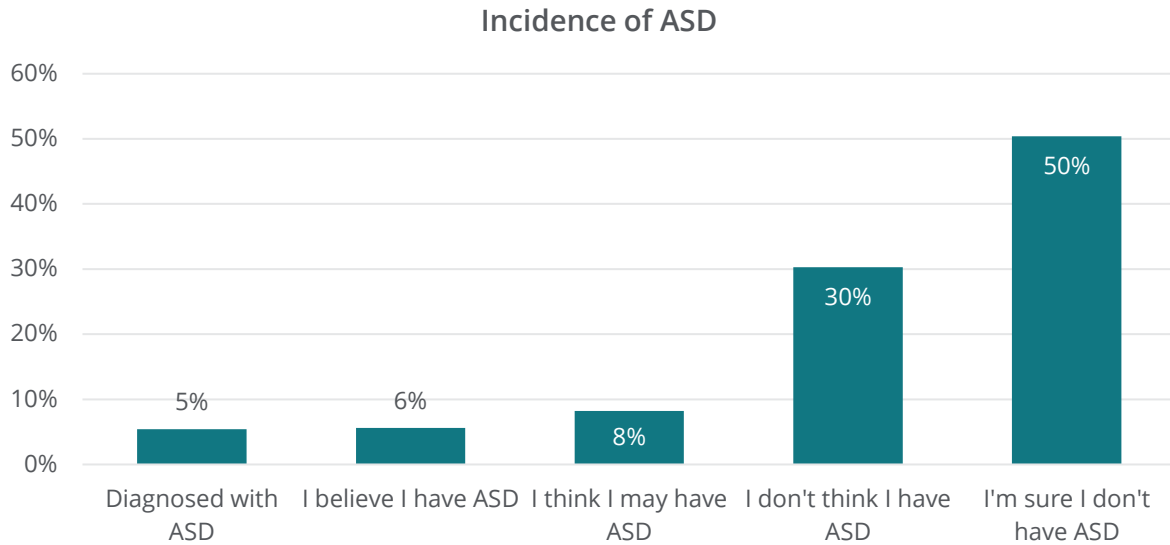
Autism represents a spectrum of different behaviors. For most people, not all these issues will apply, and those that do will differ in their impact. Autism is now often referred to as autism spectrum disorder (ASD) for this reason. The term Asperger's (or Asperger's syndrome) was in the past used to describe autistic people with average or above average intelligence but poor social skills. In practice, it was largely synonymous with the wording 'high functioning autistic', a phrase now considered outdated. There have also been moves to avoid the Asperger name relating to possible involvement by Hans Asperger with the Nazi regime in World War 2, though this connection is disputed (Falk, 2020). Note, however, that some people with autism identify themselves as "Aspies".

Some of the strengths of people with autism can include:

- A high degree of attention to detail, precision, and accuracy.
- Memorizing and learning information quickly and retaining this accurately.
- In-depth expertise and knowledge in specific areas.
- Logical thinking ability; methodical and analytical.
- Punctual, rule-following, dependable, reliable, honest.
- Able to focus for long periods of time when motivated.
- Creativity, with a different viewpoint and novel solutions.
- Thinking and learning in a visual way; good sense of direction.

Incidence of ASD

One study (Rose, Dietz, McArthur, & Maenner, 2020) estimated that approximately 2.21% or 5,437,988 adults aged 18 and older in the United States have ASD. In our sample 74 people, 5.4% of respondents, had been diagnosed with Autism Spectrum Disorder. A further 76 people had not been diagnosed with ASD, but believed that they had the condition, meaning that 11% of respondents had or believed that they had ASD.



How autism spectrum disorder relates to workplace experience and attitude

Do people with autism spectrum disorder feel more or less included, misunderstood, or stressed at work? The relationship between ASD and workplace experience and attitude was investigated in two ways:

- Scores on the 1-5 scale (from diagnosed with ADHD to being sure that one doesn't have ADHD) were correlated with scores on the workplace variables.
- An independent t-test was carried out on the mean score on each of the workplace variables to reveal differences between those diagnosed with ADHD and those sure that they did not have ADHD.

The results are shown below.

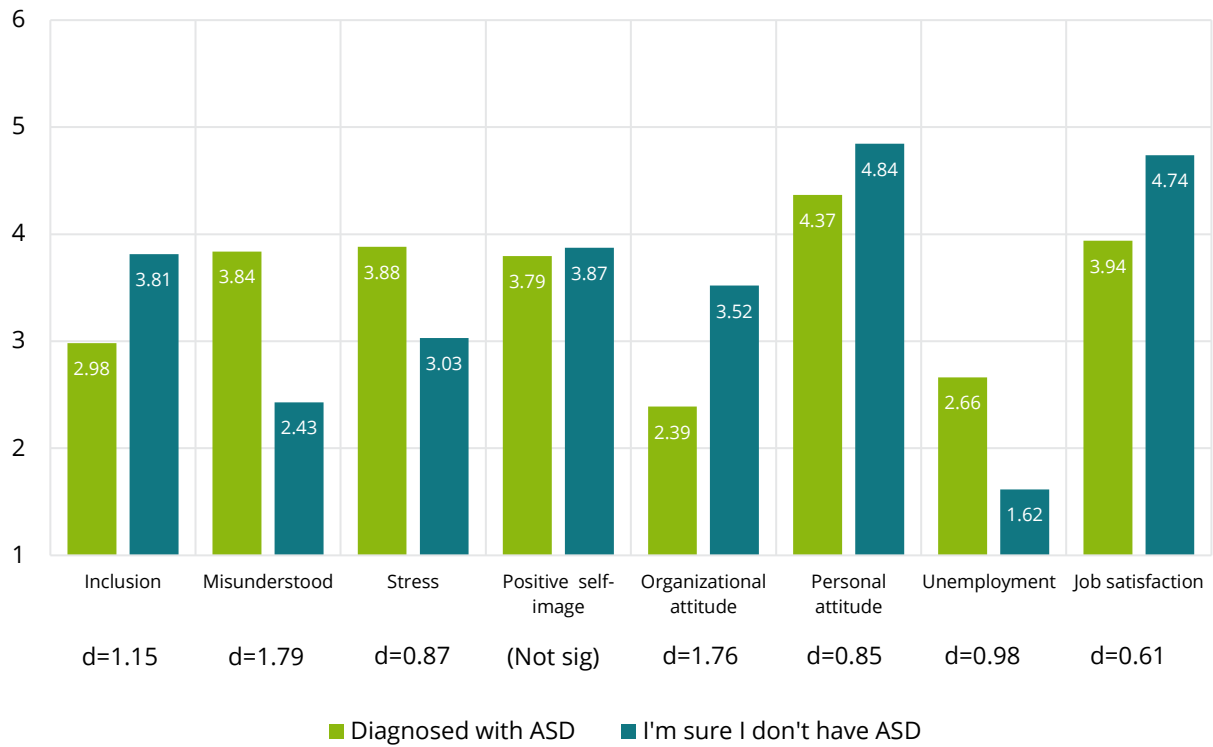
Correlation with ASD score (n=1,200 to 1,361)

| Inclusion | Misunderstood | Stress | Positive self image | Org attitude | ND attitude | Unemployment | Job satisfact. |
|-----------|---------------|--------|---------------------|--------------|-------------|--------------|----------------|
| -.317** | .479** | .281** | -.054 ^{NS} | -.441** | .243** | .228** | -.172** |

NS: not significant. ** significant at the .001 level.

Those scoring towards the ASD diagnosis end of the scale felt less included, more misunderstood, more stressed, had a less positive view of their organization's attitude to neurodivergence, felt that more attention should be paid to neurodiversity and neurodivergence, were more likely to have had significant periods of unemployment, and tended to have lower levels of job satisfaction.

Difference between those diagnosed with ASD and those sure they did not have ASD



Compared with those sure that they did not have ASD, those diagnosed felt much more misunderstood and had a much less positive view of their organization’s attitude to neurodivergence. They felt less included, more stressed at work, were more likely to agree that they had had significant periods of unemployment, felt that more attention should be paid to neurodiversity and divergence, and had lower levels of job satisfaction. Effect sizes (Cohen’s d) ranged from medium (0.61) to very large (1.79).

How autism spectrum disorder relates to the neurodivergent experience scales

As with the workplace experience scales, the relationship between ASD and the neurodivergent experience scales were investigated in two different ways. Scores on the ASD scale were correlated with scores on the experience scales and an independent t-test was carried out on the mean score on each of the scales between those diagnosed with ASD and those sure that they did not have ASD.

The results are shown below.

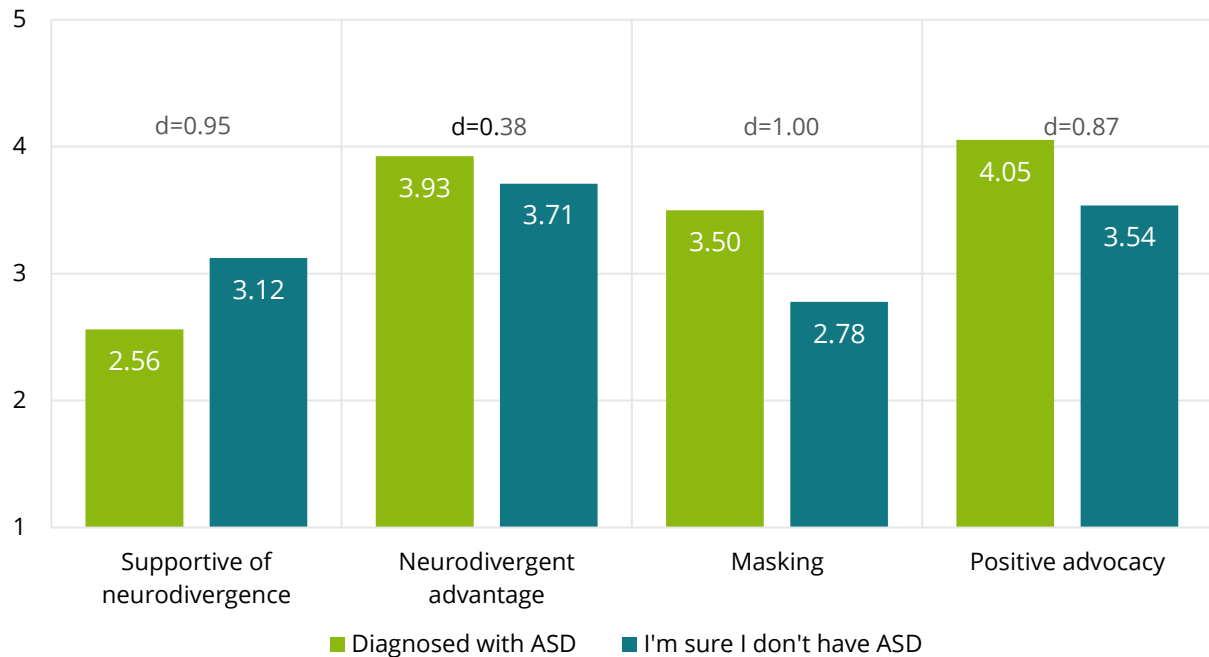
Correlation with ASD score

| Supportive of neurodivergence | Neurodivergent advantage | Masking | Positive advocacy |
|-------------------------------|--------------------------|---------|-------------------|
| -.261** | .130** | .336** | .270** |

N= 898 to 914. **: significant at the 0.01 level

Those scoring towards the ASD diagnosis end of the scale were more likely to mask or hide their neurodivergence and to have a positive view of neurodivergence or to be a neurodivergent advocate, and somewhat more likely to see their neurodivergence as helpful at work. They were less likely to see their organization as supportive of their neurodivergence.

Differences between those diagnosed with ASD and those sure they did not have ASD



Compared with those sure that they did not have ASD, those diagnosed were more likely to mask or hide their behavior and to have a positive view of neurodivergence or see themselves as a neurodivergent advocate, and somewhat more likely to feel that their condition conferred an advantage. They were less likely to see their organization as supportive of their condition.

Specific strengths of people with ASD

The survey contained several items relating to areas that have been seen as specific strengths of people with ASD, ADHD, and other conditions. The table below shows the correlation between each of these and the ASD diagnosis scale and the result of a t-test between those diagnosed with ASD and those sure that they did not have ASD.

| Survey item | r | t sig | Cohen d |
|---|---------|-------|---------|
| My neurodiversity allows me to excel at aspects of my work | 0.280** | <.001 | .915 |
| When I am doing something I really enjoy, I can focus on this for hours and hours | 0.239** | <.001 | .740 |
| I can do detailed work—but only if it interests me | 0.195** | <.001 | .601 |
| I notice details that others miss | 0.183** | <.001 | .686 |

| | | | |
|---|---------------------|-------|-------|
| I am more creative than most people | 0.182** | <.001 | .503 |
| I come up with lots of new ideas | 0.079** | NS | .236 |
| I see my neurodiversity as my 'superpower' | 0.078* | .012 | .296 |
| I have been able to adapt or 'craft' my job to make the best use of my neurodiversity | 0.061 ^{NS} | NS | - |
| I am more productive than most of my co-workers | 0.012 ^{NS} | NS | - |
| I usually follow the rules | 0.003 ^{NS} | NS | - |
| If I need to, I can get a lot done in a short time | 0.001 ^{NS} | NS | - |
| I am an expert in my field | -0.072* | NS | - |
| I'm good in a crisis | -0.111** | <.001 | -.410 |
| I have a lot of energy | -0.175** | <.001 | -.487 |

NS: not significant * significant at the .05 level ** significant at the .01 level

Those diagnosed with ASD were much more likely to say that their neurodiversity allowed them to excel at aspects of their work and that they can focus on a task that they really enjoy for hours and hours, and more likely to say that they can do detailed work if it interests them, that they notice details that others miss, and that they are more creative than most people. They were somewhat more likely to say that they come up with lots of new ideas and see their neurodiversity as their superpower. They were less likely to say that they have a lot of energy or that they are good in a crisis.

Previous research into personality type and ASD

There has been very little previous research into personality type and ASD. On theoretical grounds, Robert Chester suggested a link between I_TP type combinations and Asperger's Syndrome (Chester, 2006), though the only type-based empirical study found when preparing this report (albeit an MA thesis, and carried out with children) suggested I and J (Duke, 2005). Comparison with studies using the Five-Factor model (Ekblad, 2013; Lodi-Smith, Rodgers, Cunningham, Lopata, & Thomeer, 2019; Schwartzman, Wood, & Kapp, 2015) suggests I, S, T, and P, with I and T the most certain. A study using the Lumina Spark model (Desson, Ensor, & Cannon, 2024) suggests I, N, and T.

Personality type and ASD results from this study

The relationship between ASD and MBTI type was examined in several ways:

- A type table was produced for those diagnosed with ASD.
- The relationship between type and the respondents' self-ratings of ASD, using a scale from diagnosed with ASD to being sure that one did not have this condition, was analyzed in three ways:

- Using a chi-square analysis, whether there were differences in score distributions by type preference pairs.
- Using independent t-tests, whether there were mean differences by type preference pairs.
- Using a one-way analysis of variance, whether there were mean differences by whole type and favorite process.

Type table for those diagnosed with ASD (N=73)

| Type | N | % |
|------|-----|-------|
| E | 80 | 17.8% |
| I | 131 | 82.2% |
| S | 60 | 32.9% |
| N | 151 | 67.1% |
| T | 97 | 56.2% |
| F | 114 | 43.8% |
| J | 110 | 68.5% |
| P | 101 | 31.5% |

| | | | |
|--|--|--|--|
| ISTJ N=14 19.2% SSR=1.21 | ISFJ N=5 6.8% SSR=0.81 | INFJ N=11 15.1% SSR=6.55 | INTJ N=14 19.2% SSR=7.38 |
| ISTP N=1 1.4% SSR=0.14 | ISFP N=2 2.7% SSR=0.42 | INFP N=7 9.6% SSR=1.52 | INTP N=6 8.2% SSR=1.71 |
| ESTP N=0 0.0% SSR=0.00 | ESFP N=0 0.0% SSR=0.00 | ENFP N=4 5.5% SSR=0.67 | ENTP N=3 4.1% SSR=0.96 |
| ESTJ N=1 1.4% SSR=0.15 | ESFJ N=1 1.4% SSR=0.24 | ENFJ N=2 2.7% SSR=1.25 | ENTJ N=2 2.7% SSR=1.52 |

Introversion, Intuition, and Judging were over-represented in comparison to the general population. INFJ and INTJ were the most-over-represented individual types. The most common types were ISTJ and INTJ; together these represented 38% of those diagnosed with ASD. None of the group had ESTP or ESFP preferences, though the group was fairly small (73 people).

Among those who believed they had ASD but had not been diagnosed, INTJ was by some distance the most common type (21.6%), followed by ISTJ and INFJ (both 11.8%).

Comparing those diagnosed with ASD with others within the sample, then preferences for ISTJ and INTJ were significantly over-represented. Comparing those who were sure that they did not have ADHD with others within the sample, then preferences for ENFP, ENTJ, and ESTJ were significantly over-represented and preferences for INFJ, INTJ, and INTP under-represented.

Overall, these results suggest that I__J, and possibly I_TJ, are more common amongst individuals with ASD.

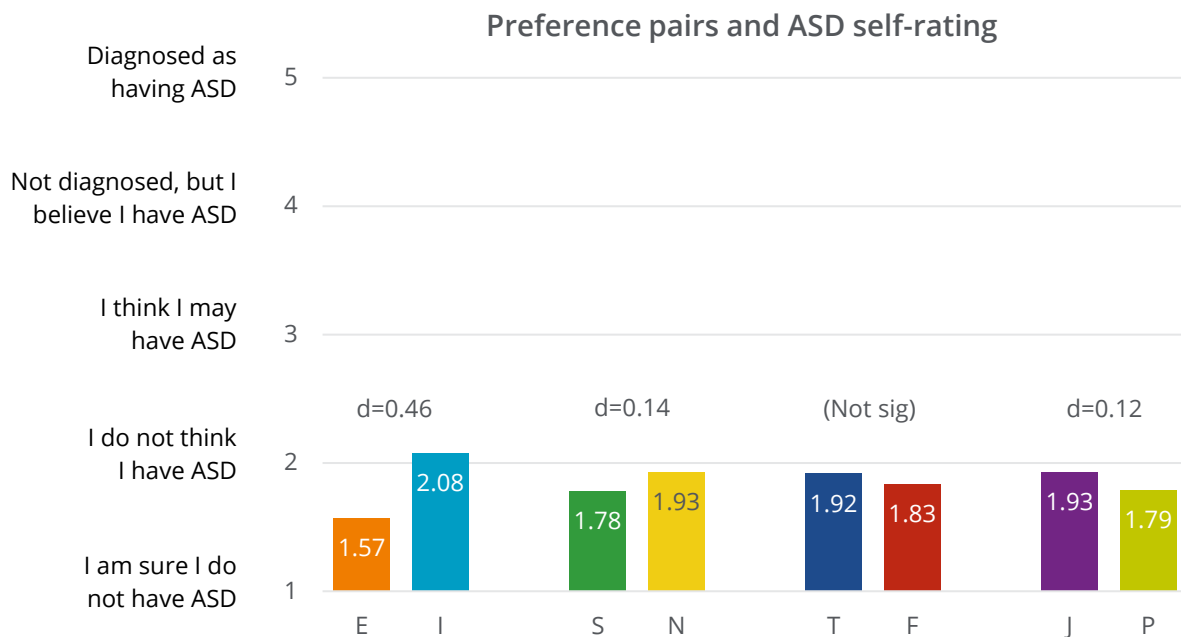
Relationship of type to ASD self-rating

A chi-square analysis showed significant differences by E-I but not S-N, T-F, or J-P:

| ASD level | E | I |
|---|---------------|-----|
| Diagnosed as having ASD | 18% | 82% |
| Not diagnosed, but I believe I have ASD | 26% | 74% |
| I think I may have ASD | 18% | 82% |
| I do not think I have ASD | 37% | 63% |
| I am sure I do not have ASD | 50% | 50% |
| Chi-square value and significance | 71.29, p<.001 | |

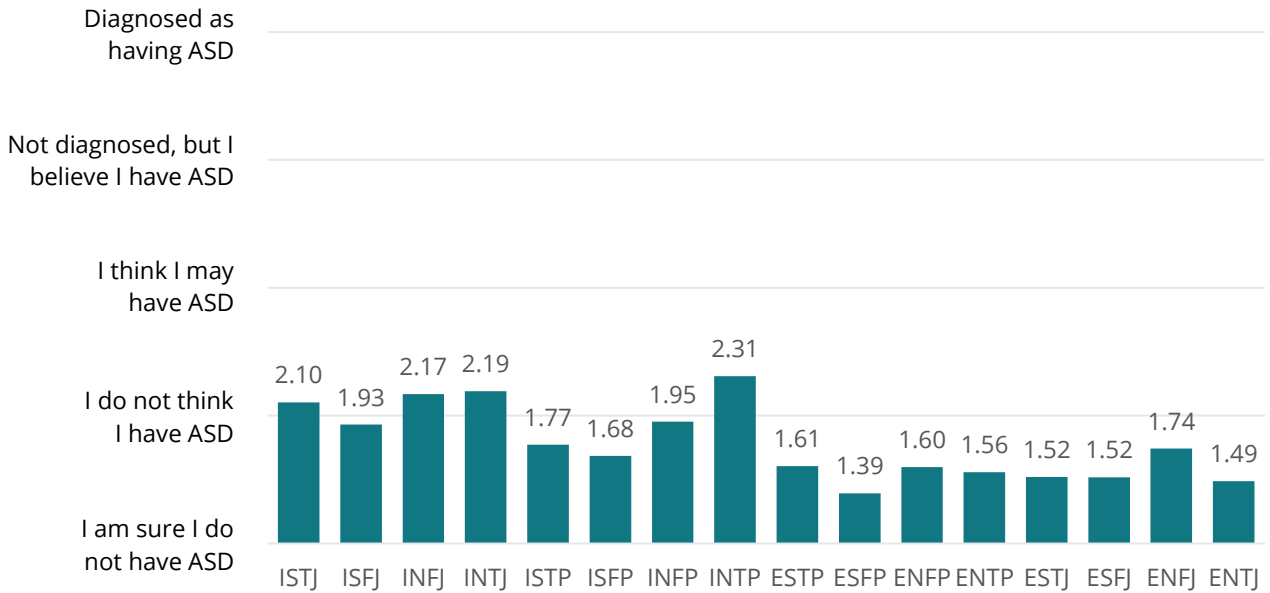
The results show that those diagnosed with, or who believed or thought they had ASD, were more likely to have preferences for Introversion than those who did not think or who were sure they did not have the condition.

Similar results were seen when the mean self-ratings for each preference pair were analyzed. Those with Introversion preferences had, on average, a higher self-rating than those with Extraversion preferences. To a much lesser extent, so did those with Intuition and Judging preferences.



A one-way analysis of variance showed a significant effect of whole type.

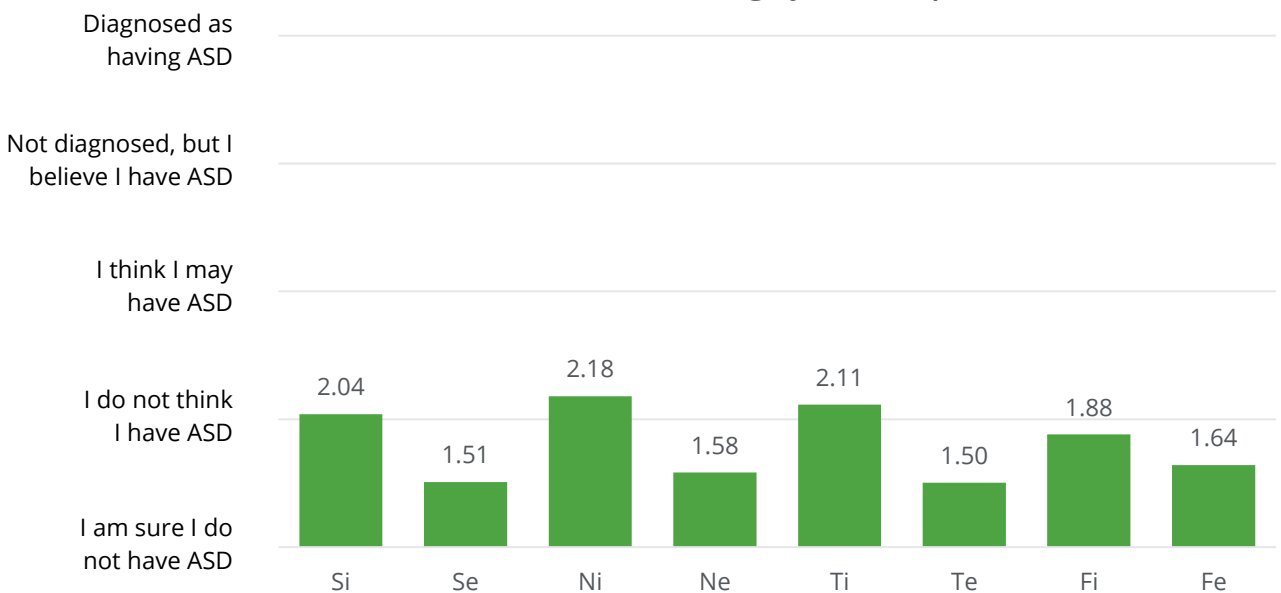
Mean ASD self-rating by type



Respondents with INTP preferences had the highest score, followed by INTJ, INFJ, and then ISTJ. Those with ESFP preferences had the lowest score. In terms of diagnosis, 11% of those with ISTJ preferences had been diagnosed with ASD, 9% of those with INTJ, 8% of those with INTP, 8% of those with INFJ, and 7% of those with ISFJ preferences. No one with an ESTP or ESFP preference had been diagnosed, and only 1% of those with ESTJ preferences.

In terms of favorite process, Extraverted Thinking and Extraverted Sensing had the lowest score, Introverted Intuition had the highest.

Mean ASD self-rating by favorite process



10% of those with a favorite process of Introverted Sensing had been diagnosed with ASD, and 8% of those with Introverted Intuition. No-one with Extraverted Sensing as a favorite process had been diagnosed, and only 2% of those with Extraverted Thinking or Extraverted Feeling.

ASD and type: summary

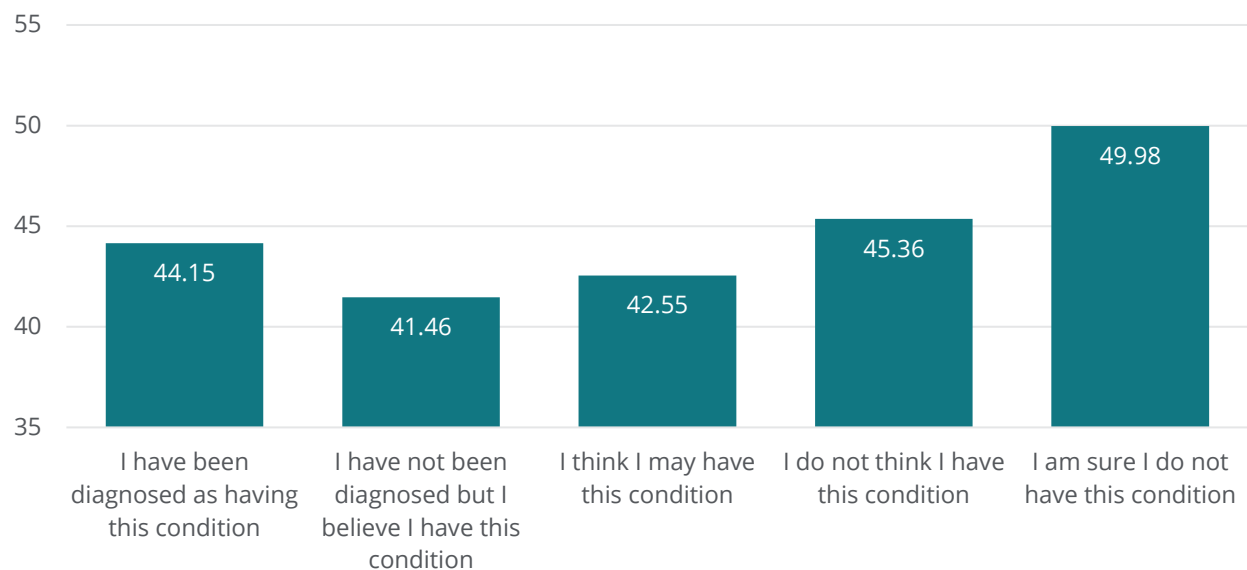
The clearest relationship is with Extraversion–Introversion. Those diagnosed with, or who believed or thought they had ASD, were much more likely to have preferences for Introversion than for Extraversion. Of course, this should not be taken as meaning that all, most or a majority of Introverts have ASD. Only 8% of those with an Introversion preference have been diagnosed with ASD (compared with 3% of those with an Extraversion preference). The type most likely to be diagnosed was ISTJ, though this was still only 11% of this preference.

How ASD relates to demographic factors

Men were somewhat more likely than women to have been diagnosed as having ASD (6.2% of men compared with 4.6% of women), but women were more likely than men to say they believed they had ASD (6.2% compared with 3.2%). In total, slightly more women (10.8%) than men (9.4%) had been diagnosed with ASD or believed that they had the condition. The percentages tip further towards women if those who think they have ASD (8.9% of women, 7.3% of men) are included. This could indicate a tendency to under-diagnose women and girls with ASD, and/or over-diagnose men and boys, something that has been suggested by previous research (Kreiser & White, 2014; Navarro-Pardo, López-Ramón, Alonso-Esteban, & Alcantud-Marín, 2021). There was no significant difference between men and women in ASD self-rating score.

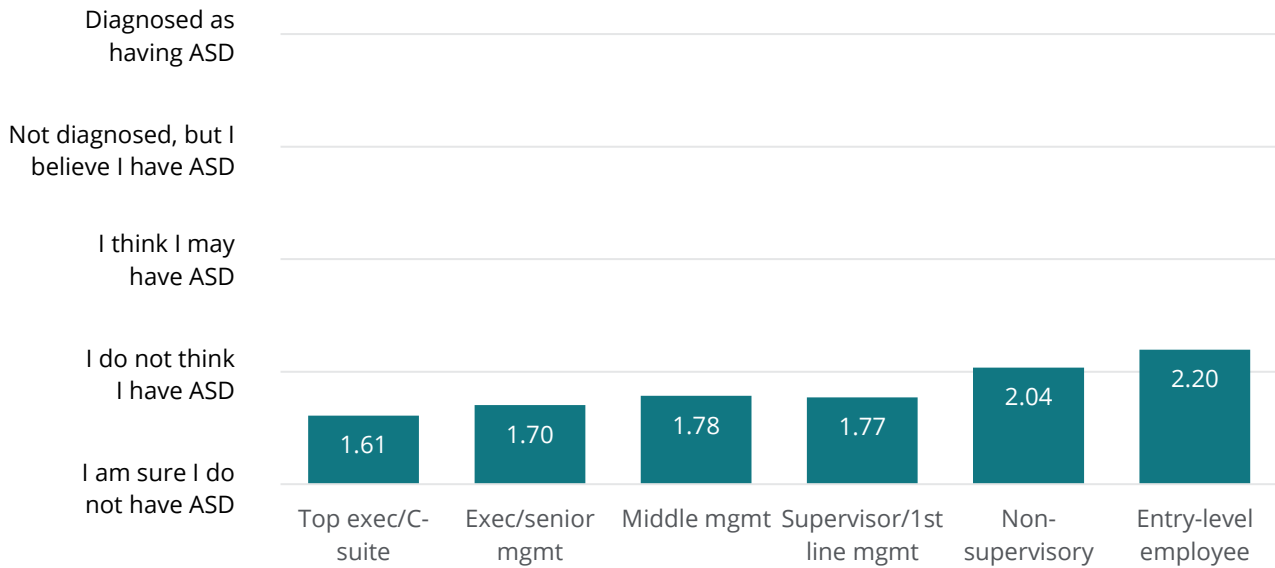
A one-way analysis of variance showed a significant, but non-linear, relationship with age.

Mean age by ASD self-rating



Managers were less likely to have or think they have ASD than more junior staff.

Mean ASD self-rating by job level



There was no significant relationship with degree of remote working or with organization size.

Summary

- 74 people, 5.4% of respondents, had been diagnosed with autism spectrum disorder, around twice the estimated incidence in the population. This likely reflects the targeting of the survey towards ASD-related forums and groups.
- Compared with those sure that they did not have ASD, those diagnosed felt much more misunderstood and had a much less positive view of their organization’s attitude to neurodivergence. They felt less included more and stressed at work, were more likely to agree that they had had significant periods of unemployment, felt that more attention should be paid to neurodiversity and divergence, and had lower levels of job satisfaction.
- Compared with those sure that they did not have ASD, those diagnosed were more likely to mask or hide their behavior and to have a positive view of neurodivergence or see themselves as a neurodivergent advocate, and somewhat more likely to feel that their condition conferred an advantage. They were less likely to see their organization as supportive of their condition.
- Those diagnosed with ASD were much more likely to say that their neurodiversity allowed them to excel at aspects of their work and that they can focus on a task that they really enjoy for hours and hours. They were more likely to say that they can do detailed work if it interests them, that they notice details that others miss, and that they are more creative than most people. They were somewhat more likely to say that they come up with lots of new ideas and see their neurodiversity as their superpower. They were less likely to say that they have a lot of energy or that they are good in a crisis.
- In terms of personality, the clearest relationship is with Extraversion-Introversion. Those diagnosed with, or who believed or thought they had ASD, were much more likely to have preferences for Introversion than for Extraversion. Of course, this should not be taken as meaning that all, most or a majority of Introverts have ASD. Only 8% of those with an

Introversion preference have been diagnosed with ASD (compared with 3% of those with an Extraversion preference). The type most likely to be diagnosed was ISTJ, though this was still only 11% of this preference.

- Men were somewhat more likely than women to have been diagnosed as having ASD, but women were more likely than men to say they believed they had ASD. This could indicate a tendency to under-diagnose women and girls with ASD, and/or over-diagnose men and boys.
- Managers were less likely to have or think they have ASD than more junior staff.

Obsessive-compulsive disorder (OCD)

OCD at work: an overview

Obsessive-compulsive disorder (OCD) has historically been thought of as a type of anxiety disorder or a form of mental illness. While OCD can indeed create anxious thoughts and anxiety-related symptoms, it has more recently also been seen as neurodivergent in origin. People with OCD have a brain that processes and behaves differently from what is considered typical, a key characteristic of neurodivergence. As some but not all authorities see OCD as a form of neurodiversity, it was included in our analysis.

In obsessive-compulsive disorder, a person has obsessive thoughts and compulsive behaviors. An obsession is an unwanted and unpleasant thought, image, or urge that repeatedly enters a person's mind, causing feelings of anxiety, disgust, or unease. A compulsion is a repetitive behavior or mental act that they feel compelled to do in order to relieve the unpleasant feelings brought on by the obsessive thought. The compulsive behavior temporarily relieves the anxiety, but the obsession and anxiety soon return, causing the cycle to begin again. Common types of compulsive behavior in people with OCD include:

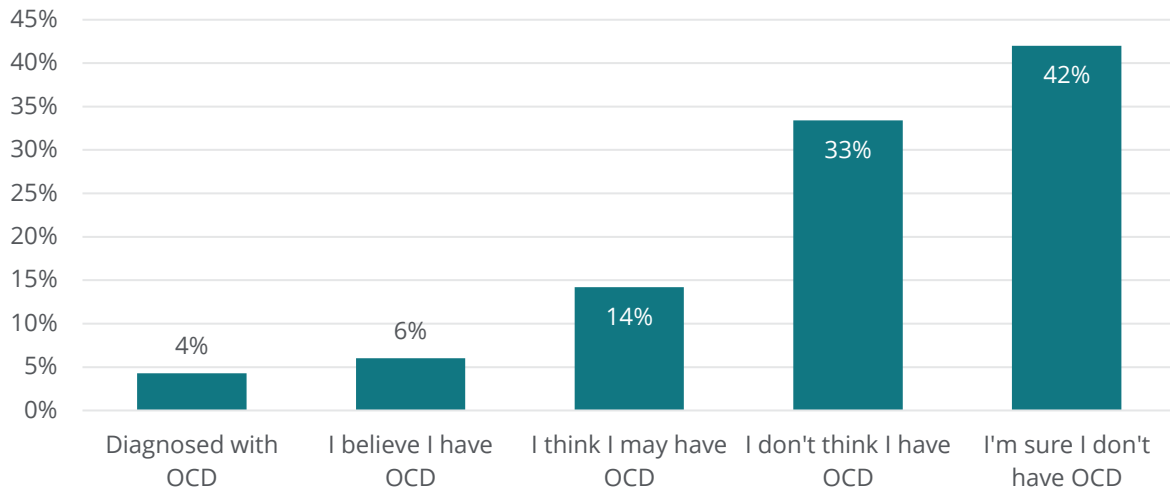
- Cleaning and hand washing.
- Checking—such as checking and rechecking that doors are locked.
- Counting.
- Ordering and arranging.
- Hoarding.
- Asking for reassurance.
- Repeating words in their head.
- Thinking "neutralizing" thoughts to counter obsessive thoughts.
- Avoiding places and situations that could trigger obsessive thoughts.

Obsessive-compulsive disorder can be a debilitating condition. However, there can be positive aspects for some people. Those with OCD are often cautious and risk averse, which can be an advantage or a disadvantage in the workplace depending on the situation or the nature of their work. They are usually very detail-conscious, even perfectionist, and (unless compulsions get in the way) good at meeting deadlines. Some research has suggested that people with OCD may be more creative (Furnham, Hughes, & Marshall, 2013).

Incidence of OCD

One meta-analysis estimated that at any one time, approximately 1.2% of adults experience OCD. In our sample 59 people, 4.3% of respondents, self-reported as having been diagnosed with obsessive-compulsive disorder. A further 82 people had not been diagnosed with OCD, but believed that they had the condition, meaning that 10.3% of respondents had or believed that they had OCD.

Incidence of OCD



How obsessive-compulsive disorder relates to workplace experience and attitude

Do people with obsessive-compulsive disorder feel more or less included, misunderstood, or stressed at work? The relationship between OCD and workplace experience and attitude was investigated in two ways:

- Self-rating scores on the 1-5 scale (from diagnosed with OCD to being sure that one doesn't have OCD) were correlated with scores on the workplace variables.
- An independent t-test was carried out on the mean score on each of the workplace variables, to reveal differences between those diagnosed with OCD and those sure that they did not have OCD.

The results are shown below.

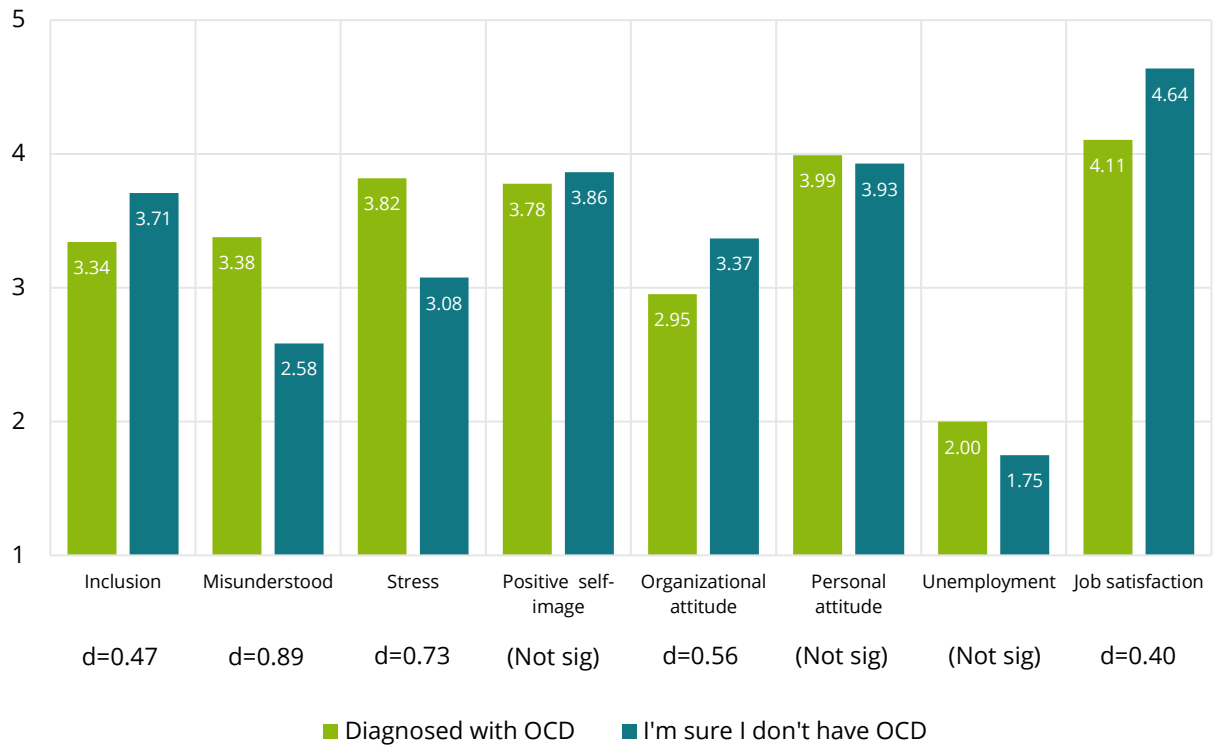
Correlation with OCD score (n=1,200 to 1,361)

| Inclusion | Misunderstood | Stress | Positive self image | Org attitude | ND attitude | Unemployment | Job satisfact. |
|-----------|---------------|--------|---------------------|--------------|--------------------|--------------------|----------------|
| -.111** | .225** | .184** | -.029 ^{NS} | -.126** | .029 ^{NS} | .052 ^{NS} | -.090** |

NS: not significant. ** significant at the .001 level.

Those scoring towards the OCD diagnosis end of the scale felt more misunderstood, somewhat more stressed, somewhat less included, had a somewhat less positive view of their organizations attitude to neurodivergence, and a slight tendency to lower job satisfaction.

Difference between those diagnosed with OCD and those sure they did not have OCD



Compared with those sure that they did not have OCD, those diagnosed felt more misunderstood, more stressed, and had a less positive view of their organization’s attitude to neurodivergence. They felt somewhat less included at work and had somewhat lower levels of job satisfaction. Effect sizes (Cohen’s d) ranged from small-medium (0.40) to large (0.89).

How obsessive-compulsive disorder relates to the neurodivergent experience scales

As with the workplace experience scales, the relationship between OCD and the neurodivergent experience scales were investigated in two different ways. Scores on the OCD scale were correlated with scores on the experience scales and an independent t-test was carried out on the mean score on each of the scales between those diagnosed with OCD and those sure that they did not have OCD.

The results are shown below.

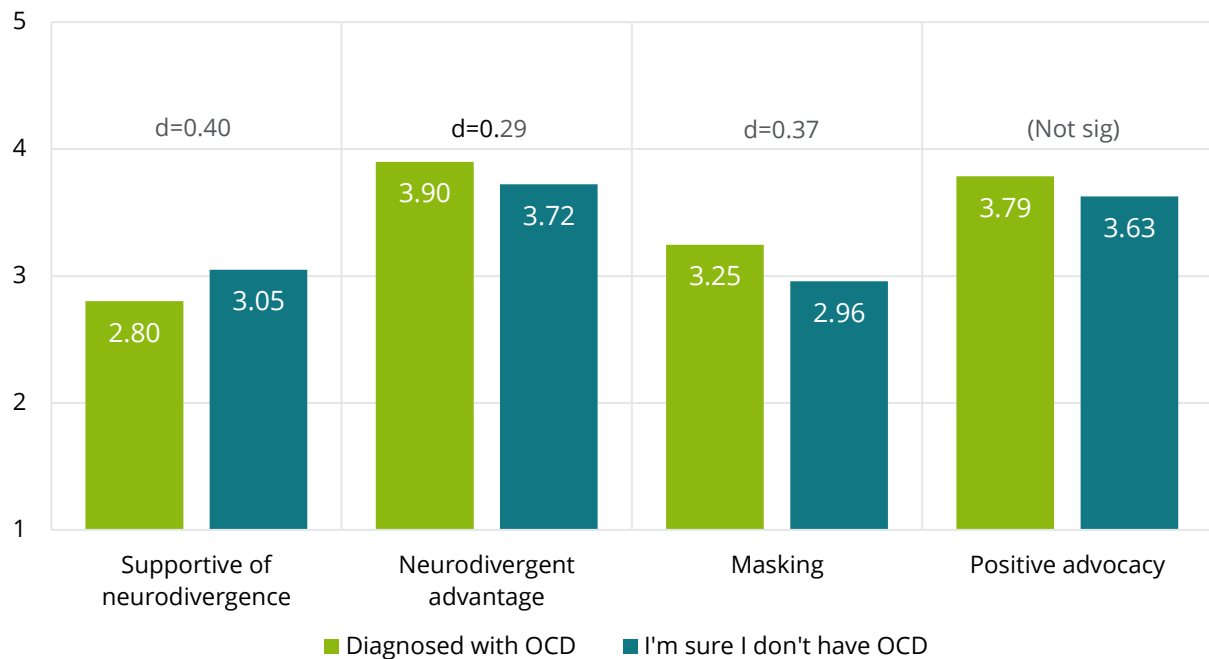
Correlation with OCD score

| Supportive of neurodivergence | Neurodivergent advantage | Masking | Positive advocacy |
|-------------------------------|--------------------------|-------------------|--------------------|
| -.049 ^{NS} | .094 ^{**} | .079 [*] | .061 ^{NS} |

N= 898 to 914. *: significant at the 0.05 level. **: significant at the 0.01 level.

Those scoring towards the OCD diagnosis end of the scale were somewhat more likely to mask or hide their neurodivergence and to see their neurodivergence as helpful at work.

Differences between those diagnosed with OCD and those sure they did not have OCD



Compared with those sure that they did not have OCD, those diagnosed were somewhat more likely to feel that their condition conferred an advantage and to mask or hide their behavior, and somewhat less likely to see their organization as supportive of their condition. Effect sizes (Cohen's d) were small.

Specific strengths of people with OCD

The survey contained several items relating to areas that have been seen as specific strengths of people with neurodivergent conditions. The table below shows the correlation between each of these and the OCD diagnosis scale and the result of a t-test between those diagnosed with OCD and those sure that they did not have OCD.

| Survey item | r | t sig | Cohen d |
|---|---------------------|-------|---------|
| My neurodiversity allows me to excel at aspects of my work | 0.140** | <.001 | .501 |
| I notice details that others miss | 0.131** | .002 | .390 |
| I have been able to adapt or 'craft' my job to make the best use of my neurodiversity | 0.110** | .021 | .304 |
| When I am doing something I really enjoy, I can focus on this for hours and hours | 0.099** | .026 | .267 |
| I see my neurodiversity as my 'superpower' | 0.085* | NS | - |
| I am more creative than most people | 0.036 ^{NS} | NS | - |

| | | | |
|--|----------------------|------|-------|
| If I need to, I can get a lot done in a short time | 0.036 ^{NS} | NS | - |
| I come up with lots of new ideas | 0.029 ^{NS} | NS | - |
| I usually follow the rules | 0.023 ^{NS} | NS | - |
| I can do detailed work – but only if it interests me | 0.021 | NS | - |
| I am more productive than most of my co-workers | 0.018 ^{NS} | NS | - |
| I'm good in a crisis | -0.042 ^{NS} | NS | - |
| I am an expert in my field | -0.059 [*] | .007 | -.399 |
| I have a lot of energy | -0.082 ^{**} | .005 | -.352 |

NS: not significant * significant at the .05 level ** significant at the .01 level

Those diagnosed with OCD were more likely to say that their neurodiversity allowed them to excel at aspects of their work, that they notice details that others miss, and that they have been able to adapt or craft their job. They were somewhat more likely to say that when they are doing something they really enjoy, they can focus on this for hours and hours. They were less likely to say that they were an expert in their field or that they have a lot of energy.

Previous research into personality type and OCD

Previous research has suggested that people with obsessive-compulsive disorder are more likely to have a Judging than a Perceiving preference. Otis & Louks (2001) found that individuals with ISTJ or INTJ preferences were more likely to show OCD symptoms, those with INFP or INTP preferences less likely, while Coolidge, Segal, Hook, Yamazaki, & Ellett (2001) found that Introversion, Thinking, Judging and to a lesser extent Sensing correlated with the Obsessive-Compulsive scale of the CATI assessment. In two different studies, Furnham & Crump (2005, 2014) showed that Judging, and to some extent Sensing, correlated with the Diligent scale of the Hogan Development Survey (HDS).

Personality type and OCD results from this study

The relationship between type and the respondents' self-ratings of OCD, using a scale from diagnosed with OCD to being sure that one did not have this condition, was analyzed in three ways:

- Using a chi-square analysis to explore whether there were differences in score distributions by type preference pairs.
- Using independent t-tests to explore whether there were mean differences by type preference pairs.
- Using a one-way analysis of variance to explore whether there were mean differences by whole type and favorite process.

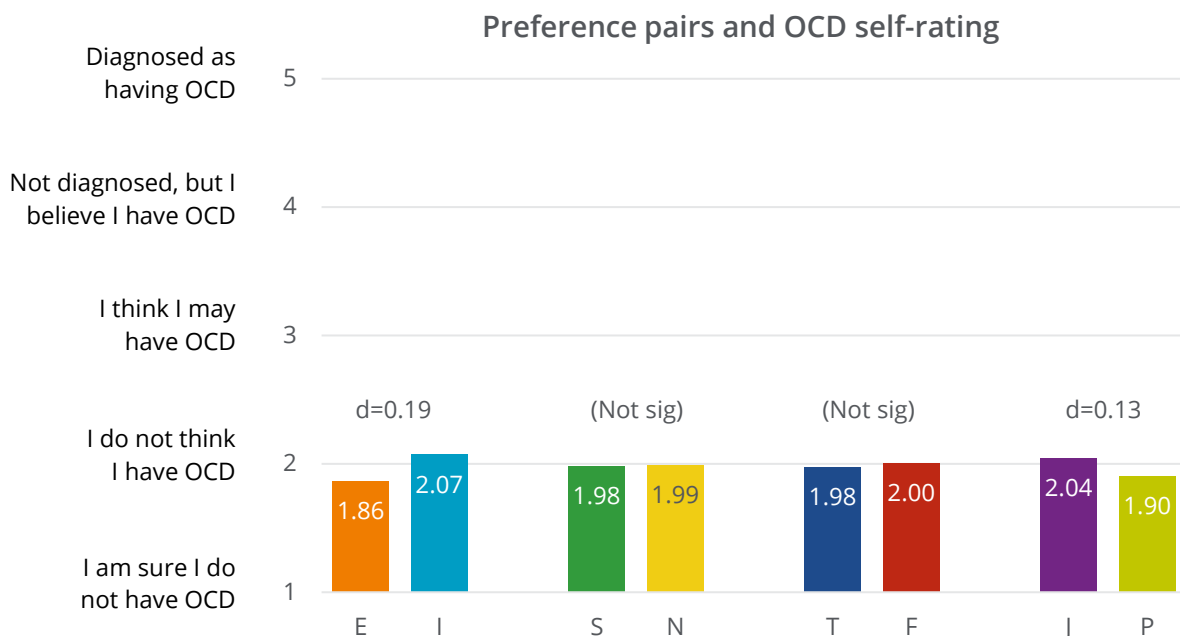
A type table was not produced for those diagnosed with obsessive-compulsive disorder, as the sample size, 58 people, was too small.

A chi-square analysis showed significant differences by E-I and J-P but not by S-N or T-F:

| OCD level | E | I | J | P |
|---|---------------|-----|---------------|-----|
| Diagnosed as having OCD | 36% | 64% | 60% | 40% |
| Not diagnosed, but I believe I have OCD | 26% | 74% | 65% | 35% |
| I think I may have OCD | 33% | 67% | 68% | 32% |
| I do not think I have OCD | 41% | 59% | 62% | 38% |
| I am sure I do not have OCD | 44% | 56% | 56% | 44% |
| Chi-square value and significance | 14.93, p=.005 | | 10.06, p=.039 | |

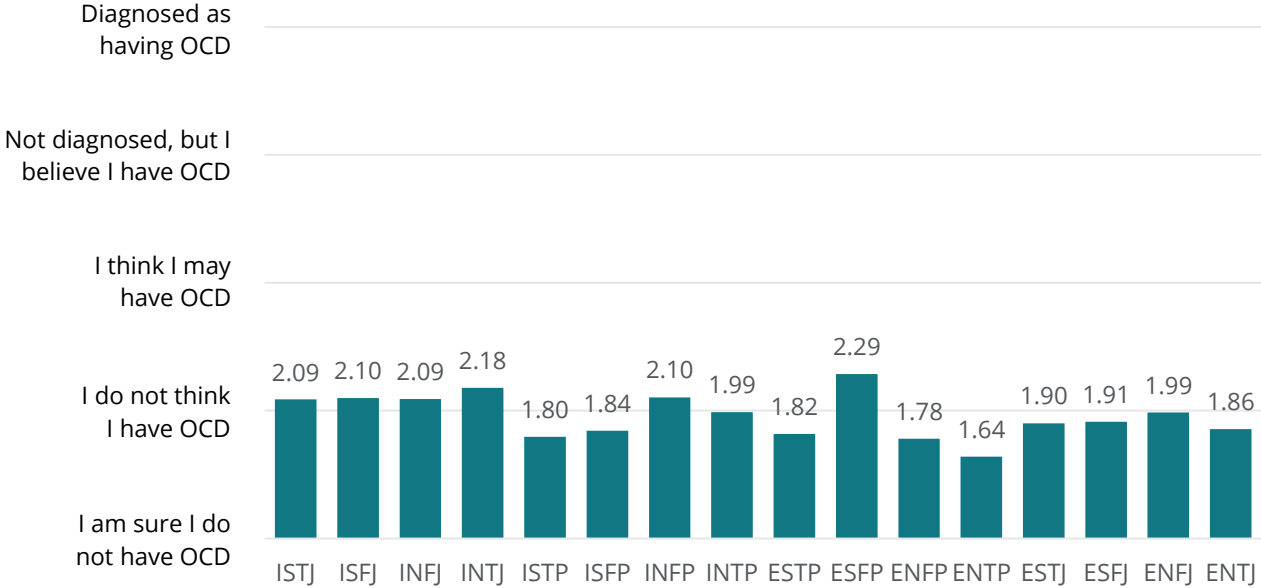
For Extraversion-Introversion, the results showed, as expected, that those diagnosed with, or who believed or thought they had OCD, were more likely to have preferences for Introversion than those who did not think or who were sure they did not have the condition. However, for the other preference pairs the results were not as expected. They showed a curvilinear relationship, with the highest proportion of Judging preferences amongst those who thought they may have OCD. The clearest finding here is that those with a Perceiving preference are more likely to be sure that they do **not** have OCD than those with a Judging preference.

Similar results were seen when the mean self-ratings for each preference pair were analyzed. Those with Introversion preferences had, on average, a somewhat higher self-rating than those with Extraversion preferences. To a lesser extent, so did those with Judging preferences. Effect sizes (Cohen’s d) were small.



A one-way analysis of variance showed a small but significant effect of whole type.

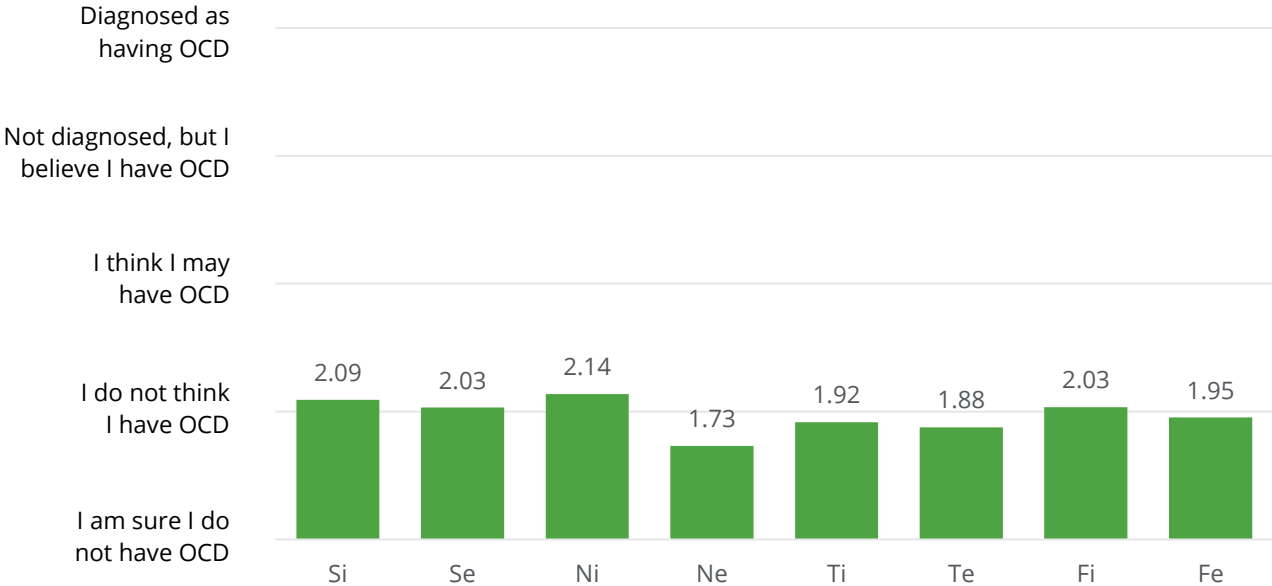
Mean OCD self-rating by type



Contrary to expectations, respondents with ESFP preferences had the highest score. Those with ENTP preferences had the lowest.

In terms of favorite process, Extraverted Intuition had the lowest score, Introverted Intuition the highest.

Mean OCD self-rating by favorite process

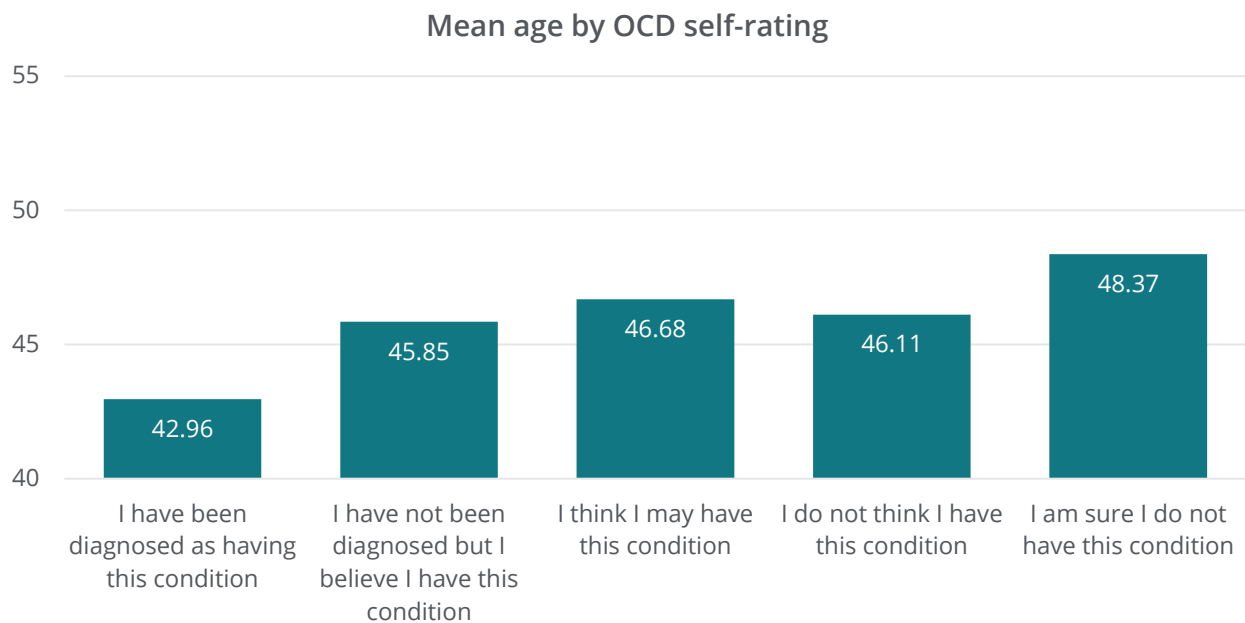


OCD and type: summary

- Those diagnosed with, or who believed or thought they had OCD, were more likely to have preferences for Introversion than those who did not think or who were sure they did not have the condition. Those with a Perceiving preference were more likely to be sure that they did not have OCD than those with a Judging preference. Overall, those with I and to some extent J preferences were the most likely to see themselves as having OCD. It may be that those diagnosed with OCD are no more likely to have a Judging or a Perceiving preference, but that some aspects of behavior associated with Judging may lead some people with a Judging preference to think they have OCD.

How OCD relates to demographic factors

There was a small but statistically significant relationship with age, with younger people somewhat more likely to have been diagnosed.



There was no significant relationship with gender, job level, degree of remote working, or organization size.

Summary

- 59 people, 4.3% of respondents, self-reported as having been diagnosed with obsessive-compulsive disorder. This compares with an estimated incidence of around 1% in the population.
- Compared with those sure that they did not have OCD, those diagnosed felt more misunderstood, more stressed, and had a less positive view of their organization’s attitude to neurodivergence. They felt somewhat less included at work and had somewhat lower levels of job satisfaction. They were somewhat more likely to feel that their condition conferred an advantage and to mask or hide their behavior and somewhat less likely to see their organization as supportive of their condition.

- Those diagnosed with OCD were more likely to say that their neurodiversity allowed them to excel as aspects of their work, that they notice details that others miss, and that they have been able to adapt or craft their job. They were somewhat more likely to say that when they are doing something they really enjoy, they can focus on this for hours and hours. They were less likely to say that they were an expert in their field or that they have a lot of energy.
- Those with an Introversion preference were more likely to have been diagnosed with OCD. Those with Introversion and to some extent Judging preferences were the most likely to see themselves as having OCD.
- Younger people were more likely to have been diagnosed with OCD.

Dyslexia

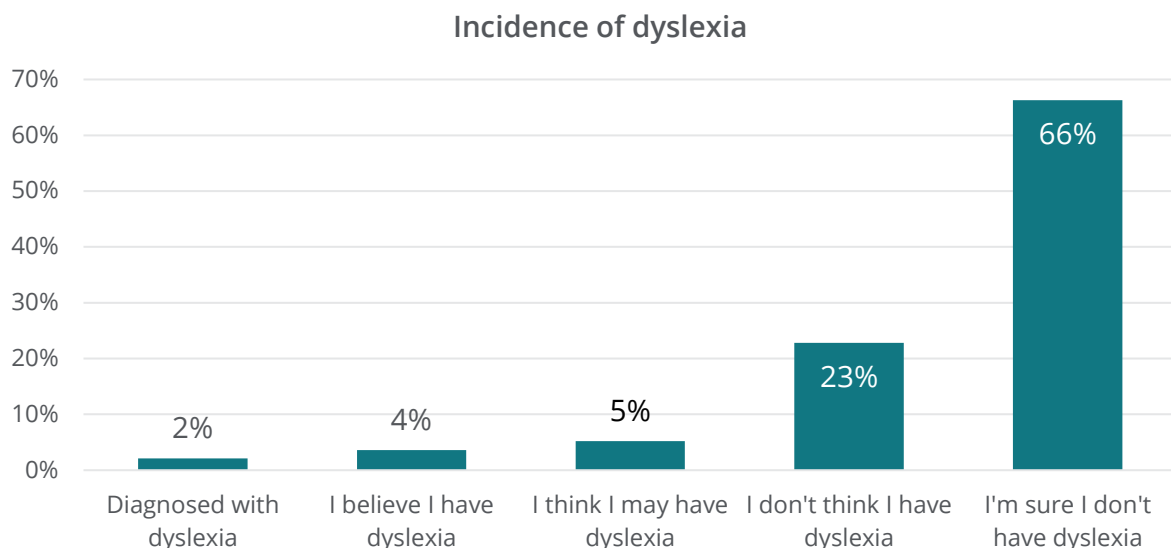
Dyslexia at work: an overview

When learning to read, children with dyslexia find it difficult to recognize the different sounds that make up words and relate these to written letters. As a result, people with dyslexia may read and write very slowly, confuse the order of letters in words, be confused by letters that look similar, write letters the wrong way round (such as "b" and "d"), and have poor or inconsistent spelling. In the workplace, they may understand information when told verbally, but have difficulty with information that is written down. Some may find it hard to carry out a sequence of directions, and they can struggle with planning and organization.

Research suggests that people with dyslexia tend to take in the whole picture rather than the details at the centre of their visual field (Geiger, et al., 2008). This can mean they have advantages over other people in areas such as big-picture thinking, lateral thinking, and creative problem-solving. They can have an intuitive understanding of how things work and strengths in visualizing rather than verbalizing. There is some research evidence that dyslexic adults may be more creative in non-written but not in verbal or written contexts, compared with non-dyslexic adults, though the effect is small and may not exist with younger people (Erbelli, Peng, & Rice, 2022). Other studies suggest that the question of whether dyslexic people are more creative depends on exactly how creativity is defined (Gutierrez-Ortega, et al., 2023).

Incidence of dyslexia

Estimates of the incidence of dyslexia vary, from 2 or 3 percent up to 17 or 18 percent (Wagner, et al., 2020). In our sample 29 people, 2.1% of respondents, self-reported as having been diagnosed with dyslexia. A further 49 people had not been diagnosed with dyslexia, but believed that they had the condition, meaning that 5.7% of respondents had or believed that they had dyslexia.



How dyslexia relates to workplace experience and attitude

Do people with dyslexia feel more or less included, misunderstood, or stressed at work? The relationship between dyslexia and workplace experience and attitude was investigated in two ways:

- Self-rating scores on the 1-5 scale (from diagnosed with dyslexia to being sure that one doesn't have dyslexia) were correlated with scores on the workplace variables.
- An independent t-test was carried out on the mean score on each of the workplace variables, to reveal differences between those diagnosed with dyslexia and those sure that they did not have dyslexia.

The results are shown below.

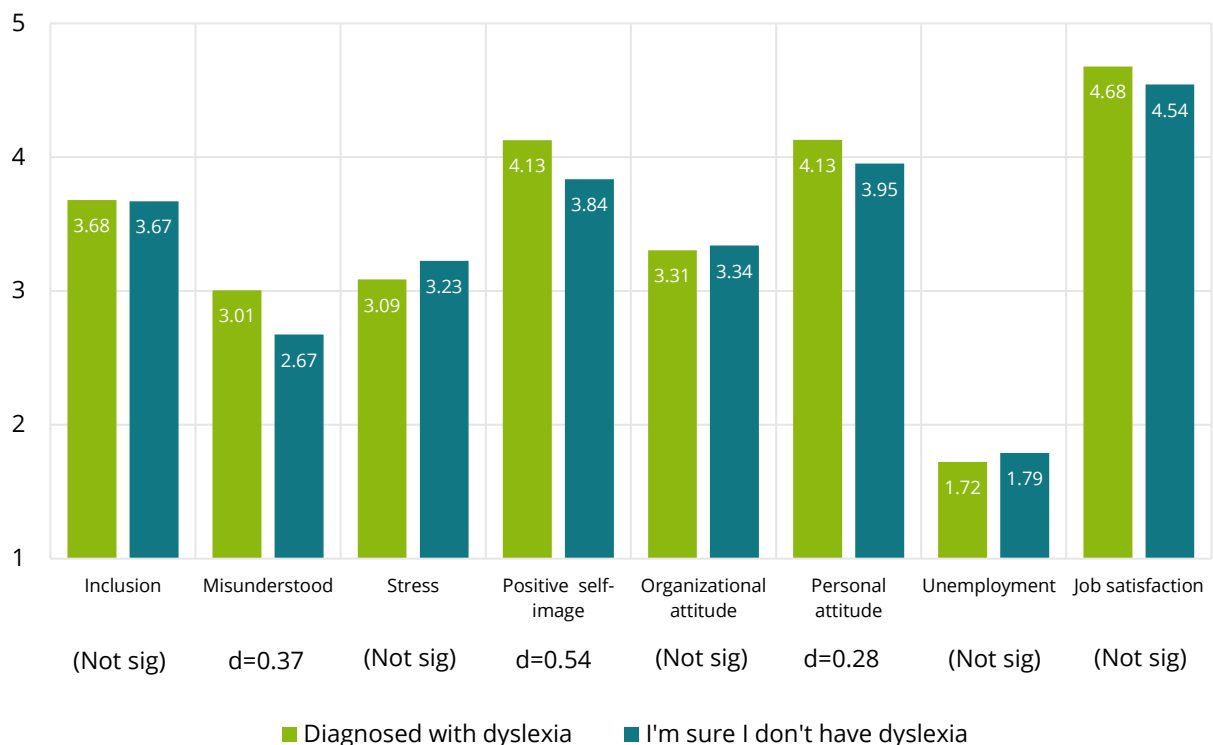
Correlation with dyslexia score (n=1,200 to 1,361)

| Inclusion | Misunderstood | Stress | Positive self image | Org attitude | ND attitude | Unemployment | Job satisfact. |
|-----------|---------------|--------|---------------------|--------------|--------------------|--------------------|---------------------|
| -.076** | .164** | .077** | .026 ^{NS} | -.113** | .005 ^{NS} | .033 ^{NS} | -.024 ^{NS} |

NS: not significant. ** significant at the .001 level.

Those scoring towards the dyslexia diagnosis end of the scale felt somewhat more misunderstood and had a somewhat less positive view of their organization's attitude to neurodivergence. There was a very weak but statistically significant tendency to feel slightly less included and more stressed.

Difference between those diagnosed with dyslexia and those sure they did not have dyslexia



Compared with those sure that they did not have dyslexia, those diagnosed felt more misunderstood, but also had a more positive self-image and were somewhat more likely to have a positive attitude to neurodivergence. Effect sizes (Cohen’s d) ranged from small (0.28) to medium (0.54). In contrast to the correlational data, there was no significant difference in terms of inclusion or stress.

How dyslexia relates to the neurodivergent experience scales

As with the workplace experience scales, the relationship between dyslexia and the neurodivergent experience scales were investigated in two different ways. Scores on the dyslexia scale were correlated with scores on the experience scales and an independent t-test was carried out on the mean score on each of the scales between those diagnosed with dyslexia and those sure that they did not have dyslexia.

The results are shown below.

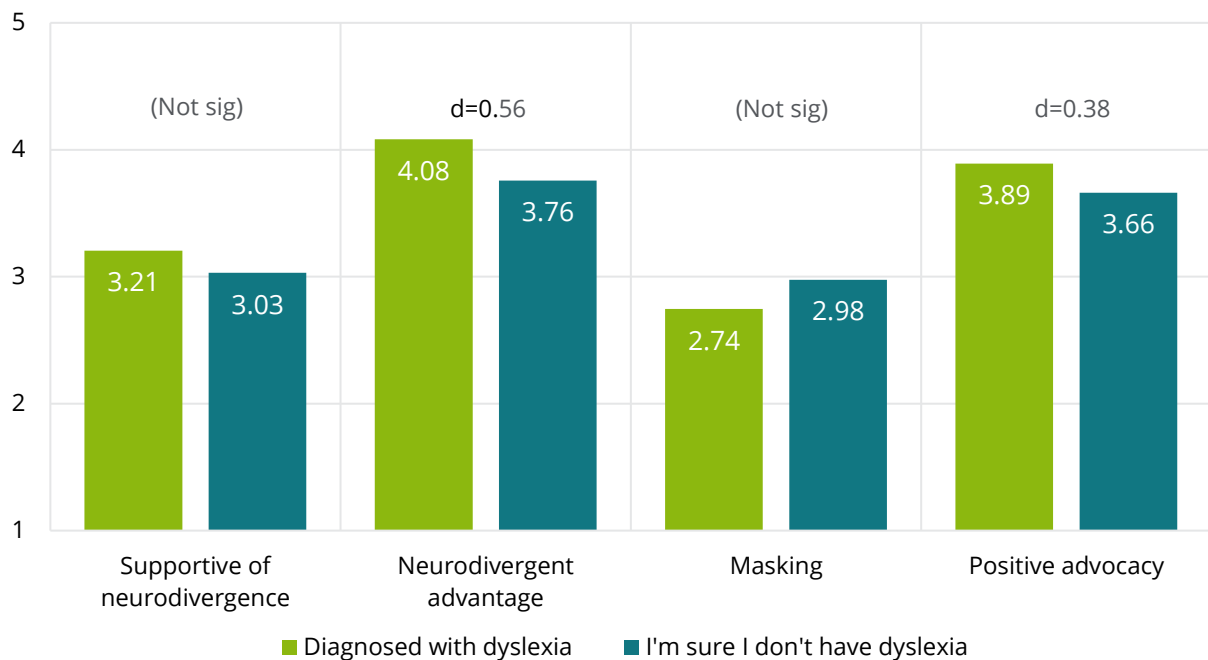
Correlation with dyslexia score

| Supportive of neurodivergence | Neurodivergent advantage | Masking | Positive advocacy |
|-------------------------------|--------------------------|--------------------|--------------------|
| -0.012 ^{NS} | .074* | .053 ^{NS} | .034 ^{NS} |

N= 898 to 914. *: significant at the 0.05 level. **: significant at the 0.01 level.

Those scoring towards the dyslexia diagnosis end of the scale were somewhat more likely to see their neurodivergence as helpful at work.

Differences between those diagnosed with dyslexia and those sure they did not have dyslexia



Compared with those sure that they did not have dyslexia, those diagnosed were somewhat more likely to feel that their condition conferred an advantage and to see themselves as supportive of neurodivergence or as an advocate. Effect sizes (Cohen’s d) were small to medium.

Specific strengths of people with dyslexia

The survey contained several items relating to areas that have been seen as specific strengths of people with neurodivergent conditions. The table below shows the correlation between each of these and the dyslexia diagnosis scale and the result of a t-test between those diagnosed with dyslexia and those sure that they did not have dyslexia.

| Survey item | r | t sig | Cohen d |
|---|----------------------|-------|---------|
| I am more creative than most people | 0.082** | .026 | .372 |
| I have been able to adapt or ‘craft’ my job to make the best use of my neurodiversity | 0.071* | .016 | .431 |
| My neurodiversity allows me to excel at aspects of my work | 0.071* | .014 | .440 |
| When I am doing something I really enjoy, I can focus on this for hours and hours | 0.069* | NS | - |
| I see my neurodiversity as my 'superpower' | 0.063 ^{NS} | .004 | .536 |
| I can do detailed work—but only if it interests me | 0.050 ^{NS} | NS | - |
| I have a lot of energy | 0.048 ^{NS} | .004 | .508 |
| I come up with lots of new ideas | 0.043 ^{NS} | .014 | .414 |
| I notice details that others miss | 0.013 ^{NS} | NS | - |
| I am an expert in my field | 0.009 ^{NS} | .038 | .335 |
| I’m good in a crisis | -0.003 ^{NS} | .024 | .373 |
| If I need to, I can get a lot done in a short time | -0.019 ^{NS} | NS | - |
| I usually follow the rules | -0.033 ^{NS} | .001 | -.574 |
| I am more productive than most of my co-workers | -0.038 ^{NS} | NS | - |

NS: not significant * significant at the .05 level ** significant at the .01 level

Those diagnosed with dyslexia were more likely to see their neurodiversity as their superpower, and that this allowed them to excel at aspects of their work and to craft their job, to say that they have a lot of energy, come up with lots of new ideas and are more creative, and somewhat more likely to say that they are an expert in their field. They were less likely to say that they usually follow the rules and were somewhat less likely to see themselves as good in a crisis.

Previous research into personality type and dyslexia

A literature search did not find any studies directly linking psychological type and dyslexia. Studies using FFM or 'big five' model (Gagliano, et al., 2014; Verguts, Callens, & Brysbaert, 2013) and the Eysenck Personality Questionnaire (Huang, et al., 2020; Richardson & Stein, 1993) found no personality differences in adult populations and a contradictory picture with children. This suggests that, in adults at least, psychological type and dyslexia are likely to be unrelated.

Personality type and dyslexia results from this study

The relationship between type and the respondents' self-ratings of dyslexia, using a scale from diagnosed with dyslexia to being sure that one did not have this condition, was analyzed in three ways:

- Using a chi-square analysis, whether there were differences in score distributions by type preference pairs.
- Using independent t-tests, whether there were mean differences by type preference pairs.
- Using a one-way analysis of variance, whether there were mean differences by whole type and favorite process.

A type table was not produced as only 29 people had been diagnosed with dyslexia.

A chi-square analysis showed no significant differences by any of the preference pairs, t-tests showed no significant differences by preference pair and a one-way analysis of variance showed no mean differences by whole type or favorite process. In summary, there was no evidence of any relationship between dyslexia and personality type.

How dyslexia relates to demographic factors

There was no significant relationship with any of the demographic factors.

Summary

- At 2%, the incidence of dyslexia diagnosis was similar to that in the population.
- Those diagnosed felt more misunderstood, but also had a more positive self-image and were somewhat more likely to have a positive attitude to neurodivergence. They were somewhat more likely to feel that their condition conferred an advantage and to see themselves as supportive of neurodivergence or as an advocate.
- Those diagnosed were more likely to see their neurodiversity as their superpower, and that this allowed them to excel at aspects of their work and to craft their job, to say that they have a lot of energy, come up with lots of new ideas and are more creative, and somewhat more likely to say that they are an expert in their field. They are less likely to say that they usually follow the rules and are somewhat less likely to see themselves as good in a crisis.
- There were no significant relationships with personality type or demographic factors.

Dyspraxia, dyscalculia, and Tourette’s syndrome

Dyspraxia, dyscalculia, and Tourette’s syndrome at work: an overview

Dyspraxia, also known as developmental co-ordination disorder, affects movement and co-ordination, such as tasks requiring balance, playing sports, or learning to drive a car. Dyspraxia can also affect fine motor skills, such as writing or using small objects.

People with dyspraxia have often had to overcome obstacles growing up, leading to a degree of resilience and determination. Having to carry out tasks in different ways means that they can often bring a new and creative view to problems, and they can be very empathetic and caring.

Dyscalculia is a specific and persistent difficulty in understanding numbers which can lead to a diverse range of difficulties with mathematics. Those with dyscalculia may also have trouble understanding shapes, distance, or volume, or have difficulty with time, directions, recalling schedules, sequences of events, or financial planning.

People with dyscalculia often see situations in a holistic way, leading to effective strategic decisions and creative problem-solving. They often have a great love of words and a high degree of practical ability.

Tourette's syndrome is a condition that causes a person to make involuntary sounds and movements called tics. These may be physical (such as blinking, eye rolling, jerking of the head or limbs, or touching objects and other people) or verbal (such as grunting, coughing, tongue clicking or saying random words and phrases). Although swearing is often depicted as a symptom, only a small percentage of people with Tourette’s syndrome do this.

Suppressing tics takes energy and can be tiring. There is, however, some evidence that learning to do this gives people with Tourette’s improved time processing and greater cognitive control (Vicario, et al., 2010). They may also have, on average, superior grammatical skills (Dye, Walenski, Mostofsky, & Ullman, 2016).

Incidence of dyspraxia, dyscalculia, and Tourette’s syndrome

The number of people diagnosed with each of these conditions in our sample was small—16 with dyspraxia, 12 with dyscalculia, and 11 with Tourette’s syndrome. A more limited set of analyses will be carried out than with other conditions.

| Self-rating | Dyspraxia | Dyscalculia | Tourette’s |
|---------------------------------|-----------|-------------|------------|
| Diagnosed as having condition | 1.2% | 0.9% | 0.8% |
| Believe I have condition | 1.5% | 2.9% | 0.7% |
| Think I may have condition | 2.6% | 4.0% | 1.0% |
| Do not think I have condition | 26.8% | 28.7% | 16.6% |
| Am sure I do not have condition | 68.0% | 63.5% | 80.9% |

Relation to workplace experience and attitude

For all three conditions, those further towards the diagnosis pole tended to feel more misunderstood, more stressed and less included, and had a less positive view of their organization’s attitude to neurodiversity. For dyspraxia and dyscalculia, they were also slightly more likely to have experienced unemployment and to have lower job satisfaction.

| | Dyspraxia | Dyscalculia | Tourette’s |
|-------------------------|--------------------|--------------------|---------------------|
| Inclusion | -.097** | -.100** | -.059* |
| Misunderstood | .194** | .195** | .119** |
| Stress | .146** | .151** | .052 ^{NS} |
| Positive self-image | .032 ^{NS} | .006 ^{NS} | .041 ^{NS} |
| Organizational attitude | -.170** | -.144** | -.085** |
| Personal ND attitude | .006 ^{NS} | .020 ^{NS} | -.037 ^{NS} |
| Unemployment | .063* | .091** | .053 ^{NS} |
| Job satisfaction | -.068* | -.061* | -.007 ^{NS} |

NS: not significant * significant at the .05 level ** significant at the .01 level

Relation to the neurodivergent experience scales

Respondents further towards the diagnosis pole on dyspraxia and dyscalculia were slightly more likely to mask their behavior, and those with dyspraxia tended to see their organization as slightly less supportive of their neurodivergence.

| | Dyspraxia | Dyscalculia | Tourette’s |
|-------------------------------|---------------------|---------------------|---------------------|
| Supportive of neurodivergence | -.081* | -.042 ^{NS} | -.027 ^{NS} |
| Neurodivergent advantage | -.016 ^{NS} | .038 ^{NS} | .039 ^{NS} |
| Masking | .106** | .088** | .047 ^{NS} |
| Positive advocacy | .026 ^{NS} | .028 ^{NS} | .001 ^{NS} |

NS: not significant * significant at the .05 level ** significant at the .01 level

Previous research into personality type

In a literature search, no research studies were found relating to dyscalculia or dyspraxia, but there has been a very limited amount of research with Tourette’s syndrome, suggesting that people with Tourette’s may appear to behave in a more introverted way. Eddy, Rickards, Critchley, & Cavanna (2013) found that individuals with Tourette’s had lower FFM Extraversion and Emotional Stability scores compared to controls, and Hui & Ge (1996) that children with Tourette’s syndrome showed a high degree of Introversion on the Eysenck Personality Questionnaire (EPQ). These results may be linked to the condition at a deeper level, or it may simply be that people with Tourette’s syndrome have been forced to control and limit their speech or social contacts.

Personality type: results from this study

For dyspraxia, individuals with a Judging preference were significantly more likely to think that they had this condition (though not to be diagnosed) compared with those with a Perceiving preference.

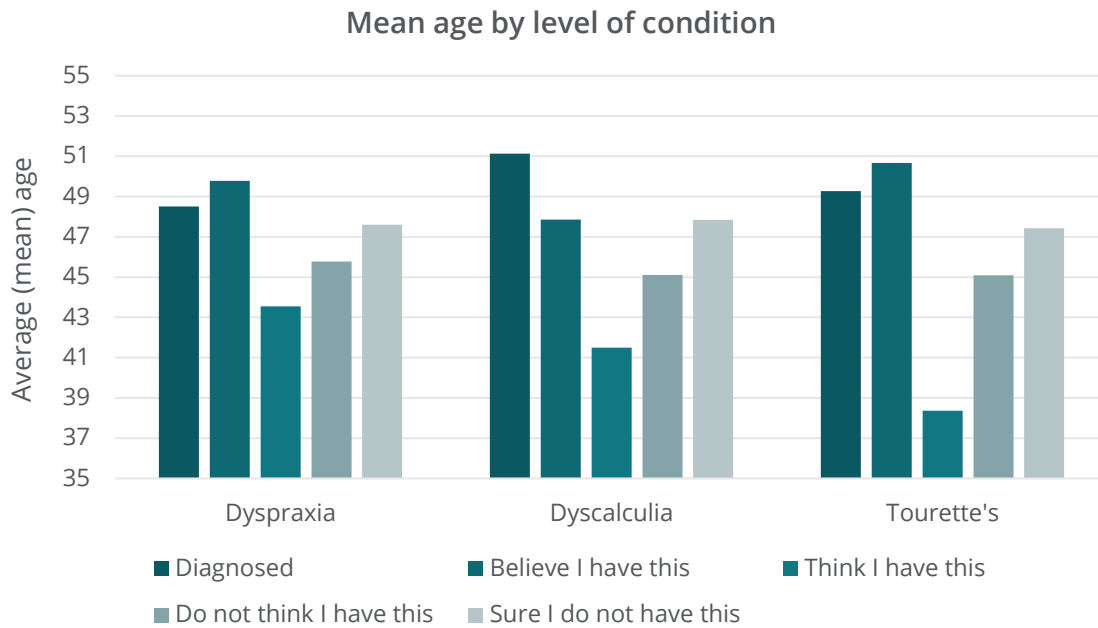
For Tourette’s syndrome, though numbers were small and should be treated with caution, individuals with an Introversion preference were more likely to have been diagnosed and were less likely to be sure that they did not have the condition.

| Level of condition | Dyspraxia | | Tourette’s | |
|--|---------------|-----|---------------|-----|
| | J | P | E | I |
| Diagnosed as having this condition | 53% | 47% | 18% | 82% |
| Not diagnosed, but I believe I have this | 60% | 40% | 67% | 33% |
| I think I may have this | 88% | 12% | 23% | 77% |
| I do not think I have this | 61% | 40% | 34% | 66% |
| I am sure I do not have this | 60% | 40% | 41% | 59% |
| Chi-square value and significance | 11.35, p=.023 | | 10.59, p=.032 | |

Demographic factors

There were no significant relationships with gender, job level, size of organization, or remote/hybrid/non-remote working style. However, all three conditions showed a curvilinear relationship⁵ with age. On average, those diagnosed or who believed they had the condition were the oldest, those who thought they had the condition the youngest, and those who were sure they did not have the condition the second oldest.

⁵ Based on a statistically significant chi-square test



Summary

- At 1.2% and 0.9%, the proportion of those diagnosed with dyspraxia or dyscalculia are lower than estimates for the population as a whole (around 5% to 6%). At 0.8%, the proportion of those with Tourette's syndrome is similar to estimates for the adult population (Tinker, Bitsko, Danielson, Newsome, & Kaminski, 2022).
- For all three conditions, those further towards the diagnosis pole tended to feel more misunderstood, more stressed and less included, and had a less positive view of their organization's attitude to neurodiversity. For dyspraxia and dyscalculia, they were also slightly more likely to have experienced unemployment and to have lower job satisfaction.
- Respondents further towards the diagnosis pole on dyspraxia and dyscalculia were slightly more likely to mask their behavior, and those with dyspraxia tended to see their organization as slightly less supportive of their neurodivergence.
- For dyspraxia, individuals with a Judging preference were significantly more likely to think that they had this condition (though not to be diagnosed) compared with those with a Perceiving preference.
- For Tourette's syndrome, though numbers were small and should be treated with caution, individuals with an Introversive preference were more likely to have been diagnosed and less likely to be sure that they did not have the condition.
- All three conditions showed a curvilinear relationship with age. On average, those diagnosed with or who believed they had the condition were the oldest, and those who thought they had the condition the youngest.

Views of the MBTI® assessment and MBTI® type

Overview

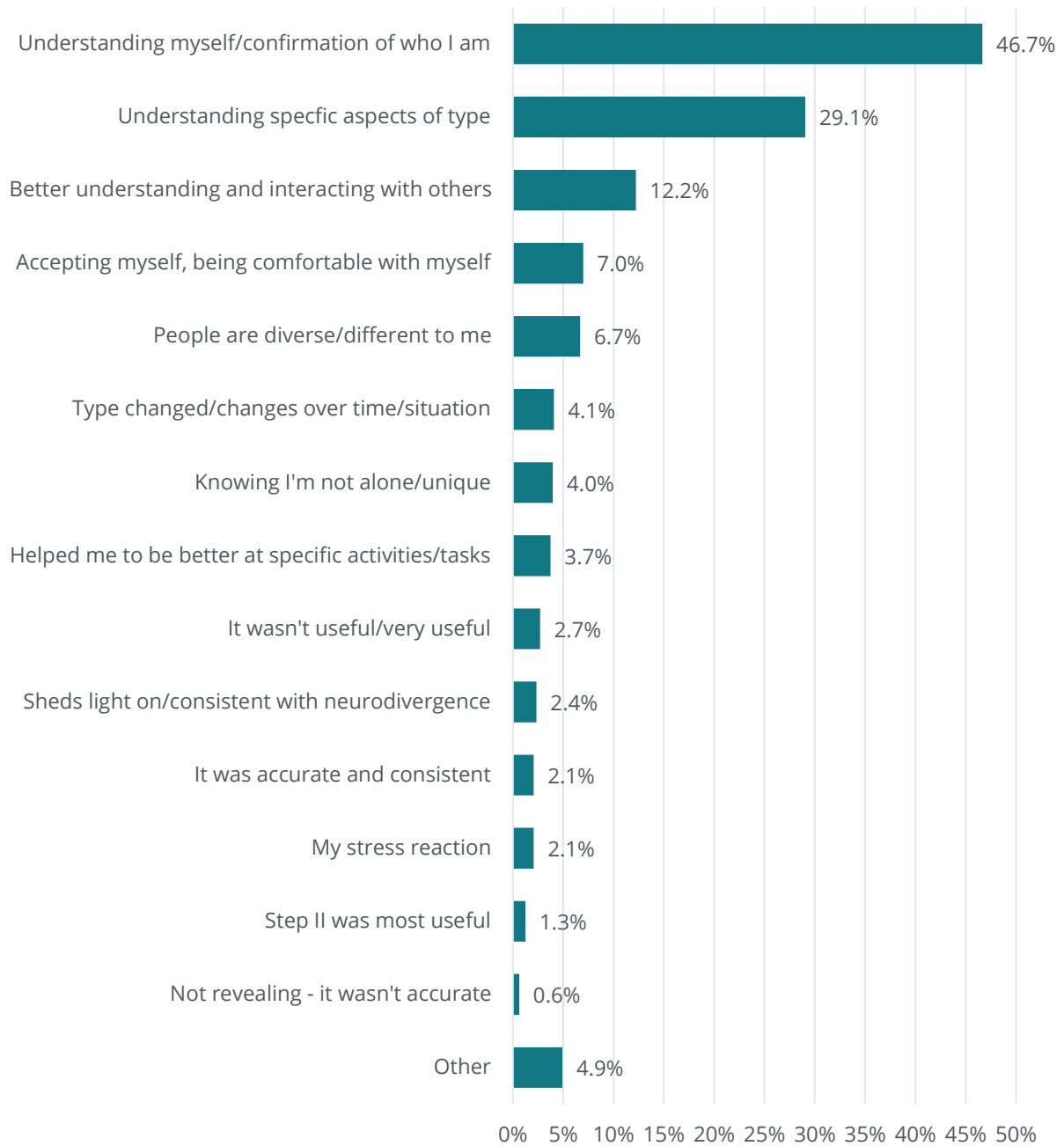
Personality questionnaires have been accused of “screening out neurodiversity” (Wiggleton-Little & Callendar, 2023). This could sometimes be the case when personality assessments are used to screen out job applicants or at other stages of recruitment and selection, though even in this context other hiring practices, such as traditional interviews, can have a more detrimental effect (Volpone, Avery, & Wayne, 2022). The same concerns should not, however, apply to type questionnaires, as these are only used in developmental contexts and not in selection. Indeed, the MBTI assessment has been used successfully with neurodivergent people. For example, Cadondon, Dawson, Carriere, Griffiths, & Gehricke (2023) showed that a program using the MBTI assessment alongside the *Strong Interest Inventory*® improved participation in jobs or further education as well as self-confidence in 20 autistic young adults.

To investigate the views of both neurodivergent and neurotypical people, all respondents who had previously taken the MBTI assessment and knew their type were asked the following three questions:

- What is the best or most revealing thing that you learned as a result of completing the MBTI assessment and finding out your type?
- In what ways, if any, has finding out your type helped you to understand yourself better?
- In what ways, if any, has finding out your type been counterproductive or less useful?

The questions were open-ended, but the answers to each fell into several categories or themes, as shown on the following pages. Note that as respondents’ answers could cover several categories, percentages will add up to more than 100%.

What is the best or most revealing thing that you learned as a result of completing the MBTI® assessment and finding out your type?



In response to the question, “What is the best or most revealing thing that you learned as a result of completing the MBTI assessment”, almost half of respondents talked about understanding themselves better, or finding some confirmation of who they were. 29% talked about how understanding specific areas of type had been useful or revealing. Just under 3% said that the MBTI had not been useful, and less than 1% said that it wasn't very accurate.

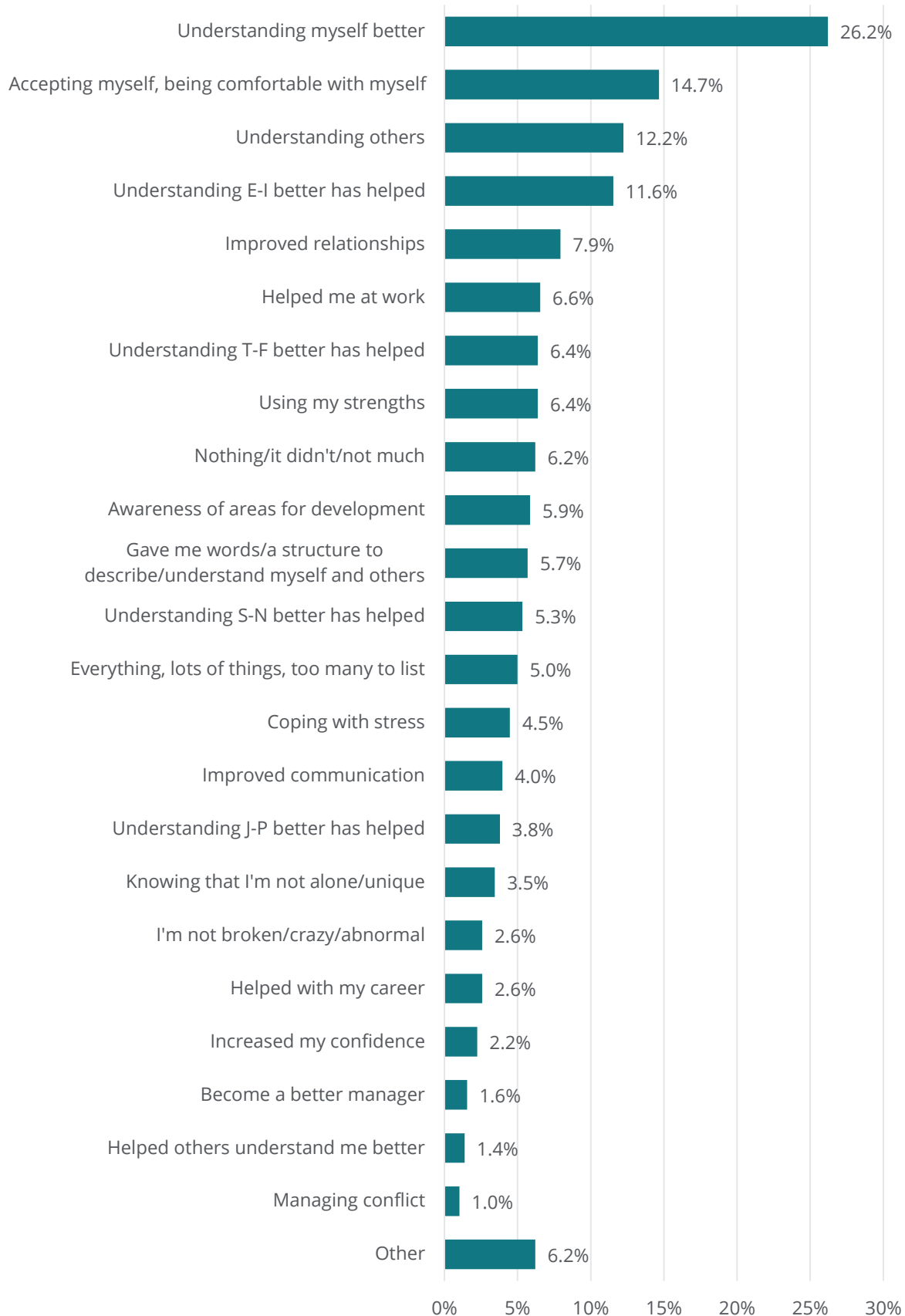
2.4% said that it added to their knowledge of their neurodivergence. Comments under this heading included:

- *An autistic with INFJ is not surprising.*

- *It explained my brain to me and helped me lean more into the positives than focus on my perceived "deficits" or normal things I just was not able to do.*
- *I have preferences that I masked at work to be successful in my leadership role (I am a retired trainer, coach and HR professional).*
- *Demonstrating that even despite my ADHD I am often the outlier or "different" one in leadership teams.*
- *That my job has a lot of influence as a neurodiverse person on why my type is sure in some categories and very sure in others. For me, my job is outward facing, and yet I need the balance of recharge—I am an E, but even I get too much peopling. I am a J, but I can be less of one on the spectrum if there is an aggressive J around and that relationship is important to me.*
- *Discovered ADHD and sought diagnosis.*
- *A lot of my "ADD" behavior is consistent with my MBTI type.*
- *It makes sense, but I would love to see more research about ADHD AuDHD impact on personality type/ if certain neurodivergent diagnoses yield higher probability of certain personality types (like INTJ being intensely honest and observant).*
- *I love MBTI. I've been interested in MBTI for about 17 years now. I see MBTI as a great tool for personal growth. Especially for someone like me who's neurodiverse to understand myself, how to explain my feelings and thoughts to people who don't understand me as well as a social tool to understand people around me from people who are like minded people, understanding personality clashes (family / friends for example) and even a healing tool when it comes to people who have hurt me. Especially helping me heal having PTSD, I find it useful.*
- *That the healthier I am mentally, the more I test towards the center line of each personality trait. I've taken the test many times. When I'm really struggling, I become more introverted, more intuiting, more feeling, more judging. When I'm doing well, I start leaning towards the center.*
- *That my struggles recalling data wasn't due to a brain injury - and that it's ok to be introverted.*
- *I was surprised that I have changed from a strong J in the past to a P! I think that becoming a mom and navigating neurodiversity with myself and my children has been a catalyst for that change.*
- *It helped me utilise my decision making type and strengths - also understand my hyper focus.*
- *Being ESTJ with HSP is rare and can make one feel like they are on the border of being an introvert and an extrovert.*

On balance, neurodivergent people have found the MBTI approach useful.

In what ways, if any, has finding out your type helped you to understand yourself better?



Just over a quarter of respondents said that finding out their type had helped them to understand themselves better, either without further detail or in combination with other, different responses. Other frequent answers included greater self-acceptance and more understanding of others. Several respondents gave examples of how finding out about specific aspects of type had been useful, in particular Extraversion and Introversion.

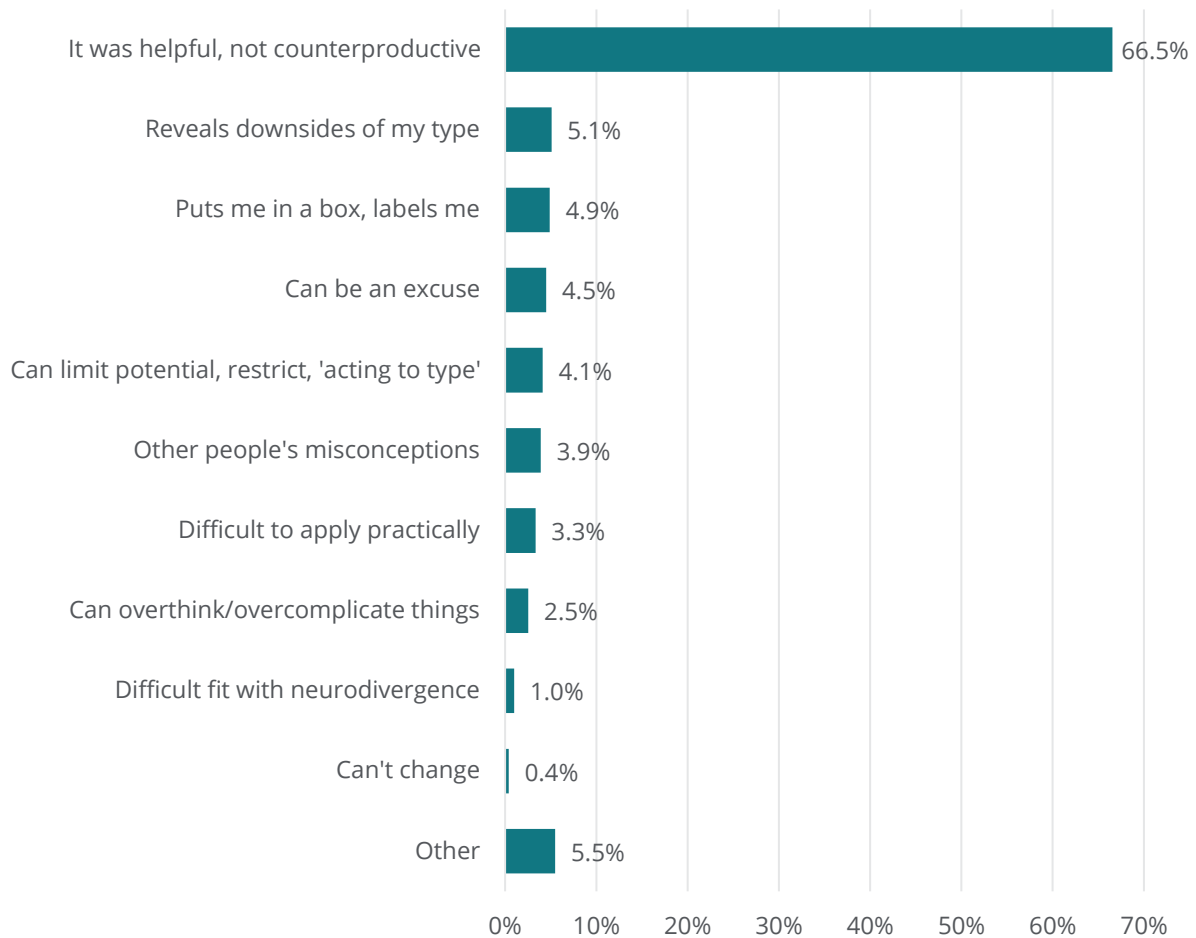
Six percent said that finding out their type had not helped them to understand themselves better or had not helped much. Most of these were from individuals who already felt they understood themselves very well (for example, "It just confirmed what I already knew", "None really. I was pretty sure who I was/am").

Just three statements explicitly referenced neurodivergence or neurodiversity:

- *I'm convinced that I have adapted my behaviour and preferences to become more comfortable with the neurodivergence that I now experience.*
- *It helps me better to understand and manage my intrusive thoughts in relation to my OCD.*
- *Received treatment for ADHD.*

Again, these statements imply that neurodivergent people have found the MBTI helpful.

In what ways, if any, has finding out your type been counterproductive or less useful?



Two-thirds of respondents felt that finding out their type had been helpful or useful, and not counterproductive. The most common negative response was from those who felt that they can become more aware of the possible downsides of their type preference, closely followed by being “put in a box”, though many of these respondents saw this as a possibility or a danger rather than an actuality.

One percent of respondents mentioned specific issues regarding neurodivergence:

- *The questions weren't suited to take into consideration ND. It was hard to answer as an autistic, as there didn't appear to be consideration of the ways in which autists process information and answer questions differently to NT people.*
- *My type is not interested in concrete things that are transactable. It's hard for me to do something I enjoy and get paid for it. It feels like I can have one or the other. Knowing my type hasn't helped solve that problem. I'm also on the ASD spectrum, which has a lot more to do with my challenges than being an INFJ. Learning about my ASD has helped me more with dealing with my challenges than learning about my type.*
- *I think my ADHD actually made it harder to determine my MBTI type. A lot of the questions on my (official) MBTI test were about planning and organizing, and it's hard to separate my personality from my ADHD symptoms. I have a very type-A personality, where I care about details and I like to feel prepared in advance, but my ADHD means I am still prone to making mistakes with details and I find it difficult to make plans for the day/week and stick with them. My official MBTI results showed really minimal preference for N/S and P/J, and I think the ADHD making it hard to answer some of those questions was the reason (I took the official MBTI in college, and was not diagnosed with ADHD until several years later).*
- *As a neurodivergent person, I feel I have difficulty fitting in and being able to use type with myself and others.*
- *My type has changed over the years, most notably when diagnosed neurodiverse and I started paying attention to what I need rather than masking.*

These statements show that some neurodivergent people did not find the MBTI approach as useful as others did.

Relationship with neurodivergence

The relationship between these themes and neurodivergence was investigated in two ways:

- Were those diagnosed with any condition more or less likely to mention a theme than those not diagnosed with any condition?
- Was there any relationship between levels of diagnosis of the more frequent conditions (ADHD, ASD, dyslexia, OCD) and mention of a theme?

Both questions were investigated using chi-square analysis.

Best or most revealing thing learned

Those diagnosed with any condition were significantly more likely than those not diagnosed to give comments relating to the following two themes:

- Knowing that I'm not alone or unique.
- Sheds light on/consistent with neurodivergence.

Those diagnosed with ADHD were more likely than others to mention:

- Type changing over time or according to the situation.
- Sheds light on/consistent with neurodivergence.

Those who believed they had ADHD, but who were not diagnosed, were more likely than others to mention:

- It was accurate and consistent.

Those diagnosed with ASD were more likely than others to mention:

- It wasn't useful.

Those diagnosed with OCD were more likely to mention:

- Knowing that I'm not alone or unique.

There were no significant relationships with levels of dyslexia diagnosis.

Ways of understanding yourself better

Those diagnosed with any condition were significantly less likely than those not diagnosed to give comments relating to the following two themes:

- Coping with stress.
- Helped me at work.

And more likely to mention:

- Nothing/it didn't/not much.

Those diagnosed with ADHD were more likely than others to mention:

- Awareness of areas for development.

Those diagnosed with ASD were more likely than others to mention:

- Nothing/it didn't/not much.

Those who thought they had ASD, but were not diagnosed, were more likely than others to mention:

- Awareness of areas for development.

Those who were diagnosed with, or who believed they had, dyslexia were more likely than others to mention:

- Helped others to understand me better.

Those diagnosed with OCD were more likely to mention:

- Knowing that I'm not alone or unique.

Those who were diagnosed with, or thought they had, OCD were more likely to mention:

- I'm not broken/crazy/abnormal.

Ways in which MBTI type was counterproductive or less useful

Those diagnosed with any condition were significantly more likely than those not diagnosed to give comments relating to the following three themes:

- Can overthink/overcomplicate things.
- Difficult to apply practically.
- Difficult fit with neurodivergence.

Those diagnosed with ADHD were more likely than others to mention:

- Can overthink/overcomplicate things.

Those who were diagnosed with, or believed they had, ADHD were more likely than others to mention:

- Difficult fit with neurodivergence.

And less likely to mention:

- It was helpful, not counterproductive (though 57% still said this).

Those diagnosed with, or who believed they had, ASD were more likely than others to mention:

- Difficult fit with neurodivergence.

Those diagnosed with OCD were more likely to mention:

- Reveals downsides of my type.

There were no significant relationships with levels of dyslexia diagnosis.

Relationship with neurodivergence: summary

Overall, these results suggest that in general neurodivergent individuals have found type and the MBTI assessment relevant and useful, though not always quite as useful as neurotypical individuals did. When asked about the best to most revealing thing they had learned, those diagnosed were more likely than others to put comments relating to *Knowing that I'm not alone or unique* or *Sheds light on/consistent with neurodivergence* in response to the first question. In response to "In what ways, if any, has finding out your type helped you to understand yourself better?" those diagnosed were more likely than others to say *Nothing or not much*. However, this only represented 10% of those diagnosed.

Personality differences

The table below shows significant differences with each of the type preference pairs, based on chi-square analysis. For example, respondents with an Introversion preference were significantly more likely to make a comment relating to the theme of *Knowing that I'm not alone or unique* than were those with an Extraversion preference, and those with a Feeling preference significantly more likely to talk about accepting or being comfortable with themselves than those with a Thinking preference. There were no personality differences in answers to the third question.

| Question | Theme | E-I | S-N | T-F | J-P |
|---|---|-----|-----|-----|-----|
| Best or most revealing thing that you learned | Accepting/being comfortable with myself | - | - | F | - |
| | Knowing that I'm not alone or unique | I | - | - | - |
| | Understanding specific areas of type | E | - | - | P |
| | It wasn't accurate | - | - | T | - |
| Ways of understanding yourself better | Accepting/being comfortable with myself | - | N | - | - |
| | Awareness of areas for development | E | - | - | - |
| | Understanding E-I better has helped | - | - | F | - |
| | Understanding J-P better has helped | I | - | - | P |
| | Managing conflict | - | S | - | - |

Demographic differences

The table below shows significant differences between males and females in the sample, based on chi-square analysis.

| Question | Theme | |
|--|---|-----------------------------|
| Best or most revealing thing that you learned | Type changes over time or situation | Men mention more than women |
| | It wasn't useful/very useful | Men mention more than women |
| | Step II was most useful | Women mention more than men |
| Ways of understanding yourself better | Accepting/being comfortable with myself | Women mention more than men |
| | Nothing/not much | Men mention more than women |
| Ways in which counterproductive or less useful | Reveals the downsides of my type | Women mention more than men |

There were also several age differences. For those themes where there was a significant age difference (based on an independent-samples t-test), the following table shows the average age for those who made a comment related to the theme and who did not, and the effect size (Cohen's d).

| Question | Theme | Mention | No mention | Cohen's d |
|--|---|---------|------------|-----------|
| Best or most revealing thing that you learned | Accepting/being comfortable with myself | 53.98 | 49.49 | .376 |
| Ways of understanding yourself better | Accepting/being comfortable with myself | 53.56 | 49.34 | .352 |
| | Awareness of areas for development | 45.82 | 50.23 | .366 |
| | Improved communication | 44.09 | 50.21 | .509 |
| Ways in which counterproductive or less useful | It was helpful, not counterproductive | 51.42 | 47.30 | .336 |
| | Reveals the downsides of my type | 44.77 | 50.33 | .450 |
| | Difficult to apply practically | 40.82 | 50.36 | .775 |

There were two relationships with job level:

- In response to the first question, supervisors/1st line managers were more likely than others to mention understanding themselves. Middle managers were less likely than others to mention this.
- In response to the second question, senior managers were more likely than others to mention becoming a better manager and less likely to mention increasing confidence.

Summary and recommendations

Summary of results

Incidence of neurodivergence

- Just over 25% of respondents had been diagnosed as having some form of neurodivergent condition. This may be an under-representation of the true number of neurodivergent people in the sample; depending on the precise question asked of them, between 34% and 42% of respondents considered themselves to be neurodivergent to at least some extent. This reflects a more general under-diagnosis of neurodivergence in the population (Doyle, 2024), and contradicts the view that conditions such as ADHD and ASD are being over-diagnosed.
- ADHD was, by some distance, the most common form of neurodivergence seen in this group. 16% had been diagnosed with this condition, and a further 13% believed that they had ADHD. ASD and OCD were the next most common.
- Most neurodivergent people had been diagnosed with multiple conditions. 349 people, 18% of the total and 70% of those with any diagnosis, had been diagnosed with more than one condition.

Neurodivergence and experience of the workplace

- On average, respondents were positive about the workplace, agreeing that they felt included and disagreeing that they felt misunderstood at work; over half were satisfied or very satisfied with their job. However, just under half felt stressed at work. Most felt that they and their organizations had a positive attitude to neurodiversity.
- People who saw themselves as neurodivergent were less positive about the workplace than others were. In general, they felt more misunderstood, more stressed and less included at work, had lower levels of job satisfaction, were less likely to believe that their organization was positive about neurodiversity, and felt that in general more attention should be paid to neurodiversity and neurodivergence. The same results applied to those who had been diagnosed with a neurodivergent condition.
- Those diagnosed with ASD felt the least included, most misunderstood, and (together with those diagnosed with OCD) the most stressed. They had the lowest average level of job satisfaction, were the least likely to see their organization as positive about neurodiversity and had the strongest personal views on neurodivergence.
- On average, those diagnosed with dyslexia felt just as included as those with no diagnosis, were just as likely to see their organization as positive about neurodiversity, had a similar level of job satisfaction and perceived workplace stress, and a somewhat higher level of positive self-image. They felt more misunderstood than those with no diagnosis, but less misunderstood than those with any other diagnosis.
- Those who believed themselves to be neurodivergent tended to agree that this could help them at work. Over half agreed or strongly agreed that their neurodiversity allowed them to excel at aspects of their work and that they had been able to adapt or 'craft' their job. However, almost half felt that their neurodivergence had caused them problems at work, and that they had to disguise or 'mask' their natural behavior at work, though only 16% said that they would never let anyone at work know about their neurodivergent condition. They themselves tended to have a positive view of neurodivergence, but only

around a quarter agreed or strongly agreed that their manager, their co-workers, or their organization were supportive of their neurodiversity.

- Those who felt their organization was supportive of neurodiversity had significantly higher levels of job satisfaction. Those who felt that they had to hide or mask their neurodivergence had significantly lower levels. Those who felt that their neurodivergence conferred some advantage had somewhat higher levels of job satisfaction.
- The more positive an individual was that they had ADHD or ASD, and the more conditions they had been diagnosed with or believed that they had, then the less supportive they felt their organization was, and the more likely they were to think that being neurodivergent was an advantage, to hide or mask their behavior, and to be an advocate for neurodivergence. The relationship with masking was especially strong for those with ASD.
- Those diagnosed with ADHD were much more likely to say that their neurodiversity allowed them to excel at aspects of their work, to say that they can do detailed work if it interests them, and that they can focus on a task that they really enjoy for hours and hours. They were more likely to say that they come up with lots of new ideas, are more creative than most people, have been able to craft or adapt their job, notice details that others miss, and see their neurodiversity as their superpower. They were less likely to say that they have a lot of energy or that they are more productive than their co-workers.
- Those diagnosed with ASD were much more likely so say that their neurodiversity allowed them to excel at aspects of their work and that they can focus on a task that they really enjoy for hours and hours, and more likely to say that they can do detailed work if it interests them, that they notice details that others miss, and that they are more creative than most people. They were somewhat more likely to say that they come up with lots of new ideas and see their neurodiversity as their superpower. They were less likely to say that they have a lot of energy or that they are good in a crisis.
- Those diagnosed with OCD were more likely so say that their neurodiversity allowed them to excel at aspects of their work, that they notice details that others miss, and that they have been able to adapt or craft their job. They were somewhat more likely to say that when they are doing something they really enjoy, they can focus on this for hours and hours. They were less likely to say that they were an expert in their field or that they have a lot of energy.
- Those diagnosed with dyslexia were more likely to see their neurodiversity as their superpower, and that this allowed them to excel at aspects of their work, to craft their job, to say that they have a lot of energy, to come up with lots of new ideas and are more creative, and somewhat more likely to say that they are an expert in their field. They are less likely to say that they usually follow the rules and are somewhat less likely to see themselves as good in a crisis.

Relationships between neurodivergence and personality type

One aim of this research was to investigate the relationship between personality type and neurodivergence. It is important however to emphasize that the type model and the neurodiversity paradigm are different ways to understand people. Some forms of neurodivergence will not show any relationship with MBTI type at all, and even when research suggests that a relationship exists, neither will entirely explain the other. To some extent, questions like, “Is there an autistic MBTI type” are no different from questions like “Are all tall people the same type”. Nevertheless, understanding these relationships will be useful. Both our

type preferences and our neurodiversity contribute to our behavior and to the ways in which we see the world. It will be useful for MBTI practitioners to know where these overlaps are, with the understanding that these are relationships, not causes. They are correlations that will not hold for every individual and that do not signify cause and effect.

With these caveats in mind, the results show that:

- Overall, those with an Introversion or an Intuition preference were more likely to have received a neurodivergent diagnosis of some kind than those with an Extraversion or a Sensing preference. In terms of whole type, those with preferences for INFJ, INTP, or INFP were the most likely to have received a diagnosis, those with preferences for ESTJ the least. In this context, it is interesting that the behaviors associated with E, S, T, and J have historically been seen more positively by Western society.
- In line with previous research, those with preferences for Perceiving and for Intuition were the most likely to be diagnosed with ADHD, to see themselves as having ADHD, or to display behaviors typical of ADHD. However, in the current study, Feeling also had a significant, though smaller, impact. Those with a Feeling preference were somewhat more likely to be diagnosed with or see themselves as having ADHD than those with a Thinking preference, and somewhat more likely to be flagged by the checklist. 23% of those with Introverted Feeling as their favorite process had been diagnosed with ADHD, 20% of those with Introverted Thinking, and 19% of those with Extraverted Intuition. Only 11% of those with Extraverted Thinking had been diagnosed. The individual type most likely to be diagnosed was INFP.
- Those diagnosed with, or who believed or thought they had autism spectrum disorder, were much more likely to have preferences for Introversion than for Extraversion. Of course, this should not be taken as meaning that most Introverts have ASD. Only 8% of those with an Introversion preference had been diagnosed with ASD (compared with 3% of those with an Extraversion preference). The individual type most likely to be diagnosed was ISTJ, though this only represented 11% of those with this preference.
- Those diagnosed with, or who believed or thought they had obsessive-compulsive disorder, were more likely to have preferences for Introversion than those who did not think or who were sure they did not have the condition. Those with a Perceiving preference were more likely to be sure that they did *not* have OCD than those with a Judging preference. Overall, those with an Introversion preference were more likely to have been diagnosed with OCD. Those with Introversion and to some extent Judging preferences were the most likely to see themselves as having OCD.
- Those with a Judging preference were significantly more likely to think that they had dyspraxia (though not to be diagnosed) compared with those with a Perceiving preference.
- For Tourette's syndrome, though numbers were small and should be treated with caution, individuals with an Introversion preference were more likely to have been diagnosed and less likely to be sure that they did not have the condition.
- Dyslexia and dyscalculia did not show any significant relationships with personality type.

Relationships between neurodivergence and gender

- Women were somewhat more likely than men to have had a diagnosis of some sort (27% compared with 23%).
- They were somewhat more likely than men to have been diagnosed as having ADHD and were more likely to be identified by the checklist as potentially having ADHD. This contrasts with previous research, which has tended to show a greater prevalence of ADHD amongst men.
- Men were somewhat more likely than women to have been diagnosed as having ASD, but women were more likely than men to say they believed they had ASD. This could indicate a tendency to under-diagnose women and girls with ASD, and/or over-diagnose men and boys.
- There was no significant relationship with OCD, dyslexia, dyscalculia, or Tourette's syndrome.

Relationships between neurodivergence and other demographic factors

- Those who had received a diagnosis of some sort were on average slightly younger than those who had not and were less likely to be a manager. There was no significant relationship with degree of remote working or organization size.
- Younger people were also more likely to report as having ADHD. On average, those identified by the checklist as potentially having ADHD were 5 years younger than those not. The mean age for those diagnosed was just under 7 years lower than that of those who were sure they did not have ADHD. Other research has also found that reported ADHD declines with age. None of the measures of ADHD showed a significant relationship with degree of remote working, job level, or organization size.
- Managers were less likely to have or think they have ASD than more junior staff. There were no other demographic differences.
- Those diagnosed with OCD were on average younger than others. There was no significant relationship with gender, job level, degree of remote working, or organization size.
- There were no significant relationships with dyslexia.
- The degree of dyscalculia, dyspraxia, and Tourette's syndrome all showed a curvilinear relationship with age. On average, those diagnosed with or who believed they had the condition were the oldest, those who thought they had the condition the youngest, and those who were sure or who did not think they had the condition in between in age. There were no other demographic differences.

Views of the MBTI® assessment and MBTI® type

- In response to the question, "What is the best or most revealing thing that you learned as a result of completing the MBTI assessment", almost half of respondents talked about understanding themselves better, or finding some confirmation of who they were. 29% talked about how understanding specific areas of type had been useful or revealing. Just under 3% said that the MBTI had not been useful, and less than 1% said that it wasn't very accurate. 2.4% said that it added to their knowledge of their neurodivergence.

- In response to the question, “In what ways, if any, has finding out your type helped you to understand yourself better”, just over a quarter of respondents said that finding out their type had helped them to understand themselves better, either without further detail or in combination with other, different responses. Other frequent answers included greater self-acceptance and more understanding of others. Several respondents gave examples of how finding out about specific aspects of type had been useful, in particular Extraversion and Introversion.
- Six percent said that finding out their type had not helped them to understand themselves better or had not helped much. Most of these were from individuals who already felt they understood themselves very well (for example, “It just confirmed what I already knew”, “None really. I was pretty sure who I was/am”).
- In response to the question, “In what ways, if any, has finding out your type been counterproductive or less useful”, two-thirds of respondents said that finding out their type had been helpful or useful, and not counterproductive. The most common negative response was from those who felt that they can become more aware of the possible downsides of their type preference, closely followed by being “put in a box”, though many of these respondents saw this as a possibility or a danger rather than an actuality.
- Overall, the results suggest that in general neurodivergent individuals have found type and the MBTI assessment relevant and useful, though not always quite as useful as neurotypical individuals did. When asked about the best to most revealing thing they had learnt, those diagnosed were more likely than others to put comments relating to the theme of *Knowing that I’m not alone or unique* or *Sheds light on/consistent with neurodivergence* in response to the first question. In response to “In what ways, if any, has finding out your type helped you to understand yourself better?” those diagnosed were more likely than others to say *Nothing or not much*. However, this only represented 10% of those diagnosed, compared with 28% whose answers related to *Understanding myself better*, and 61% who in response to the third question said that completing the MBTI was useful, not counterproductive,

Recommendations

- The results of this study suggest that neurodivergence may be under-diagnosed. Just over 25% of respondents had been diagnosed as having some form of neurodivergent condition, but between 34% and 42% of respondents considered themselves to be neurodivergent to at least some extent. Organizations should be aware that their employees might show a greater range of neurodiversity than they may think, and that many people may have multiple forms of neurodivergence.
- On average, neurodivergent people felt less accepted and supported at work than neurotypical people. Only around a quarter agreed or strongly agreed that their manager, their co-workers or their organization was supportive of their neurodivergence. Just 57% of those diagnosed with any condition agreed or strongly agreed that they felt accepted by their co-workers, compared with 78% of those not diagnosed. There is a case for education and training of the wider workforce, and in particular managers, to allow neurodivergent people to feel better supported. Two-thirds of neurodivergent people felt that their organization should do more to educate employees about neurodiversity, and just over half that people at work often misunderstood their behaviors or actions.

- There is also a need for organizations to be more open to neurodivergent people and to different ways of working and acting. 67% had changed their behavior to fit in at work and 63% that they masked their behavior. Only 47% felt that they could be their authentic self at work, and 45% said that they didn't feel that they could talk about their neurodivergence at work.
- Traditionally, development programs have looked to identify development needs and apply training or other interventions to bring individuals up to an acceptable level across the board. This approach may work less well for neurodivergent people. Here an approach that allows individuals to make the most of their strengths may pay dividends. Respondents who had been able to adapt to 'craft' their job to make the best use of their neurodiversity had higher job satisfaction, felt more included, were less stressed, and saw their behavior as less likely to be misunderstood or cause them problems.
- Men were somewhat more likely than women to have been diagnosed as having autistic spectrum disorder, but women were more likely than men to say they believed they had the condition. In total, slightly more women than men had been diagnosed with ASD or believed that they had the condition, and the percentages tip further towards women if those who think they have ASD are included. This could indicate a tendency to under-diagnose women and girls with ASD, and/or over-diagnose men and boys, something that has been suggested by previous research. Organizations, HR specialists, and managers should be aware that women as well as men can have ASD.
- Overall, those with an Introversion or an Intuition preference were more likely to have received a neurodivergent diagnosis of some kind than those with an Extraversion or a Sensing preference, and several relationships were found between type and specific conditions. However, type should not be used to 'explain away' or gloss over neurodivergence. Taking both into account can help people to understand themselves more fully.
- In general, neurodivergent individuals found type and the MBTI assessment relevant and useful, though not always quite as useful as neurotypical individuals did. However, many neurodivergent people found MBTI feedback extremely useful, especially in helping them to understand themselves better. In general, there is no reason why the MBTI assessment should not be used with neurodivergent individuals, for several reasons:
 - The MBTI approach provides a positive framework for thinking about differences, and therefore, neurodivergence.
 - The MBTI framework can also help non-neurodiverse clients to understand the positive benefits of the ways in which others are different. By understanding and valuing personality differences, individuals can learn to understand and value other differences too.
 - One specific area where the MBTI assessment is useful is in understanding the value of different work styles. This can make it easier for managers to allow neurodivergent people to craft their jobs in a way that works for them.
 - Using the MBTI assessment in team development helps team members to see the value of other points of view and is likely to reduce group think and marginalization. As neurodiverse people have been more likely to be marginalized in this way, MBTI-led team development is likely to be beneficial.
 - Some forms of neurodiversity are characterized in part by difficulty in understanding one's own behavior, and/or the behavior of others. The MBTI model can provide a straightforward framework to help with this.
 - One advantage that the MBTI assessment has over many other tools is the inclusion of the best-fit feedback process. Talking through someone's results and

helping them to decide for themselves what type fits them best is likely to lead to more productive conversations and reflection than assessments that merely present the results.

- Some comments point up specific issues to be aware of when using the MBTI assessment with neurodivergent people. These are described in more detail in the guidelines for practitioners available from The Myers-Briggs Company. In summary, however:
 - Communicate clearly. Use short, concise sentences and avoid ambiguous statements, metaphors, or unusual phrases.
 - Be very clear about the purpose, the process, and that the person completing the assessment and having feedback is in control.
 - Spend time before administration and feedback establishing rapport and dealing with any questions or concerns.
 - Have a distraction-free, quiet environment.
 - In both administration and feedback, consider reading aloud.
 - Take your time in both administration and feedback and allow extra time.
 - Be prepared to add context or other explanation if needed; be available for questions.
 - In feedback, don't assume, always ask "why".
 - Be aware of masking.

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Appendices

Appendix A: Psychological type and the MBTI® assessment

The Myers-Briggs Type Indicator® (MBTI®) assessment is probably the most widely used personality questionnaire in the world. It does not measure our ability or skill, or how much of a particular personality trait we have. It looks at whether we have an in-built preference to do things in one way or in another way. It looks at four pairs of preferences:

| Opposite ways to direct and receive energy | |
|--|--|
| Extraversion (E) | Introversion (I) |
| Gets energy from the outer world of people and experiences | Gets energy from the inner world of reflections and thoughts |
| Focuses energy and attention outwards in action | Focuses energy and attention inwards in reflection |
| Opposite ways to take in information | |
| Sensing (S) | Intuition (N) |
| Prefers real information coming from five senses | Prefers information coming from associations |
| Focuses on what is real | Focuses on possibilities and what might be |
| Opposite ways to decide and come to conclusions | |
| Thinking (T) | Feeling (F) |
| Steps out of situations to analyze them dispassionately | Steps into situations to weigh human values and motives |
| Prefers to make decisions on the basis of objective logic | Prefers to make decisions on the basis of values |
| Opposite ways to approach the outside world | |
| Judging (J) | Perceiving (P) |
| Prefers to live life in a planned and organized manner | Prefers to live life in a spontaneous and adaptable way |
| Enjoys coming to closure and making a decision | Enjoys keeping options open |

For convenience, these pairs of preferences, or pairs of opposites, are often called type preference pairs. So, we might talk about the E-I preference pair, the S-N preference pair, the T-F preference pair, or the J-P preference pair.

In each pair, we will have a preference for one type. So, for example, we might prefer E rather than I, and spend much more of our time and energy doing things typical of Extraverts, and little of our time or attention on activities and ways of doing things typical of Introverts. Or we might prefer I rather than E. Whatever our preference, however, we will spend some time and carry out some activities associated with the other side. The same applies to S-N, T-F, and J-P. In each

case we will have a preference, but we will visit the other side from time to time. We will use all eight modes at least some of the time.

The MBTI assessment is a method for helping individuals to work out what their type preferences are, so you may hear people say things like "I'm an ESTJ" or "I've got preferences for INFP" or "I'm definitely a Perceiving type". They can then use this knowledge to help them with their development as human beings. The four letters can be combined to give 16 different types, but this four-letter type formula should not be used to 'put people in a box'. The MBTI instrument is used to open up possibilities, not to limit individuals.

The 16 types are often illustrated using a *type table*, as shown here. Each of these 16 types has a particular characteristic taking the lead in directing their personality—what's often called their favorite process.

So, for ISTJ and ISFJ for example, Introverted Sensing (Sⁱ) leads. Central to their personality is the importance of lived experience and drawing on their rich store of memories.

For ESTP and ESFP, it is Extraverted Sensing (S^e)—experiencing the moment and the here and now with all their senses—that leads, and so on for all 16 types. See the table below.



| Types | Favorite process |
|------------|---|
| ISTJ, ISFJ | Introverted Sensing (S ⁱ) |
| ESTP, ESFP | Extraverted Sensing (S ^e) |
| INFJ, INTJ | Introverted Intuition (N ⁱ) |
| ENTP, ENFP | Extraverted Intuition (N ^e) |
| ISTP, INTP | Introverted Thinking (T ⁱ) |
| ESTJ, ENTJ | Extraverted Thinking (T ^e) |
| ISFP, INFP | Introverted Feeling (F ⁱ) |
| ESFJ, ENFJ | Extraverted Feeling (F ^e) |