Gender differences in mental health prevalence in autism

Approximately 1 – 2% of the general population are diagnosed as autistic, with current gender ratios standing at 3:1 male:female (Loomes, Hull and Mandy, 2017). This ratio has decreased from earlier estimates of 12:1 male:female (Fombonne, 2003) largely due to increased recognition of girls and women as being on the autism spectrum (Gould & Ashton-Smith, 2011; Haney, 2016; Lai et al., 2015). Being autistic is a minority identity in a non-autistic majority world, and those who are non-male also face the experience of a minority identity in a society which is generally patriarchal (Miller, 2013). This means that autistic non-males are potentially subject to greater stressors, leading to higher rates of mental health issues, according to Multiple Minority Theory (Meyer, 1995; Botha and Frost, 2018).

There are a range of mental health conditions which occur in the general population – with anxiety and depression being most common, affecting between 3.8% and 25% of adults (Brody, Pratt and Hughes, 2013; Remes *et al.*, 2016) . Eating disorders (ED), although occurring at lower rates (approx. 1–6% of the population) (Smink, van Hoeken and Hoek, 2012; Micali *et al.*, 2013) are also relatively common, and are approximately 10 times more commonly diagnosed in women than men (Raevuori, Keski-Rahkonen and Hoek, 2014). EDs have a high level of co-occurrence with anxiety and/or depression, ranging from 9% to 71% of ED patients having a major mood or anxiety disorder in different studies (for reviews see: Godart *et al.*, 2007; Swinbourne and Touyz, 2007), and so any study of ED rates should also investigate these conditions.

It has long been recognised that autistic people are more likely to experience a range of mental health issues than non-autistic people (White *et al.*, 2009). Anxiety and depression are the most common mental health issues for those on the spectrum, as they are for non-autistic people, with up to 40% of autistic people having at least one anxiety disorder (van

Steensel, Bögels and Perrin, 2011) and similar numbers having clinical depression (Kim *et al.*, 2000). Difficulties around food also appear to be more common in autistic children than their non-autistic counterparts (Schreck, Williams and Smith, 2004), such as food selectivity and refusal (Cermak, Curtin and Bandini, 2010). While a range of underlying causes for these difficulties have been suggested, such as sensory sensitivities (Chistol *et al.*, 2018; Dovey, Kumari and Blissett, 2019), the eating behaviours of autistic adults have not been investigated in the same way. One review commented on the relative paucity of population-based research into EDs among autistic adults but found a number of case studies reporting unusual eating behaviour, including pica, rumination, and food refusal, to be common (Rastam, 2008). The only qualitative study of eating behaviour among autistic adults found that childhood behaviours continued into adulthood, especially in the areas of sensory sensitivity, medical or physical issues, and the impact of executive function challenges on eating, but that adults felt they had mostly developed strategies for managing these eating behaviours (Kinnaird *et al.*, 2019).

A link between autism and anorexia nervosa (AN) has long been theorised (Gillberg, 1985). Research has shown that up to 23% of women with AN meet clinical criterion for an autism diagnosis (Westwood, Mandy and Tchanturia, 2017), and other works have shown significant overlap between the cognitive profiles of the two conditions (Westwood and Tchanturia, 2017). There has been speculation that women with severe and treatment resistant AN may have underlying autism which has gone unrecognised (Oldershaw *et al.*, 2011), partly because there is a clinical focus on treating the immediate danger of AN rather than consideration of potential underlying autism, a condition more frequently seen in men (Gould, 2017) which therefore may not spring to mind in a female AN patient. However, previous research examining this potential shared aetiology has primarily investigated the presence of autistic traits among people with AN with a focus on women.

To date, however, there has been little work exploring whether there are gender differences in rates of mental health conditions within the autistic population. What work there is has focussed on a binary conception of gender – male and female (Worley and Matson, 2011; May, Cornish and Rinehart, 2014; Magiati *et al.*, 2016). There is growing evidence that autistic adults are more likely to be non-binary and non-heteronormative (Dewinter, De Graaf and Begeer, 2017) in terms of their gender identity. This means that they likely face unique life experiences and potentially are exposed to even higher rates of discrimination and difficulty than cisgender autistic people, following the 'Multiple Minority Theory' (Meyer, 1995). Multiple Minority Theory argues that those with a minority identity, such as being homosexual, experience more everyday stressors than those who are in the majority, and that these stressors are multiplied if you are a member of multiple minority groups, such as being both gay and black. Within this approach, being autistic can be seen as a form of minority identity, and so can being female, non-binary, trans, or LGBT+. However, in line with an update to this theory, these individuals are also potentially more resilient than those in the majority, as they have both the autism community and the LGBT+ community to draw on for support (Meyer, 2015). Despite this, there are known health inequalities among non-autistic non-binary people (Whitehead, 2017; Jones *et al.*, 2019) which are likely to also affect autistic people, who report extensive difficulties in accessing mental health support (Camm-Crosbie *et al.*, 2019; Crane *et al.*, 2019). It is therefore important to investigate the intersection of these minority identities regarding mental health.

This study sought to examine the rates at which anxiety, depression, and a range of EDs are reported among a large sample of autistic and non-autistic adults of all genders. Our hypotheses were:

1) Autistic people of all genders would report higher levels of anxiety and depression symptomatology than non-autistic people

2) Women and non-binary/trans people would report anxiety, depression, and all types of ED at higher rates than men, regardless of autism status
3) There would be positive correlations between autistic traits and anxiety, depression and ED symptomatology across both groups

Method

Participants

Nine hundred and forty-five people between 18 and 81 years old were included in the analysis, after the exclusion of 14 participants who reported being under 18 (being aged 18+ was an inclusion criteria) and 18 participants who reported being non-autistic but scored above cut-off on the AQ-28. Of these 945, 525 (55.50%) reported being autistic, and 420 (44.50%) reported no autism diagnosis. Non-binary and trans participants were combined into one NBT group for statistical validity, as otherwise the numbers involved in each group would have been too small to meaningfully include. Please see Table 1 for demographic information about each group.

Participants were recruited online through social media (Twitter, Facebook) and advertising on the King's College website and email circulars and were offered the chance to take part in a draw for one of 30 £10 Amazon vouchers as an incentive. The study was open between December 2017 and March 2018. Participants completed the study online, hosted on Qualtrics, at their own pace and in a place of their preference. An information sheet and consent form was the first page of the online questionnaire, detailing the content of the study, the expected length of time to complete, and participant rights such as the right to withdraw. The data was collected as part of a larger study, for which ethical approval was obtained from the King's Psychiatry, Nursing and Midwifery Research Ethics Committee (LRS-17/18-5292).

Measures

Demographics: Participants completed a demographics questionnaire, including age, self-defined gender, height, weight, ethnicity, education level and employment status. Participants were also asked whether they had a diagnosis of autism, any physical or mental health diagnosis, and/or a diagnosed ED, and if so, what that diagnosis was.

AQ: The Autism Quotient-28 item version (Hoekstra *et al.*, 2011) is a self-report screening questionnaire assessing the presence and level of autism symptomatology. Answers are given on a Likert scale from 'Very accurate' to 'Very inaccurate' and are then scored 1 or 0 depending on the direction of the question. Higher scores reflect more autistic symptomatology. The abbreviated version of this measure was used in this study in order to reduce participant burden, but it still has a high level of reliability (α=.77-.86=).

HADS: The Hospital Anxiety and Depression Scale (Zigmond and Snaith, 1983) is a 14-item self-report questionnaire assessing both anxiety and depression symptomatology. The HADS creates two subscales, HADS-Anxiety (HADS-A) and HADS-Depression (HADS-D), each with seven items. It has been widely used in a variety of populations, and has been validated for use with autistic people (Uljarević *et al.*, 2018). Higher scores reflect higher levels of anxiety and depression symptomatology.

EDE-Q: The Eating Disorder Examination Self-Report Questionnaire (Fairburn and Beglin, 1994) is a 36-item self-report questionnaire assessing ED psychopathology over the past 28 days. Participants score the frequency of their behaviours or thoughts from '0 days' to 'Every day'. Higher scores reflect greater ED symptomatology.

INSERT TABLE ONE ABOUT HERE

Data Analysis

All data analyses were conducted with R (R Core Team, 2018). Group differences in demographic and clinical characteristics were explored with t-tests. Prior to conducting regression analyses, assumptions were checked. Where assumptions for a linear regression analyses were not met, impact of gender and autism status on ED, anxiety, and depression symptomatology were investigated using robust multiple regression from the MASS package (rlm()) (Venables and Ripley, 2002). The rlm() function conducts a robust M-estimator with Huber's weights to reduce the impact of outliers and heteroscedasticity (Huber and Ronchetti, 1981). Where significant main effects or interactions were present, post-hoc pairwise comparisons were conducted. All statistics from post-hoc tests were adjusted for multiple comparisons using Boferroni correction. Differences between the autistic and non-autistic groups in the number of participants reporting a diagnosis of an eating disorder were investigated using robust binomial regression from the robustbase package (glmrob()) (Maechler *et al*., 2019). Correlations between AQ-28 score and ED, anxiety, and depression symptomatology were explored within the autistic and non-autistic groups using Spearman test. Significance level was set at $p< 0.05$.

Results

Demographics

Participants were not matched on age, $t(911)=-2.38$, $p=0.02$, with autistic participants being older than non-autistic. Participants were also not matched on AQ score, with those who reported being autistic scoring significantly higher than those who reported being non-autistic, $t(680)=-34.02$, $p<0.001$, supporting their self-reported diagnoses. People who reported having anxiety, depression and a current or past ED scored significantly higher on the relevant questionnaires, supporting their self-reported diagnoses (all $ps<0.01$). Demographic characteristics of the sample can be seen in Table 1.

INSERT TABLE TWO ABOUT HERE

Anxiety

The data did not meet the assumptions for linear multiple regression (Supplementary Figure 1) and robust regression was conducted. The robust multiple regression revealed a significant effect of autism status (Table 2; Figure 1A) such that autistic participants reported significantly more anxiety symptoms on the HADS than the non-autistic participants. There was also a significant effect of gender. Post-hoc pairwise comparisons showed that female participants reported experiencing significantly more anxiety than male participants regardless of autism status (Z=3.30, p=0.003). Male participants also reported significantly less anxiety than NBT participants regardless of autism status (Z=-3.25, p=0.003). There was no significant difference between female and NBT participants in anxiety (Z=-1.32, p=0.566). There was no significant autism status by gender interaction.

Correlation analyses found a a significant positive correlation between HADS anxiety and AQ-28 scores among both the autistic (ρ=0.16, p<0.001) and non-autistic participants (ρ=0.40, p< 0.001) (Figure 2A, Figure 2B).

Depression

The data did not meet the assumptions for linear multiple regression (Supplementary Figure 2) and robust regression was conducted. The robust multiple regression revealed a significant effect of autism status (Table 2; Figure 1B). Autistic participants reported significantly more depression symptoms on the HADS than non-autistic participants. There was also a significant interaction between autism status and gender. Post-hoc pairwise comparisons showed that non-autistic females and males reported significantly less depression that non-autistic NBT participants (Z=-3.08, p=0.006 and Z=-2.59, p=0.029

respectively). There were no significant differences in depression scores between non-autistic female and non-autistic male participants (Z=-0.27, p=1.00). There were also no significant differences between autistic female and autistic male participants (Z=0.76, p=1.00), autistic female and autistic NBT participants (Z=1.59, p=0.335) or autistic male and autistic NBT participants (Z=0.39, p=1.00).

Correlations analysis found a significant positive relationship between HADS depression and AQ-28 scores in both autistic (ρ=0.21, p< 0.001) and non-autistic groups (ρ=0.48, p< 0.001) (Figure 2C, Figure 2D).

Eating Disorders

The data did not meet the assumptions for linear multiple regression (Supplementary Figure 3) and robust regression was conducted. The robust multiple regression revealed a significant effect of autism status (Table 2; Figure 1C). Autistic participants reported significantly more ED symptoms on the EDEQ than non-autistic participants. There was also a significant effect of gender. Post-hoc pairwise comparisons showed that female participants reported significantly more ED symptoms than male participants (Z=3.54, p=0.001) regardless of autism status. There was no significant difference between female and NBT participants (Z = 1.96, p = 0.152) or male and NBT participants (Z = -0.65, p = 1.00) regardless of autism status. There was no significant autism status by gender interaction.

As the above finding may have been influenced by the number of participants reporting having been diagnosed with an ED further analyses were conducted. Indeed, a robust binomial regression showed that significantly more autistic participants reported having been diagnosed with an ED than non-autistic participants (Table 2). Therefore, an additional robust regression analysis was conducted among participants who did not report

having an ED to explore if the difference between autistic and non-autistic groups was due to over-representation of ED symptomatology among the autistic participants or was driven by difference in number of participants reporting ED diagnosis. The robust regression again revealed a significant effect of gender ($F(2)=3.87$, $p=0.021$). However, post-hoc pairwise comparisons showed that the difference between female and male participants only approached significance ($Z=2.10$, $p=0.091$). There were no significant differences between female and NBT participants ($Z=1.84$, $p=0.156$) or male and NBT participants ($Z=0.40$, $p=0.915$) who did not report an ED diagnosis. The previous finding of significant difference between autistic and non-autistic participants in ED symptomatology was not replicated among participants who did not report having an ED ($F(1)=2.40$, $p=0.122$). There was also no significant autism status by gender interaction ($F(2)=0.15$, $p=0.861$).

Correlation analyses found significant positive relationships between EDEQ and AQ-28 scores among both autistic ($\rho=0.11$, $p=0.013$) and non-autistic participants ($\rho=0.13$, $p=0.007$) (Figure 2E, Figure 2F).

Discussion

This study investigated the prevalence of self-reported anxiety, depression and ED among autistic and non-autistic people of all genders. Our findings suggest autistic people are more likely to have anxiety and depression than their non-autistic counterparts, and that as autistic symptomatology increases so do mental health issues. While autistic people were more likely to have an existing ED diagnosis, we also found that as autistic traits rose, so did ED symptomatology. Importantly, we found that gender plays a role in the levels of anxiety, depression, and eating disorder behaviours which participants endorsed, emphasising that it is not just being autistic which has an impact on mental health. This is evidence for the

applicability of Multiple Minority Theory in the context of autism research and lived experience.

Anxiety

As expected according to Hypothesis 1, and in line with a wealth of previous research, autistic people of all genders were more anxious than their non-autistic counterparts. This fits with a pattern of findings showing that autistic people experience high levels of anxiety across the lifespan, from childhood (Gillott, Furniss and Walter, 2001) through adolescence (Kuusikko *et al.*, 2008; Magiati *et al.*, 2016) and into adulthood (Bejerot, Eriksson and Mörtberg, 2014; Maddox and White, 2015).

What was novel, and was in line with Hypothesis 2, was the finding of a gendered pattern to these experiences of anxiety. While all autistic groups were more anxious than non-autistic groups, women and NBT people were significantly more anxious than men, regardless of autism status. This supports the idea that Multiple Minority Theory (Meyer, 1995) can be meaningfully applied to the experiences of autistic people, with a notable impact of non-male gender on anxiety. It may be that being autistic, combined with belonging to groups who are traditionally under-valued in a patriarchal and heteronormative society, leads to more daily stressors than being autistic and male does. Daily stressors can be things like the high levels of stigma and bullying autistic people are subjected to (Rowley *et al.*, 2012), or the difficulties sensory sensitivities can present in navigating the world (Gillott and Standen, 2007). The impact of being a multiple minority – autistic *and* non-male – can be seen in the difficulties autistic women have. For example, they suffer from being judged as not meeting traditional female stereotypes (Baldwin and Costley, 2016; Kanfiszer, Davies and Collins, 2017), but also struggle to access an autism diagnosis because they do not fit a 'male stereotype' (Gould, 2017; Gould & Ashton-Smith, 2011). The challenges facing

autistic NBT people in both daily life and in accessing autism diagnoses and support have not yet been investigated but are likely to be similar, as they also likely do not meet the male stereotype of autism and are statistically a gender-identity minority.

Following Hypothesis 3, the correlation results suggested that increased anxiety is related to higher levels of autistic traits also suggests that elements like social difficulty or sensory sensitivities have an impact on the mental health of everyone. It may be that finding communities where people feel supported in their identity, whether that is around their gender or autism status, can help to minimise the levels of anxiety they experience. Indeed, there is growing evidence that autistic people socialise better together than they do with non-autistic people (Crompton, 2019; Crompton, Fletcher-Watson, & Ropar, 2019; Heasman & Gillespie, 2018). This provides hope that the autism community may provide the same protective effects as have been seen in the LGBT+ community (Roberts, Schwartz and Hart, 2011; Budge, Rossman and Howard, 2014), although this support cannot entirely counteract the stressors presented by the wider world in general.

Depression

Regarding depression, and consistent with Hypothesis 1, it was unsurprising to find that autistic people scored more highly than their non-autistic counterparts, regardless of gender. For example, a recent study has shown that autistic people are more likely than non-autistic people to have been unemployed, homeless, and suffered domestic abuse (Griffiths *et al.*, 2019). Experiencing more negative life events may naturally lead to a higher likelihood of developing depression.

Counter to the prediction of Hypothesis 2, the lack of gender differences on depression among the autistic sample is in stark contrast to the anxiety findings. This may be because while a greater number of stressors make autistic women and NBT people more

anxious, whether this anxiety is paired with low mood in response to these stressors is more individual and so there are fewer clear group-level effects. However, growing research on self-harm and suicide among autistic people finds that autistic women (autistic NBT people are not included in these studies) are more likely to attempt and complete suicide than autistic men (Cassidy and Rodgers, 2017). Camouflaging (consciously attempting to reduce visible autistic traits), a phenomenon known to be more common among autistic women (Hull *et al.*, 2019), has been found to be a specific risk factor for suicidality in autistic people (Cassidy *et al.*, 2018).This suggests that while there may not be quantitative differences in the rates or levels of depression between autistic men, women and NBT people, there are important qualitative differences in behaviour which future work should investigate.

Partially in line with Hypothesis 2, we found that non-autistic men and women scored similarly in terms of their depression levels, with non-autistic NBT people scoring significantly higher – and at a similar level to autistic people. While non-autistic NBT people formed the smallest group in the research, it is notable that this is the group who Multiple Minority Theory is most likely to apply to within the non-autistic sample, as they are a minority within the minority LGBT+ community, and therefore we would expect them to have elevated levels of mental health issues. NBT people are among the most attacked members of the LBGT+ community, and so it may be that they benefit less from the protective effects against depression than those who are cisgender gay (Mclaren, Jude and Mclachlan, 2008) or lesbian (McLaren, 2009).

In line with Hypothesis 3, correlation analyses suggested that for both autistic and non-autistic people, higher levels of autistic traits were associated with higher levels of depression. This may be because those with more challenges in social interaction experience a form of negative reinforcement cycle, e.g. they struggle to interact as expected, so get negative responses from peers, leading them to socially withdraw and interact less often,

meaning they get less practice, and so struggle to develop better social skills, contributing to depression (Katz *et al.*, 2011).

Eating Disorders

As predicted in Hypothesis 1, we found that autistic people endorsed more ED behaviours than non-autistic people of all genders. However, once those with a clinical ED diagnosis were removed from the analysis, no significant difference persisted. This suggests that those on the spectrum may be more likely to fall into the treatment-resistant, severe and enduring group of those with ED, in line with previous research (Westwood and Tchanturia, 2017).

In line with Hypothesis 2, we found that the gendered patterns seen in the general population – i.e. that women are more likely to endorse ED behaviours than men (Andersen and Holman, 1997) – were also true in the autistic sample. Interestingly, NBT people reported ED behaviours at similar rates to women, in line with previous work on EDs among a transgender population (Diemer *et al.*, 2015, 2018). This implies that the health inequalities often affecting non-heteronormative populations (Whitehead, 2017; Jones *et al.*, 2019) are also present in EDs, with transgender clients in ED services experiencing a range of unique challenges around clinician assumptions about their bodies and negative experiences with clinicians (Duffy, Henkel and Earnshaw, 2016).

Autistic people reported a range of ED diagnoses, not exclusively anorexia nervosa, something which is important for future research to account for as, to date, almost all the literature in this field has focussed on AN to the detriment of our understanding of other diagnoses. There is extensive work documenting the links between autism and AN (Oldershaw *et al.*, 2011; Westwood and Tchanturia, 2017). However, our important addition to the work previously published (Gesi *et al.*, 2017; Westwood and Tchanturia, 2017) shows

that the links between autism and AN are not restricted to women. The correlation analyses, in line with Hypothesis 3, suggested a relationship between higher levels of autistic traits and higher levels of ED traits both autistic and non-autistic participants, suggesting that autism screening may be a valuable addition to clinical assessments, as there is evidence that treatment should be adapted for those with high levels of autistic traits, e.g. avoiding or adapting the talking therapies which are common approached to ED treatment, as they may be difficult for those with communication differences (Spain *et al.*, 2015).

This study has some limitations. First, the data is entirely self-report. As the data was collected through an online study, we were not able to verify diagnoses with clinicians, but the AQ and EDE-Q scores of the groups provide support for the accuracy of people's self-report. It is also worth noting that autistic women (and, potentially, non-binary people) face unique challenges to accessing a formal autism diagnosis (Bargiela, Steward, & Mandy, 2016; Gould & Ashton-Smith, 2011), and so the authors made a conscious decision to respect self-reported autistic identity in this study. While AQ generally has good specificity and validity, there have been critiques made of both its accuracy among non-male groups (Murray *et al.*, 2017). However, currently this measure is one of the most accurate and widely used in autism research, and so is justified in its usage in this paper. Second, the groups are not matched on demographic variables such as gender. This is to be expected, however, considering work showing that autistic people are more likely to be gender non-conforming than non-autistic people (George and Stokes, 2016, 2017; Dewinter, De Graaf and Begeer, 2017) and therefore these differences are representative of the population. Third, we did not collect qualitative data on people's experiences with their mental health, such as length of illness, treatment experiences, or their perception of the causes of their difficulties. Future work should ask these questions, to gain greater understanding of the differences in autistic people's lives which result in their greater chance of developing a range of mental health

issues. Fourth, it is worth noting that this sample has more autistic women and non-binary people than is usual for autism research, as many studies have all- or majority-male samples (Banach *et al.*, 2009). This gender balance is normal for survey studies however (Sax *et al.*, 2008), and may be a feature of self-selecting samples as autistic women are more active in the online communities where this study was advertised.

In conclusion, this is the first study to examine the self-reported rates of anxiety, depression and different types of EDs among autistic and non-autistic people of all genders. We found that autistic adults are more likely to report having not only anxiety and depression, but also every type of ED, going beyond existing work on anorexia nervosa, and that the gendered patterns of ED in the non-autistic population are also seen in the autistic population. These findings have significant implications, suggesting that future work on autism and mental health should consider gender, including non-binary and trans identities, as an important factor in people's experiences. This consideration of the interaction between gender and autism as shaping experiences should cover everything from healthcare and mental health support, through to interactions with employers and the criminal justice system. Different presentations and behaviours in these situations can have significant impact on whether someone gets the best support and outcomes, and so research should work to provide an evidence base for understanding the best practice for working with autistic people of all genders.

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Table 1. *Demographic characteristics by group (autistic, non-autistic).*

		Autistic (n = 531)	Non-autistic (n = 399)
Age			
	Range	18.12 – 71.53	18.15 – 81.29
	M (SD)	34.06 (10.86)	32.67 (11.25)
Gender			
	Male	71 (13.37%)	54 (13.53%)
	Female	317 (59.69%)	327 (81.95%)
	Non-binary	143 (26.93%)	18 (4.51%)
Ethnicity			
	White	393 (74.01%)	307 (76.94%)
	Asian	10 (1.88%)	25 (6.26%)
	Black	4 (0.75%)	4 (1.01%)
	Latinx	5 (0.94%)	2 (0.50%)
	Mixed	29 (5.46%)	13 (3.26%)
	No Answer	90 (16.95%)	50 (12.52%)
Education Level			
	None	23 (4.33%)	2 (0.50%)
	GCSE	20 (3.76%)	5 (1.25%)
	A-level	83 (15.63%)	35 (8.77%)
	Diploma/BTEC	62 (11.67%)	15 (3.76%)
	Bachelors degree	205 (38.61%)	170 (42.61%)
	Masters degree	111 (20.90%)	133 (33.33%)
	PhD	24 (4.52%)	37 (9.27%)
	No Answer	3 (0.56%)	2 (0.50%)
Employment Status			
	Full-time	135 (25.42%)	210 (52.63%)
	Part-time	67 (12.62%)	36 (9.02%)
	Student	109 (20.53%)	108 (27.07%)
	Self-employed	57 (10.73%)	17 (4.26%)
	Unemployed	101 (19.02%)	14 (3.51%)
	Retired	11 (2.07%)	4 (1.01%)
	Other	48 (0.87%)	10 (2.50%)
	No Answer	3 (0.56%)	2 (0.50%)
AQ score			
	Range	4 – 28	0 – 20
	M (SD)	21.03 (3.83)	8.97 (4.38)
EDE-Q score			
	Range	0.00 – 5.73	0.00 – 5.95
	M (SD)	1.99 (0.42)	1.67 (0.28)

Table 2. Table showing mental health scores and test statistics by group (autistic, non-autistic) and gender (male, female, NBT)

	Autistic			Non-autistic			Test statistic, p-value
	Female	Male	NBT	Female	Male	NBT	
HADS Anxiety M (SD)	12.88 (4.25)	11.33 (5.37)	12.22 (4.49)	8.36 (4.70)	6.75 (3.93)	10.83 (4.74)	Autism-status: F(1) = 187.81, p < 0.001 Gender: F(2) = 5.37, p = 0.005 Autism-status x Gender: F(2) = 2.81, p = 0.060
HADS Depression M (SD)	7.91 (3.96)	7.76 (4.55)	7.46 (4.04)	4.55 (3.89)	4.56 (3.14)	7.78 (4.78)	Autism-status: F(1) = 126.78, p < 0.001 Gender: F(2) = 0.07, p = 0.936 Autism-status x Gender: F(2) = 6.01, p = 0.003
EDEQ Total score M (SD)	2.30 (1.60)	1.80 (1.37)	1.88 (1.39)	2.01 (1.45)	1.38 (0.99)	1.70 (1.13)	Autism-status: F(1) = 8.74, p = 0.003 Gender: F(2) = 9.00, p < 0.001 Autism-status x Gender: F(2) = 0.14, p = 0.870
ED diagnosis N (%)	190 (36.1%) AN 74 (14.1%) BN/BED 45 (8.6%) EDNOS/OSFED 36 (6.8%) ARFID 11 (2.1%) Orthorexia 5 (0.9%) Other ED 15 (2.9%)			83 (20.0%) AN 52 (12.4%) BN/BED 26 (6.2%) EDNOS/OSFED 8 (1.9%) ARFID 0 (0.0%) Othorexia 3 (0.7%) Other ED 5 (1.2%)			Autism-status: Z = -5.44, p < 0.001

NBT = Non-binary/Transgender; HADS = Hospital Anxiety and Depression Scale; EDEQ = Eating Disorder Examination Questionnaire; ED = Eating Disorder; AN = anorexia nervosa; BN = bulimia nervosa; BED = binge eating disorder; EDNOS = eating disorder no otherwise specified; OSFED = other specified feeding or eating disorder; ARFID = avoidant/restrictive food intake disorder; M = mean; SD = standard deviation. Note: the number of specific diagnoses reported by participants does not add up to the total number of people reporting having an eating disorder as these numbers include past and present diagnoses the person has received.