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# Assessing the relationship between eating disorder psychopathology and autistic traits in a non-clinical adult population

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Running Head: EATING DISORDERS AND AUTISTIC TRAITS

ABSTRACT

Purpose: Previous research demonstrates a genetic and behavioural link between eating disorders and autism spectrum disorders, and a recent study [1] extends this link to typical populations, showing a positive correlation between behaviours in typically developing children. The purpose of the present study was to examine whether this relationship continues beyond development, by studying the link between behaviours in a non-clinical adult population.

Methods: We examined associations between performance on measures relating to autistic traits and disordered eating. Undergraduate students, equally balanced by gender and by subject studied (i.e. humanity or science), completed three tasks: To measure autistic traits, participants were administered the Embedded Figures Test (EFT) and the Autism-Spectrum Quotient (AQ). Eating disorder symptomatology was measured by the Eating Attitudes Test (Eat-26).

Results: Our data revealed a significant positive correlation between scores on the AQ and Eat-26. Multiple linear regressions showed that higher scores on the AQ were particularly associated with higher scores on the Bulimia & Food Preoccupation subscale of the Eat-26. EFT performance was positively related to behaviours associated with autism and eating disorders, although not reliably so.

Conclusions: These data support the broader link between autistic traits and disordered eating in the non-clinical population, and demonstrate that it extends into adulthood (a time at which autistic behaviours can decrease). This work carries implications for the development of cognitive therapies for people with eating disorders.

KEYWORDS: eating disorders; autism; Eat-26; Autism Quotient; broader phenotype

## INTRODUCTION

For the last 30 years or so, an influential line of research has explored the clinical relationship between Eating Disorders (ED) and Autism Spectrum Disorders (ASD) (for a recent review see: Huke et al. [2]). This has largely centred on the presence of cognitive processing styles that appear to be common across the two sets of disorders. ASD has traditionally been distinguished by three traits: problems with social contact, restricted and repetitive behaviours and interests, and problems with communication [3]. In more recent times, however, the spectrum of behavioural traits have been explained in light of three pivotal cognitive models, indicative of factors that appear to be common amongst individuals with ASD. The theory of Weak Central Coherence [4, 5], describes a relative disregard of the Gestalt rules of perceptual organisation that dominate visual perception among the typically developing population. As such, people with ASDs tend to show a preference for processing of local details, as opposed to the organised hierarchical whole. In comparison, the theory of Executive Dysfunction [6] describes the problems that people with ASD have in terms of planning, mental flexibility and with the inhibition of cognitions. This has, in particular, been related to the repetitive nature of some ASD behaviours. Finally, deficits of Theory of Mind [7] have been used to explain difficulties in the ability to grasp the emotions and intentions of others. Each of these behaviours have been shown to extend into the typical, non-clinical population [8, 9, 10, 11], supporting the view that autism lies on a spectrum, ranging from the typically developed to a clinical diagnosis of autism (i.e. the Broader Autism Phenotype).

Like ASD, it has also been proposed that EDs lie along a continuum, accounting for both clinical and non-clinical populations. Mintz et al. [12] proposed that this continuum includes three categories: the asymptomatic group at one end of the spectrum (persons who have no

symptoms of eating disturbances), the symptomatic group (persons who do not meet the diagnostic criteria for an ED, but still display evidence of disordered eating) and the eating disordered group (those that meet clinical levels of an eating disorder). This classification is based on the DSM-IV [3] categories: Anorexia Nervosa (AN; patients with a body weight below 85% of what would be normally expected, some of whom being prone to binge-eating and purging), Bulimia Nervosa (BN; loss of control around food followed by varying compensatory behaviours) and Eating Disorders Not Otherwise Specified (ED-NOS; any form of disordered eating with does not comply with the strict AN or BN criteria). For accuracy, we note that these classifications have been altered in DSM-5 [13] to eliminate patients receiving an ED-NOS diagnosis. It has been established that many people with ED display degrees of behaviour that are characteristic of ASD [14]. ED is significantly predicted by weak central coherence [1] and has been found in both AN and BN patients on a variety of classical central coherence tasks (e.g. Rey-Osterrieth Complex Figure task [15]). Deficits in global processing have been found across the ED spectrum [16] and this weak central coherence persists long after ED recovery, demonstrating its potential as a trait effect [17]. Furthermore, executive dysfunction has been reported in individuals with EDs [18], especially those with AN and BN, both during and after illness [19]. Critically, these behaviours have also been observed in their otherwise unaffected relatives [18, 20]. Deficits in theory of mind tasks have also been reported in ED populations: they are significantly worse at identifying the correct emotions on the Reading in the Minds Eyes (RME) task compared to matched controls [21] and this has been replicated on a variety of similar tasks [22].

Aside from patterns of cognitive performance, there are a number of striking behavioural and biological similarities between ASD and ED. For example, individuals on both spectrums of

disorder have an increased likelihood of social anxiety [23, 24]. One could suggest that if people on both spectrums of disorders have difficulties with Theory of Mind, which would impair their ability to comprehend social cues, that this may influence their higher levels of social anxiety. Both spectrums of disorders demonstrate higher than normal levels of rituals and compulsions [25]. Indeed, atypical eating behaviours have been considered symptomatic of ASD [26] and it is common for individuals with an ASD to be hypersensitive to certain food types and for them to display abnormal behaviour around food [27, 28]. It has also been suggested that abnormal behaviour towards food might precede an ED [29, 30]. The root of these cognitive similarities could lie in shared biological components of the disorders; for example, both ASD and ED have a pronounced gender bias [3, 31, 32]. These biases have encouraged the suggestion that behaviours manifesting as autism in males may manifest in a different fashion in females [33], and this has led to the argument that the classically obsessive personality traits found in ASD could be focused on the management of physical appearance in females, rather than on systems as in the typically autistic male [1]. Such behaviours have been related to levels of foetal testosterone [34] and perinatal complication [35, 36], in both ASD and AN. Incidence statistics also highlight a strong link between the disorders: ED and ASD co-occur within families at levels above chance [37], to the extent that one sample found 31% of first-degree relatives of an AN group exhibited ASD traits [38]. Individually, ASD occurs at a higher rate in people with AN in comparison to its incidence in the rest of the population [39] (also see [35, 40]) and demonstration of ASD traits and ASD diagnosis made recovery significantly less likely in an individual with AN [41] showing the severity and importance of monitoring autistic traits in the population.

These previous studies therefore demonstrate a strong link between ASD and ED. Since both disorders have been posited to lie upon a continuum that extends into the typical non-clinical

population, it is of great utility to examine their relationship at a sub-clinical level. Such insights can provide useful information about the clinical components of the disorders, as well as their more general manifestation across populations. Interestingly, only one previous study has investigated the link between ASD and ED in a typical population: Coombs et al. [1] examined children aged 11 to 14 using the Eating Attitudes Test (Eat-26 [42]) as a measure of attitudes towards eating and the Autism-Spectrum Quotient (AQ [10]) as a measure of systemising and empathising capabilities. They found that participants who scored higher on measures of the Eat-26 also scored higher on the AQ, and this positive correlation remained when controlling for gender. ED symptomatology was particularly related to Attention to Detail (akin to weak central coherence) and Communication subscales of the AQ, which were also the strongest predictors of total Eat-26 scores. They therefore concluded that the aspects of ASD symptomatology that most relate to ED, in a non-clinical population, are weak central coherence and communication/social skills. This suggests that the disorders might converge in individuals who have a tendency to focus on detail, and who have some difficulty relating to other individuals and understanding the social world from other perspectives.

Although such findings are illustrative, they are potentially restricted to childhood and adolescence, making it unclear whether this association continues into adulthood. Since some autistic behaviours decrease in adulthood [43] it is possible that the strength of the relationship between ASD and ED also decreases with time. By focusing on the non-clinical adult population, the present study was aimed at extending the enquiries of Coombs et al. [1] beyond their developmental population into a typical adult corpus. As with their study, participants were administered the Eat-26 and AQ, and we predicted that these measures would be positively correlated. In particular we expected AQ to particularly relate to the

Dieting and Bulimia & Food Preoccupation subscales of the Eat-26 (see Methods). This is because relationships have been previously identified between ASD and both AN (relating to the Dieting subscale) and BN (relating to the Bulimia & Food Preoccupation subscale) [35, 45, 46]. In addition to the questionnaire measures, we also administered the Embedded Figures Test (EFT) [44] as a behavioural measure of weak central coherence. The test assesses the individual's ability to detect local detail within a more complex global structure. Since Coombs et al. [1] found that Attention to Detail was the most significant predictor of total Eat-26 scores, we predicted that the EFT would provide a useful behavioural assay of this relationship (as opposed to that provided by self-report measures). As local processing biases have been in people with ED and with ASD, we consequently predicted that participants who showed an emphasised local processing bias (i.e. faster search times on the EFT) would also score higher on measures of disordered eating and autistic traits.

# METHODS

## Participants

80 student volunteers from the University of Nottingham were recruited. Participants were aged 18-25 years old, with a mean age of 20.43 years old (SD =1.48), and there were an equal number of males and females. In order to ensure that there was a representative range of typical student scores, participants were equally sampled from Science/Engineering and Arts faculties (after Wheelwright et al. [47]). The University of Nottingham ethically ratified the study and written informed consent was obtained from all participants prior to commencement. No participant reported a known history of either disorder. One individual's AQ score crossed the threshold used by clinicians as an indicator of ASD, and three students scored higher than the clinical threshold on the Eat-26. Crossing the threshold for each scale is not, however, grounds for diagnosis [see Materials and Procedure] and, therefore, no further action was taken with the data. Due to the anonymous nature of data collection, participants were not followed up on the basis of their scores, although the debrief procedure included various professional contacts for participants to follow-up if they wished.

## Materials and Procedure

After the consent procedure, participants were first presented with the Embedded Figures Test (EFT [44]). This fixed order prevented participants gaining insight into the nature of the EFT from the questions asked in the booklets. The EFT required individuals to locate a small geometric shape located within a more complex global design. Participants were given 12 different trials and the experimenter recorded the time taken to locate the simple geometric shape (in seconds) using a stopwatch. Participants were allowed up to 180s on each trial, and after this point the experimenter identified the location of the target and moved on to the next

trial. The EFT is taken as a measure of central coherence: a shorter time taken to locate each image indicates the participant is processing at a local level and showing an attentional bias to detail. We used the procedure from the modern EFT and presented the target shape and complex figure simultaneously to reduce the role of memory. Concurrent presentation has been found to differentiate between ED and non-ED patients: ED patients perform superiorly compared to controls [16]. Performance is measured in terms of the mean time (in seconds) to locate the target item across the 12 trials.

After completing the EFT, participants were provided with a booklet containing two self-report questionnaire measures. The order that they were presented was counterbalanced across participants. The Autism-Spectrum Quotient (AQ [10]) was used to investigate whether participants exhibited behavioural traits related to ASD symptomatology. Individuals were presented with 50 statements requiring a forced-choice response from a selection of four levels of agreement, ranging from ‘definitely agree’ to ‘definitely disagree’, with no neutral response. Questions on the AQ are divided into 5 subscales: ‘Social Skill’, ‘Attention Switching’, ‘Attention to Detail’, ‘Communication’ and ‘Imagination’. Questions score one point for responses slightly or strongly indicative of ASD and all other responses score 0. In a clinical population a cut-off value of 26 is normally used but is increased to 32 in a non-clinical sample [10, 48]. The test is non-diagnostic but the cut-off value can indicate a need for clinical assessment. It has a Cronbach’s alpha reliability measure of .63 [10], and does not directly ask questions relating to food.

The Eating Attitudes Test (Eat-26 [42]) was administered as a measure of behaviours related to food. The scale consists of 26 self-report items assessing 3 subscales of behaviour commonly associated with eating disorders: ‘Dieting’, ‘Bulimia & Food Preoccupation’ and

‘Oral Control’. There are 6 possible responses for each item, ranging from ‘always’ to ‘never’. Scores from each item range from 3-0 with a score of 0 for each of the three options referring to behaviour not indicative to an eating disorder. Accompanying the Eat-26 are questions related to participants’ height and to their current, ideal and past weight, there are also behavioural questions referring to the 6 months previous to taking the test. Like the AQ, the Eat-26 is not diagnostic but the cut-off score of 20 in a non-clinical population is used to define the point at which a professional interview is recommended [49]. This test has a Cronbach’s alpha measure of reliability of .90 [42].

**Statistical Analyses**

The data were initially subjected to demographic analyses, in order to ascertain if there were any gender differences between participants who displayed high scores on the Eat-26, the AQ and the EFT. It has been argued that gender biases in ED and ASD are indicative of a relationship between them [33], and this allowed a similar investigation in the present dataset. We then carried out more detailed examinations of the relationships between performance on the measures, based on the techniques described by Coombs et al. [1]. Firstly, in order to assess whether there was a relationship between each of the measures, we carried out bivariate correlational analyses. Importantly, if there were found to be significant (or nearing significant) gender differences on any of the measures then this approach allows gender to be partialled out of the analysis, thus controlling for its influence. Finally, in order to more closely explore the predictive relationship between measures, and the subscales thereof, we conducted multiple linear regressions on the data.

## RESULTS

Initial analyses of performance found an effect of gender. Independent samples t-tests revealed that females scored significantly higher than males on the Eat-26 subscale of Dieting (Table 1), while other comparisons (Bulimia & Food Preoccupation and Overall Eat-26 Scores) approached significance in the same direction. In contrast, males scored significantly higher than females on the AQ subscales of Attention Switching and Imagination (Table 1). There was also a similar difference on the overall AQ score that approached significance. Analysis of EFT performance revealed that female participants took longer to locate the target items, but this did not reach significance.

----- Table 1 about here -----

Results of a bivariate correlation between AQ and Eat-26 scores controlling for the influence of gender can be found in Table 2. It revealed a significant positive correlation between the total AQ and Eat-26 scores which is illustrated in Figure 1. Additionally, the AQ subscale of Attention Switching correlated significantly with overall Eat-26 scores and a correlation with the AQ subscale of Communication neared significance ($r=.216$, $p=.056$). The Eat-26 subscales of Bulimia & Food Preoccupation and Dieting were both significantly positively correlated with total AQ scores and the Bulimia & Food Preoccupation subscale of the Eat-26 correlated significantly with the Social Skill, Communication, and Attention Switching subscales. Finally, the Oral Control subscale of the Eat-26 correlated significantly with Attention Switching and Attention to Detail subscales. There was no significant correlation between EFT performance and any other variable.

----- Table 2 about here -----

----- Figure 1 about here -----

AQ Total Scores, AQ subscale scores, Eat-26 subscale scores, EFT scores, Age and Gender were entered into a multiple linear regression (Table 3) to identify the most significant associations between the AQ and other variables. For AQ Total Scores, one significant relationship was found: with the Bulimia & Food Preoccupation subscale of the Eat-26. Gender approached significance in its association with Total AQ Scores. The model's overall fit was $R^2$= .18, thus explaining almost 20% of the variance. This method found AQ Social Skill scores and AQ Communication scores were both significantly predicted by the Bulimia & Food Preoccupation subscale of the Eat-26 scores when used to predict the 5AQ subscales. Additionally, AQ Attention Switching was associated with both the Eat-26 Oral Control subscale and Gender. Furthermore, Attention to Detail ($R^2$=.168) was significantly associated with the Eat-26 Oral Control subscale. AQ Imagination was not associated with any variable. The model that best described the variance was that which examined relations to the Attention Switching subscale of the AQ, which was found to explain 21.3% of the variance.

----- Table 3 about here -----

## DISCUSSION

The present study investigated the relationship between disordered eating and autistic behavioural traits within a non-clinical adult population. We found a significant positive correlation between total scores on the AQ and Eat-26: participants demonstrating higher levels of autistic trait behaviour also displayed higher levels of ED behaviour. This supports and extends a recent observation within a typically developing sample [1]. Taken together, these studies clearly demonstrate that the relationship between ASD and ED that has been observed within clinical samples [15, 39], extends into the non-clinical typically developed population. In particular, the present findings show that this relationship continues into adulthood, a time at which some autistic traits have been shown to decline [43].

Closer analyses of our data revealed that the Bulimia & Food Preoccupation subscale of the Eat-26 was most reliably related to AQ scores. This broadly supports previous clinical demonstrations of a relationship between BN and behaviours associated with ASD, such as weak central coherence [46]. More specifically, however, the Bulimia & Food Preoccupation subscale predicted AQ subscales of Social Skill and Communication, and this may relate to previous findings showing that people with clinical levels of BN have deficits in social skills and theory of mind [50, 21]. The Social Skill component of the AQ covers behaviours such as the enjoyment of spending time with others and an appreciation of their point of view, whilst the Communication subscale asks questions about skills such as turn-taking or reading between the lines in conversation. This therefore suggests that behaviours relating to BN may be more likely to occur in individuals who also demonstrate sub-clinical levels of social difficulty, or anxiety thereon. At a clinical level, it has previously been argued that behaviours associated with BN (particularly starvation and binging) may indeed provide the

basis of ASD symptomatology in some individuals [50], and these data suggest that a similar relationship could be present in sub-clinical levels of BN behaviour.

Our analytical approach followed that of Coombs et al. [1], in that we were primarily interested in which components of the AQ predicted ED symptomatology. In their study, Coombs et al. found that the Attention to Detail subscale of the AQ was the strongest predictor of ED-like behaviours. They cited this as additional support for a relationship between weak central coherence and ED behaviour [17]. We did find a strong relationship between Attention to Detail and the Oral Control subscale of the Eat-26, which suggests that weak central coherence may relate to self-discipline around food, and the maintenance of behaviour that restricts intake. However, the most variance in our data was accounted for by the Attention Switching subscale of the AQ. This component of the measure covers behaviours such as having strong interests, an adherence to routine, and anxiety surrounding new situations. The predictive power of the Attention Switching subscale might therefore be indicative of an important subclinical relationship between restricted interests and desire for sameness, and a relationship with food that involves aspects of preoccupation and restriction. These are relationships that have been identified in clinically diagnosed samples, and it is therefore illustrative to observe a similar relationship in typically healthy individuals. Of course, as with many published examinations of the relationships between these behaviours, it is difficult to describe the exact nature of this link. It may be that certain behaviours associated with ASD can manifest in a preoccupation with food intake (as many theorists have posited), although it may also be that concerns with body image and food intake may lead to behaviours that would be classed as autism-like, given a measure such as the AQ.

This issue is difficult to disentangle in a study such as this, especially when relying on self-report measures. However, we were also interested in whether a behavioural measure would provide an illustration of these links in typical adults: alongside administration of questionnaire measures, participants also completed the EFT as a behavioural measure of weak central coherence. Interestingly, EFT performance bore no relationship to any other variables, including the Attention to Detail subscale of the AQ. Previous studies have shown superior EFT performance in individuals with ASD [51] and also in fathers of children with ASD [52]. However, these findings do not seem to extend to the typical adult population, at least in the sample tested in the present study. Furthermore, EFT performance did not appear to be related to ED symptomatology, which itself suggests that relationships between weak central coherence and ED [16] do not necessarily extend to the broader population on behavioural measures such as the EFT. Of course, it is possible that a preference for local detail may be associated with Eat-26 scores in the typical population, and that the EFT is not sufficiently sensitive to measure it. The nature of a questionnaire as a measure may also have an impact on their experimental validity. For example, some of the questions on the Eat-26 address topics that can be more sensitive than others (e.g. relating to bingeing and purging behaviours) and it is therefore possible that some participants may not have been completely accurate in their responses. Similarly, the AQ is a self-report measure of autistic trait behaviours – respondents might not be fully aware of these traits (due to their nature) and so the questionnaire may not be an entirely accurate gauge of their full behavioural repertoire.

As well as illustrating the relationship between ASD and ED behaviours in the typical adult population, the present findings also carry clinical implications. By strengthening the link between cognitive styles and attitudes towards eating, our data suggest that alternative cognitively inspired therapies might be more successful than traditional methods in treating

EDs in the future. Cognitive Remediation Therapy (CRT) is a useful example of such an alternative therapy [1]. CRT aims to restore the cognitive flexibility (e.g. towards food) lost by patients with certain conditions to overcome their disorders. This method could be especially useful in treating the set-shifting difficulties in ED (illustrated by the observed correlation between Attention Switching and Eat-26 scores in this study). Adopting a more flexible thought process in ASD could be used as a preventative measure for developing ED in the ASD population. CRT in the ED population has had promising results thus far [22]. This is particularly important as relapse rates are in need of improvement: relapse rates for current treatments stand at 36% in AN and 35% in BN [53]. The support that our findings provide for the link between ED and ASD might also encourage a different treatment approach to ASD – underlying personality traits that indicate susceptibility to ED could benefit from a psychoeducational approach [54] to alert people about their disorder and teach them ways of dealing with the demands they may place on themselves. Similarly, increased vigilance might be required in attending to disordered attitudes towards food in people on the autism spectrum, in order to reduce the incidence of ED in the ASD population.

## CONFLICT OF INTEREST STATEMENT

On behalf of all authors, the corresponding author states that there is no conflict of interest.

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LEGENDS

TABLE 1. Means, standard deviations and effect sizes (Cohen's *d*) with gender as the independent variable

TABLE 2. Partial correlations controlling for gender showing Pearson's correlation coefficients and statistical significance

TABLE 3. Multiple linear regression output for dependent variables of AQ Total and Subscales scores, indicating β, *t*, *p* and $R^2$ values

FIGURE 1.Graph showing the bivariate correlation between Eat-26 Total and AQ Total scores

TABLE 1

| | Male | | Female | | | | |
|---|---|---|---|---|---|---|---|
| | Mean | S.D. | Mean | S.D. | *d* | t | *p* |
| Age | 20.78 | 1.42 | 20.10 | 1.48 | 0.47 | -2.078 | .041* |
| Eat-26 Total | 4.78 | 4.40 | 7.55 | 8.61 | 0.41 | 1.816 | .075 |
| Eat-26 Dieting | 2.28 | 2.52 | 4.83 | 6.13 | 0.54 | 2.432 | .019* |
| Eat-26 Bulimia & Food Preoccupation | 0.50 | 1.06 | 1.30 | 2.39 | 0.43 | 1.936 | .058 |
| Eat-26 Oral Control | 2.00 | 2.17 | 1.43 | 1.74 | 0.29 | -1.307 | .195 |
| AQ Total | 18.00 | 4.98 | 15.95 | 5.45 | 0.1 | -1.756 | .083 |
| AQ Social Skill | 2.08 | 1.51 | 2.33 | 1.87 | 0.15 | 0.657 | .513 |
| AQ Communication | 2.38 | 1.64 | 2.48 | 2.00 | 0.06 | 0.244 | .808 |
| AQ Attention Switching | 4.85 | 2.09 | 3.53 | 1.84 | 0.67 | -3.006 | .004** |
| AQ Attention to Detail | 5.85 | 2.21 | 5.53 | 1.68 | 0.17 | -0.740 | .462 |
| AQ Imagination | 2.85 | 1.63 | 2.10 | 1.68 | 0.45 | -2.031 | .046* |
| EFT | 21.80 | 13.01 | 23.75 | 18.11 | 0.12 | 0.552 | .583 |

*p**<0.05,;*p***<0.01

TABLE 2

| | Eat-26 Total | Eat-26 Dieting | Eat-26 Bulimia & Food Preoccupation | Eat-26 Oral Control | AQ Total | AQ Social Skill | AQ Communication | AQ Attention Switching | AQ Attention to Detail | AQ Imagination |
|---|---|---|---|---|---|---|---|---|---|---|
| Eat-26 Dieting | .936*** | | | | | | | | | |
| Eat-26 Bulimia & Food Preoccupation | .790*** | .675*** | | | | | | | | |
| Eat-26 Oral Control | .500*** | .233* | .194 | | | | | | | |
| AQ Total | .307** | .227* | .345** | .201 | | | | | | |
| AQ Social Skill | .201 | .153 | .296** | .055 | .684*** | | | | | |
| AQ Communication | .216 | .220 | .369*** | -.118 | .588*** | .439*** | | | | |
| AQ Attention Switching | .230* | .129 | .228* | .278* | .682*** | .266* | .317** | | | |
| AQ Attention to Detail | .174 | .102 | .031 | .332** | .343** | .068 | -.281* | .086 | | |
| AQ Imagination | .041 | .040 | .071 | -.019 | .585*** | .247* | .252* | .232* | .032 | |
| EFT | -.136 | -.170 | -.001 | -.066 | -.096 | -.085 | -.126 | .016 | -.125 | .054 |

*p*<0.05,;*p***<0.01;*p****<0.0001

TABLE 3

| Dependent Variable | $R^2$ | Independent Variable | Beta | *t* | *p* |
|---|---|---|---|---|---|
| AQ Total Score | 0.18 | Eat-26 Dieting | -0.07 | -0.448 | 0.656 |
| | | Eat-26 Bulimia & Food Preoccupation | 0.364 | 2.43 | 0.018* |
| | | Eat-26 Oral Control | 0.139 | 1.255 | 0.213 |
| | | EFT | -0.097 | -0.884 | 0.38 |
| | | Age | 0.005 | 0.04 | 0.968 |
| | | Gender | -0.227 | -1.915 | 0.059 |
| AQ Social Skill | 0.108 | Eat-26 Dieting | -0.129 | -0.788 | 0.433 |
| | | Eat-26 Bulimia & Food Preoccupation | 0.38 | 2.429 | 0.018* |
| | | Eat-26 Oral Control | 0.003 | 0.028 | 0.977 |
| | | EFT | -0.105 | -0.922 | 0.359 |
| | | Age | 0.025 | 0.211 | 0.833 |
| | | Gender | 0.04 | 0.322 | 0.749 |
| AQ Communication | 0.194 | Eat-26 Dieting | -0.056 | -0.363 | 0.717 |
| | | Eat-26 Bulimia & Food Preoccupation | 0.46 | 3.094 | 0.003** |
| | | Eat-26 Oral Control | -0.202 | -1.841 | 0.07 |
| | | EFT | -0.149 | -1.376 | 0.173 |
| | | Age | -0.028 | -0.243 | 0.809 |
| | | Gender | -0.082 | -0.702 | 0.485 |
| AQ Attention Switching | 0.213 | Eat-26 Dieting | -0.065 | -0.425 | 0.672 |
| | | Eat-26 Bulimia & Food Preoccupation | 0.243 | 1.655 | 0.102 |
| | | Eat-26 Oral Control | 0.244 | 2.257 | 0.027* |
| | | EFT | 0.017 | 0.163 | 0.871 |
| | | Age | -0.095 | -0.843 | 0.402 |
| | | Gender | -0.344 | -2.962 | 0.004** |
| AQ Attention to Detail | 0.13 | Eat-26 Dieting | 0.056 | 0.35 | 0.728 |
| | | Eat-26 Bulimia & Food Preoccupation | -0.076 | -0.494 | 0.623 |
| | | Eat-26 Oral Control | 0.328 | 2.887 | 0.005** |
| | | EFT | -0.094 | -0.834 | 0.407 |
| | | Age | 0.02 | 0.168 | 0.867 |
| | | Gender | -0.024 | -0.193 | 0.847 |
| AQ Imagination | 0.069 | Eat-26 Dieting | -0.015 | -0.091 | 0.928 |
| | | Eat-26 Bulimia & Food Preoccupation | 0.055 | 0.345 | 0.731 |
| | | Eat-26 Oral Control | -0.032 | -0.273 | 0.786 |
| | | EFT | 0.051 | 0.44 | 0.661 |
| | | Age | 0.112 | 0.917 | 0.362 |
| | | Gender | -0.214 | -1.694 | 0.095 |

*p**<0.05,;*p***<0.01;*p****<0.0001

FIGURE 1