The effect of diagnostic labels on the affective responses of college students towards peers with ‘Asperger’s Syndrome’ and ‘Autism Spectrum Disorder’

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Abstract
Given the removal of Asperger’s Syndrome label in Diagnostic and Statistical Manual of Mental Disorders–Fifth Edition, the impact of clinical labels upon the affective responses of college students was explored. A total of 120 college students read two vignettes depicting social interactions typical of a person with autism spectrum disorder. In one vignette, they were informed that the character was a typical college student and in the other, the character had a clinical disorder (either autism spectrum disorder, Asperger’s Syndrome or Schizophrenia). Participants’ affective responses were measured on the Positive and Negative Affect Scale. No significant differences in positive and negative affective responses were found between the clinical labels. However, affective responses were significantly more positive and less negative towards behaviours associated with clinical groups compared to the typical college student. The implications for students disclosing their diagnosis at university are discussed.

Keywords
affective response, Asperger’s Syndrome, autism spectrum disorder, label

The latest edition of the Diagnostic and Statistical Manual of Mental Disorders–Fifth Edition (DSM-5; American Psychiatric Association (APA), 2013) has made significant revisions to the way autism spectrum disorders (ASD) are conceptualised. The modifications are aimed at improving diagnostic sensitivity and validity and reflect the heterogeneity of ASD (Bultas and Koetting, 2014). The most significant and controversial amendment is the merging of four separate disorders: ‘autistic disorder’, ‘Asperger’s Syndrome’ (AS), ‘pervasive developmental disorder not otherwise specified’ and ‘childhood disintegrative disorder’ into the single diagnosis – ASD (Mandy, 2013). The removal of these diagnostic labels, particularly AS, has been met with some concern from those affected, researchers and professionals (Hazen et al., 2013). AS is often conceptualised as a mild form of autism or a manifestation of autism in people of normal intellectual ability (Woodbury-Smith and Volkmar, 2009), and it has been proposed that this diagnostic label may have utility for those affected (Mandy, 2013). Many young people and their parents feel more comfortable with the label AS and strongly object to the loss of this label (Butler and Gillis, 2011; Calzada et al., 2012; Giles, 2014; Linton et al., 2014; Spillers et al., 2014). For example, an online petition was organised to challenge the removal of subgroups and was signed by over 9000 people (The Global and Regional Asperger’s Syndrome Partnership, 2012). Also, in 2010, the Asperger’s Association of New England proposed that the AS label clearly differentiated those who were ‘less severe’ from the more severe and stigmatised autism group (Ben-Zeev et al., 2010).

Stigma is a process that has been conceptualised as being initiated by the identification and labelling of difference that links to a stereotype with negative characteristics and the labelling that distinguishes a ‘them and us’ separation (see Gray, 2002; Link and Phelan, 2001, 2006). Stigma research has tended to focus upon mental illness generally or Schizophrenia as a specific disorder; however, there is a paucity of literature on stigmatisation of adults with AS.

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(Angermeyer and Dietrich, 2006; Butler and Gillis, 2011). Research has suggested that while there may be less stigma attached to the label AS compared to autism, there is also confusion between these diagnoses with some parents reporting that they felt autism was better understood than AS (Calzada et al., 2012; Kite et al., 2012; Mandy, 2013).

One area where the removal of the AS label is particularly relevant is higher education, as there was a surge in diagnosis of people diagnosed with AS in the 1990s and these individuals are now approaching university age (Van Bergeijk et al., 2008). The number of students attending university with AS is increasing, in 2003–2004, it was estimated to be 1.8% and by 2007–2008, this had risen to 2.4%, and seems to be consistently increasing year by year (Fleischer, 2012; MacLeod and Green, 2009). Typically, people with AS have difficulty with the social demands of university life and one significant moderator for academic and social success for students with ASD is peer attitudes (Nevill and White, 2011). Many people with AS are reluctant to disclose their disability for fear of negative attitudes from peers (Adreon and Durocher, 2007). The worries and concerns of people on the spectrum transferring to university reflect a contradiction in requiring support but not wanting to compromise opportunities to develop friendships and socialising (Galligan et al., 2013). This may be based upon childhood experiences as children are less accepting of a peer with ASD than a typically developing peer (Campbell et al., 2005).

However, for young adults at university, there is evidence that college students have a more positive attitude towards someone performing mild social digressions when the person is labelled with an ASD than when they are labelled a typical student (Butler and Gillis, 2011; Matthews et al., 2015). Previous research suggests that a greater understanding of the disorder tends to result in fewer negative attitudes (Corrigan et al., 2005; Mayville and Penn, 1998; Nevill and White, 2011). The focus of this study was therefore not to replicate the investigations of how those with AS perceive the stigma associated with the labels (AS and ASD; e.g. Davidson and Henderson, 2010; Shtayermmana, 2009), rather to investigate how potential peers (without AS) respond to the labels, as this is an important aspect in the initiation of stigmatisation processes (Link and Phelan, 2001, 2006).

This study had the following three questions: (1) do college students respond differently to an AS label compared to an ASD label, (2) do college students respond differently to those with a clinical label compared to typical students and (3) does knowledge of ASD impact upon these responses. We hypothesised that (1) college students would respond differently to the two labels, (2) college students would respond differently to a clinical label compared to typical students and (3) knowledge of ASD would impact upon peers’ responses. The hypotheses were two-tailed as this is more conservative, and the hypotheses are based upon the existing literature that largely involves people affected by autism rather than peers. The labels AS and ASD were contrasted with Schizophrenia. Schizophrenia and ASD have behavioural overlaps, as they both share deficits in social interaction, emotional processing and executive functioning (Meyer et al., 2011). Furthermore, schizophrenia provides an interesting comparison, as it is one of the most highly stigmatised disorders (Graves et al., 2005).

**Methods**

**Participants**

A total of 120 students (M = 55, F = 65) completed an online study. Participants were recruited via opportunity sample via university bulletin boards and social networking sites that were only accessible to current students. The only inclusion criterion was that participants were currently students and they had to identify their current university and provide a university-based email (not retained to ensure that data were anonymous). Participants were mostly recruited from well-regarded UK universities (e.g. appearing in the top 20 of published league tables) that typically have high entry requirements. Most participants were undergraduate students and a small proportion were postgraduate students (collectively referred to as college students in the UK). No participants reported having ASD. Participants were not rewarded for their participation. See Table 1 for demographic information.

The participants were randomised into three clinical label conditions. In total, 40 were shown the clinical label ‘Asperger’s Syndrome’ (AS condition), of which 19 were female and 21 were male (M\(_{age}\) = 21.93 years, standard deviation (SD) = 2.11). A further 40 were shown ‘Autism Spectrum Disorder’ (ASD condition), 21 females and 19 males (M\(_{age}\) = 21.63 years, SD = 1.64). The remaining 40 were shown ‘Schizophrenia’ (Schizophrenia condition), 25 females and 15 males (M\(_{age}\) = 21.60years, SD = 2.72). The demographics of the participants in each condition did not significantly differ (all p > 0.05). Specifically, the distribution of males and females did not differ significantly between conditions (\(\chi^2(2)\) = 1.88, p > 0.05, N = 120).

**Materials**

An online questionnaire was created comprising the following.

**Demographics.** The demographic questions required participants to account for their age, gender, ethnicity, and year of study and subject.

**Vignettes.** The presentation of case vignettes is one of the most commonly used methods in establishing attitudes
A week later, you decide to ask if Alex could help you rearrange the furniture. You start to move around the sofa but Alex gets upset and moves it back to its original position with no explanation. You brush it off and just decide to move around the furniture on your own. Alex sees that the furniture was moved and frantically requests that everything be moved back to the way it was.

Positive and Negative Affect Scale. To measure affect, the participants completed the Positive and Negative Affect Scale (PANAS) after each vignette (Watson et al., 1988). This is the most frequently used instrument to assess positive and negative affect (Terracciano et al., 2003). It is a 20-item self-report affect scale containing two subscales each consisting of 10 items: positive affect (PA) and negative affect (NA). PA and NA are independent measures rather than on a continuum; therefore, an individual can hold both positive and negative attitudes to one attitudinal object. PA reflects the extent to which the person feels excited, interested and enthusiastic. NA is a dimension of subjective distress, which suggests how irritable and hostile they feel. Items are rated on a 5-point Likert scale from 1 (not at all) to 5 (extremely). The subscales are scored separately and results can range from 10–50, with higher scores representing more positive/negative affect. The PANAS has been found to be a good predictor of actual behaviour (Hepler and Albarracin, 2013).

Autism Spectrum Quotient–Short. The Autism Spectrum Quotient–Short (AQ-S) was used as a self-report measure of the participant’s level of autistic traits (Hoekstra et al., 2001). The AQ-S is an abridged version of the 50-item Autism Spectrum Quotient (Baron-Cohen et al., 2001). The shortened version was used as it is less demanding on participants’ time and has been validated in three independent samples (Hoekstra et al., 2011). Participants were asked to rate 28 statements on a 4-point Likert scale from 1 (definitely agree) to 4 (definitely disagree). Total scores range from a minimum of 28 (indicating no autistic traits) to a maximum score of 112 (full endorsement of autistic traits).

Knowledge of ASD was indexed by asking participants the following four questions: (1) How would you rate your current level of ASD? (‘never heard of it’, ‘know a little’, ‘know a lot’, ‘expert’), (2) How did you gain this knowledge? (e.g. ‘experience’, ‘education’, ‘TV’, ‘Internet’), (3) Do you have a family member with ASD? (‘yes’, ‘no’) and (4) Do you have a friend/acquaintance with ASD (‘yes’, ‘no’).

Design
Each participant completed the PANAS twice, once after reading each vignette. The vignettes were counterbalanced, half of each condition completed the clinical disorder vignette first and subsequently the typical student vignette. The other half completed the vignettes
in the reverse order. In addition, for half the ratings, the student accommodation vignette (above) was associated with the clinical disorder and a student society with the typical student, and the other way around for the other half of the ratings. After rating the two vignettes, participants completed the AQ-S and an assessment of their knowledge of ASD. The study took approximately 20–30 min to complete. Ethical approval was obtained from the Departmental Ethics Committee.

Inspection of the data indicated that there were three outliers (with normed z-scores above 3.29: one for positive affect, one for negative affect and one for AQ-S), which were removed and the remaining data were not normally distributed. Skewness and kurtosis values and Kolmogorov–Smirnov and Shapiro–Wilk tests of normality indicated that the results were not normally distributed. Consequently, non-parametric analyses were undertaken and medians reported in addition to means.

Results

The initial analysis compared the affective responses of participants for each clinical label. The descriptive statistics are shown in Table 2.

There were no significant differences in positive affective responses across all three clinical labels ($\chi^2(2) = 1.09, p > 0.05, N = 117$). Similarly, no significant differences were found between negative affective responses across all three clinical labels ($\chi^2(2) = 0.959, p > 0.05, N = 118$).

Next, the affective responses from the clinical group (AS, ASD, Schizophrenia collapsed) were compared with the responses to the typical student (Table 3).

This revealed a statistically significant difference in affective responses between the clinical group and typical group for positive affect, $z = -4.89, p < 0.05$ with a small to medium effect size (Cohen’s $d = 0.4$). Participants rated more positively in the clinical group compared with the typical group. Similarly, a statistically significant difference was found for negative affective responses, $z = -2.89, p < 0.05$ with a very small effect size (Cohen’s $d = 0.1$). Participants rated less negatively in the clinical group than the typical group. Having knowledge of ASD did not impact upon the results and there were no correlations with AQ-S score (all $p > 0.05$).

Matthews et al. (2015) explored the predictors of cognitive and affective responses to vignettes. We therefore analysed whether gender, knowledge of ASD or autistic traits impacted upon PANAS rating for the clinical or typical groups. There were no significant effects for self-rated ASD knowledge, having a family member (n = 7) or friend (n = 36) with ASD or autistic traits (using a median split high and low grouping for comparison) (all $p > 0.05$). There was a suggestion that males were less negative than females for the typical group ($\text{Mann Whitney's } U = 1292, p < 0.05$) with a trend in this direction for clinical groups ($\text{Mann Whitney's } U = 1384, p = 0.06$) and no difference for positive affect.

Finally, an examination of potential order effects required 12 statistical comparisons, and the level of significance was therefore Bonferroni adjusted to 0.004 (0.05/12). There were no significant order effects for the positive and negative affective responses to clinical or typical groups when comparing ASD and AS. The ratings for AS/ASD/typical groups were comparable whether they were rated first or second. However, there was an order effect for the Schizophrenia and typical group comparisons. For this comparison, the Schizophrenia group was rated both highest for positive affect when it was rated first and lowest for positive affect when it was rated second ($\text{Mann Whitney’s } U = 76, p < 0.004$. There was no order effect for negative affect).

| Table 2. Descriptive statistics for clinical disorder conditions. |
|---------------------------------|-----------------|-----------------|-----------------|
| | Asperger’s Syndrome Condition | Autism Spectrum Disorder Condition | Schizophrenia Condition |
| | n | Median | M (SD) | n | Median | M (SD) | n | Median | M (SD) |
| PA | 40 | 17.50 | 17.45 (5.56) | 39 | 15.00 | 17.72 (6.51) | 38 | 15.00 | 17.13 (7.08) |
| NA | 40 | 15.75 | 15.75 (4.66) | 39 | 16.00 | 16.95 (6.49) | 38 | 16.00 | 16.49 (4.49) |

SD: standard deviation; PA: positive affect; NA: negative affect.

| Table 3. Descriptive statistics of clinical group and typical group. |
|---------------------------------|-----------------|-----------------|
| | Clinical group | Typical group |
| | n | M (SD) | Median | n | M (SD) | Median |
| Positive affect | 117 | 17.54 (6.35)* | 16.00* | 117 | 15.42 (4.48)* | 14.00* |
| Negative affect | 118 | 16.42 (5.26)* | 16.00* | 117 | 17.21 (5.57)* | 16.00* |

*p < 0.05.
Discussion

This study sought to investigate the affective responses of college students towards potential peers with a clinical label, distinguishing between AS and ASD (and Schizophrenia). The results showed no significant differences between the student’s positive or negative affective responses towards the clinical labels AS and ASD. Additionally, no significant differences were found with the comparison clinical label ‘Schizophrenia’. This suggests that the clinical label used does not influence student’s positive or negative affective responses. There was, however, a significant difference between the clinical group and the typical group; affective responses were significantly more positive and less negative towards the clinical disorder vignette compared to the typical college student vignette. This suggests that students have a more positive and less negative responses towards peers who display behaviour typical of ASD when they are aware of a clinical diagnosis compared to no awareness of a clinical diagnosis. This was found to be unrelated to self-reported levels of autistic traits and knowledge of ASD.

The implications of these findings that are replacing the AS label with ASD does not impact upon peer perceptions for college students in a university context. Second, the results suggest that awareness of a diagnosis can result in more positive (and less negative) responses to ASD-type behaviour. This would suggest that despite concerns over disclosing diagnostic status (Adreon and Durocher, 2007; Davidson and Henderson, 2010), disclosure can be beneficial within the university context.

These results appear to contrast with previous qualitative research suggesting that ASD may have more stigma attached to it than AS (Calzada et al., 2012; Kite et al., 2012). These differences may be due to the examination of different population groups, the previous studies focused on people with ASD, parents and professionals, whereas this study focused upon potential peers. While the diagnostic label of AS may have utility for those affected (Mandy, 2013), the ASD label may not represent a salient change for peers at university. The results also showed that student’s affective responses towards Schizophrenia did not differ from AS and ASD, and Schizophrenia has been argued to be more widely stigmatised than many other mental health problems (Graves et al., 2005). While both ASD and Schizophrenia can be characterised by social impairments, the vignettes characterised behaviours typical of ASD, not Schizophrenia, and the implications with respect to Schizophrenia are constrained by this. The behavioural manifestations of Schizophrenia were not characterised within the vignettes to be consistent with the typical student comparison, which reinforces the limitations of this study to apply to the Schizophrenia label. The presentation of the order of vignettes was randomised and there were no order effects, except for positive affect for the Schizophrenia group. This may be spurious, although the significance value was adjusted for multiple comparisons which suggests this unlikely to be the case. As noted, this study has limited capacity to comment upon the Schizophrenia label, but the difference in positive affect when rated before and after rating a typical student may be an interesting avenue for future research.

The finding of a more positive response to behaviour when aware of a clinical diagnosis is somewhat consistent with Matthews et al. (2015), who found that American students’ attitudes towards peers with ASD were more positive when the participants were informed of the diagnosis. Matthews et al. conducted a between-group study and reported that college students with the clinical vignette reported more positive behavioural and cognitive attitudes, but not affective attitudes towards the vignette characters than students in a no-label condition. The authors suggest that despite positive cognitive and behavioural attitudes, students may not feel more positive in the clinical condition. This study was a within-group study and used the PANAS which contains separate positive and negative affect measures, whereas other measures conflate these two dimensions. The Multidimensional Attitudes Scale towards Persons with Disabilities (MAS; Findler et al., 2007, used by Matthews et al., 2015), for example, contains items that are indorsed more to indicate positive affect and less to indicate negative affect. As the MAS largely contains negative affective emotions (12 from 16), this may be a better indicator of negative affect. The lack of finding is therefore consistent with this study which found a very small effect for reduced negative affect, but a larger effect for increased positive affect.

It is possible that participants were responding in a socially desirable manner, although the anonymity of the online environment has been found to minimise such effects (Martin and Nagao, 1989) and previous research has suggested that social desirability bias does not affect attitudes towards mental health issues (Wolkenstein and Meyer, 2009). The findings are also consistent with Butler and Gillis (2011), who found that an ASD label (compared to no-label) did not result in stigmatisation processes. The findings also suggest that males tended to rate less negatively than females for both typical and clinical (trend) groups – though not more positively. Previous research has found males to be more positive than females towards these vignettes (Matthews et al., 2015). It is possible that the mild social digressions described in the vignettes are better tolerated by males as such vignettes may generally reflect more male-typical behaviour (Nevill and White, 2011). However, this study did not find self-reported autistic-like characteristics (the AQ) related to PANAS scores (see Matthews et al., 2015), suggesting that those more likely to engage in similar behaviours are not more positive or less negative towards the characters within the vignettes. It may be that males find mild social digressions...
less threatening, for example. Measures that separate positive from negative affect may be beneficial in better understanding sex differences in responses to peers with clinical disorders. As the MAS largely contains negative items (see above), the ‘less negative’ finding for males in this study may be comparable to the ‘more positive’ finding for males in other studies.

These findings also have important practical implications for college students with ASD. It implies that within a university environment, disclosing their diagnosis to peers could be beneficial as this study suggests that they would experience more positive and less negative affective responses towards behaviour typical of ASD. This may help students with ASD reduce their level of perceived public stigma. People with mental health issues who feel that they are widely stigmatised are less likely to seek help (Biddle et al., 2007; Corrigan, 2004). This study suggests that disclosure of ASD diagnosis may reduce the perception of negative responses which then may encourage more help-seeking behaviour at university. This is consistent with many university’s Disability Support Services who generally recommend students to disclose their disabilities as it allows additional support to be put in place (Edwards and Miller, 2013; Hughes et al., 2010).

This study was based upon college students, but there is a suggestion that attitudes to mental health may improve among the general public (Evans-Lacko et al., 2013; see also Butler and Gillis, 2011). In relation to prior knowledge, the results suggest that this was not a factor that influenced affective responses to clinical disorders. This result contradicts previous research suggesting that greater knowledge of the mental health issues fosters more positive attitudes (Mayville and Penn, 1998; Nevill and White, 2011). Despite being used in previous research, the questions used in this study may be an imperfect proxy for knowledge. For example, it neither measures the degree of exposure these participants had to a friend/relative or the participants’ actual understanding of ASD (Nevill and White, 2011). The limitation of the measures used needs to be borne in mind, as does the college-based nature of the sample and the online nature of the methodology. The data were interrogated to investigate whether multiple entries had been made by a single participant, but there was no evidence that this had occurred. Although gender, knowledge and AQ score were not significant in this study, we did not explore whether interactions of these variables predicted PANAS scores which could be an avenue for future research with a larger sample. Overall, however, the results are consistent with previous research and the formal advice from most universities that disclosure of clinical conditions by students should be encouraged.

**Funding**

This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors.

**Note**

1. The authors thank an anonymous reviewer for raising this point.

**References**


