

Stress, Depression and Anxiety in Adults with Autism

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Declaration

‘I declare that this thesis that I have submitted to Dublin Business School for the award of BA (Hons) Psychology is the result of my own investigations, except where otherwise stated, where it is clearly acknowledged by references. Furthermore, this work has not been submitted for any other degree.’

Signed: JACK O’KELLY

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Abstract

The aim of this study is to examine the issue of mood and anxiety issues comorbidity in adults with Autism Spectrum Disorder (ASD). There were a total of 120 participants in this study. Participants were gathered through Aspire, the Asperger association of Ireland. Three tools were used, Depression Anxiety Stress Scales 21, Perceived Stress Scale and the Multidimensional Scale of Perceived Social Support. This study was a cross-sectional survey with closed questioning. It was found that those with Asperger's Syndrome expressed higher levels of perceived stress, depression, anxiety and less social support than neurotypicals. It was found that those in therapy reported higher levels of perceived stress than those not in therapy. Results showed there was no significant difference in perceived stress or perceived social support between the sexes. These findings support prior research suggesting that Asperger's Syndrome comes with an increased amount of stress, anxiety, depression and a decreased perception of social support in comparison to neurotypicals.

Stress, Depression and Anxiety in Adults with Autism

The aim of this present study is to shed light upon the issue of mood and anxiety issues comorbidity in adults with Autism Spectrum Disorder (ASD). This type of study is extremely relevant as according to the CDC's Autism and Developmental Disabilities Monitoring (ADDM) Network approximately 1 in 68 children have been identified with Autism Spectrum Disorder worldwide ("Autism Spectrum Disorder (ASD)", 2016) which emphasises the need for structured data. This is an area with abundant research related to it yet limitation in approaches are equally plentiful. This can be seen in the lack of clear consensus when it comes to which measures suit autism best which leads to data that is cross comparable yet weak in the face of what could be found with a ubiquitous measure, as confirmed by White, Oswald, Ollendick and Scahill (2009) in their review of forty papers on the subject. The research gathered here suggests that individuals with autism are at more risk of anxiety and mood related disorders than neurotypicals. A major flaw of a number of said research is the focus on children and adolescents (adolescents particularly, as this time has been found to come with increased difficulty (Mechanic, 1983) due to the biological and social changes natural to this period of development) as it does not encapsulate the entire spectrum of the disorder itself, for example a significant number of those diagnosed with Asperger's Syndrome (AS) were diagnosed later in their lives. By focusing on adults this present study will seek to fill in the gaps and add to the body of knowledge.

What is Autism?

Autism is a neurodevelopmental disorder typically identified by deficits in social interaction and communication, especially nonverbal interaction, that is, difficulty in interpreting facial expressions, as well as impairments in emotional range and empathy and repetitive behaviours and interests (Lord & Rutter, 1994). Problems with mood in children with Autism were first observed by Kanner in 1943 in his seminal report on Autism,

subsequently noted by Hans Asperger in Austria (Asperger, 1944). They both shared the same teacher Georg Frankl (Robison, 2017). This is where the polymorphous element of Autism was discovered as both men one year apart from each-other and on different sides of the globe described children who possessed a love of routine, a social detachment and a difficulty in picking up on the social cues of others. However, Asperger's subjects had good cognitive skills and were well-spoken whilst many of Kanner's either spoke very little or did not speak at all (Robison, 2017). It was from this difference that two separate diagnoses were formulated, Autism and Asperger's syndrome (AS) (Kanner, 1943; Asperger, 1944). This serendipity, where two separate figures arrive at the same conclusion at the same time can be seen throughout history, another example being the Brønsted–Lowry theory of 1923 (Brønsted, 1923; Lowry, 1923).

ASD: AD, HFA, AS, PDD-NOS? and the difficulties therein.

Autism Spectrum Disorder is a branch term to encompass all people with an Autism diagnosis through the metaphor of a spectrum where each individual occupies their own space whilst also being part of a whole (Baio, Wiggins, Christensen, Maenner, Daniels, Warren & Durkin, 2018). Autism previously was diagnosed with three or four separate diagnoses. Autistic disorder (AD) and Asperger's syndrome (AS), High-functioning autism (HFA) (both disorders are sometimes considered identical) and pervasive developmental disorder not otherwise specified (PDD-NOS). High functioning Autism is used to describe individuals with average or above average IQs and as such has been speculated to be the same disorder as AS (de Giambattista et al., 2018), findings contradict this position however.

As previously noted, research suggests individuals with Asperger's syndrome have a higher likelihood of mood disorders and anxiety problems as well as other comorbid psychiatric symptoms than Autistics with AD, HFA and PDD-NOS (Weisbrot, Gadow, DeVincent & Pomeroy, 2005; Thede & Coolidge, 2006; Farrugie & Hudson, 2006;

Williamson, Craig & Slinger, 2008; Green et al., 2000; Meyer, Mundy, Van Hecke and Durocher, 2006; Russell & Sofronoff, 2005; Tonge et al., 1999) and a meta-analysis of 52 studies of IQ profiles of individuals with HFA and AS found significant differences between the two groups. Results showed that individuals with AS had higher full-scale IQ, verbal IQ and performance IQ than individuals with HFA, suggesting HFA and AS are two separate subgroups of Autism (Chiang, Tsai, Cheung, Brown, & Li, 2014). Furthermore, research conducted in 2018 and published in the *Journal of Autism and Developmental Disorders* found that “differences in cognitive, language, school functioning and comorbidities were revealed when 80 AS and 70 HFA patients were compared.” (de Giambattista, Ventura, Trerotoli, Margari, Palumbi & Margari, 2018, p. 1) Ultimately indicating that an empirical distinction between diagnoses within ASD would be appropriate (de Giambattista et al., 2018). On a more biological level, neurological studies have found differences in grey matter abnormality between individuals with AS and HFA suggesting the two are distinct from one another (McAlonan, Suckling, Wong, Cheung, Lienenkaemper, Cheung, & Chua, 2008). The broad ASD diagnosis, in an attempt to be inclusive, excludes difference at the potential expense of the individual. In this present study, participants were asked to specify their diagnosis in order to examine the effects this might have on mood and anxiety levels.

Asperger’s syndrome and Depression

Asperger’s syndrome tends to be considered as a mild high functioning variant of Autism. However, a wide array of research has found that not only does AS differ significantly from Autism and high-functioning Autism (Chiang, Tsai, Cheung, Brown, & Li, 2014; Gadow et al., 2005) and pervasive developmental disorders not otherwise specified but contracts greater difficulty for the individual in certain areas. People with Asperger’s syndrome tend to have a higher cognitive ability than their high functioning autistic counterparts (Chiang, Tsai, Cheung, Brown, & Li, 2014) and interestingly present with

higher levels of depression and anxiety, among other comorbid conditions which will be elaborated upon later. Lorna Gladys Wing, the woman who expanded upon Asperger's research and introduced his work to the English-speaking scientific community (Woodbury-Smith & Volkmar, 2009) found that among her series of 34 adults with AS, at least ten of them had depression (Wing, 1981). These findings were further supported by the work of Tantam (1988) where in a series of 60 subjects, depression was the most common diagnosis, and Ghaziuddin et al (1998) which found among a sample of 35 subjects with AS, at 37%, depression was the most common diagnosis.

The difficulty that arises in diagnoses of depression for those with AS is that the disorder can manifest differently in those with Asperger's and Autistics in general than in non-autistics. Ghaziuddin observed in 1995 that Asperger's individuals with depression would frequently display evidence of other symptoms related to other psychiatric disorders, the obsessive-compulsive behaviours of some patients would increase and ruminations and perseverations would intensify. He further commented in 1998 that a significant amount of those with Asperger's present with symptomology that would meet the criteria of an ADHD diagnosis. Even the special interests or 'niches' of persons with AS, under the shadow of depression would cast a morbid slant, Ghaziuddin gives the example of a young autistic person with a keen interest in astronomy becoming fixated on the "dark hole of space" and as a result overtaken with fear. This present study seeks to assess depression and anxiety accurately with a widely used measure (DASS 21) (Lovibond & Lovibond, 1995) in order to add to the current body of research on the subject.

Anxiety

According to a review of 40 papers dealing with anxiety in children and adolescents with ASD it was found that Comorbidity estimates for anxiety range from 11-84%. It was clear that based on the data gathered that anxiety problems were "quite prevalent in young

people with ASD” (White, Oswald, Ollendick & Scahill, 2009, p. 225) and that the individuals experience of anxiety was influenced by degrees of social impairment, cognitive functioning and the specific ASD diagnosis.

It has been suggested that anxiety in autistics could be compounded by the social disability that comes with the disorder, and in high-functioning individuals who possess a cognizance of this impairment it can lead to social isolation (White, Oswald, Ollendick & Scahill, 2009)

Interestingly research conducted by Weisbrot et al (2005) found that among 483 children with ASD, the children with the highest anxiety levels had higher IQs than those with lower anxiety. This relationship was not seen in children without ASD suggesting levels of cognitive functioning may be associated with severity of anxiety and other psychotic symptoms, such as auditory hallucinations, in people with ASD. However, this association between psychosis and anxiety was seen in non ASD children as well. This relationship between depression and IQ seems to be unique to autism, as a longitudinal study conducted by Zammit, Allebeck, David, Dalman, Hemmingsson, Lundberg & Lewis (2004) examining premorbid IQ score and risk of developing schizophrenia, bipolar disorder, and severe depression found no such correlation, in fact lower IQ was associated with increased risk of severe depression and schizophrenia.

White, Oswald, Ollendick & Scahill (2009) conclude that more reliable and consistent measures should be employed as there is no consensus currently on which measure best assesses anxiety in those with ASD. The broad estimate of 11-84% was largely due to the way ASD diagnoses were confirmed (as some diagnoses were from communities and not confirmed by the researchers). How anxiety is expressed was found by some research to differ from diagnostic group to diagnostic group (Gadow et al., 2005) and yet others found no differences in anxiety across diagnostic groups (Kim et al., 2000). However most findings

suggested that individuals with Asperger's syndrome presented with higher levels of anxiety than those with High functioning Autism and Autism Disorder, pervasive developmental disorder not otherwise specified (PDD – NOS) and non ASD (Weisbrot, Gadow, DeVincent & Pomeroy, 2005; Thede & Coolidge, 2006; Farrugia & Hudson, 2006; Williamson, Craig & Slinger, 2008; Green et al., 2000; Meyer, Mundy, Van Hecke and Durocher, 2006; Russell & Sofronoff, 2005; Tonge et al., 1999) thus providing support for the present research.

Perceived Stress and Biological Sex

Research undertaken by Brougham, Zail, Mendoza and Miller in 2009 found that college women reported higher levels of stress than college men. Furthermore, research conducted by Wiklund, Malmgren-Olsson, Öhman, Bergström and Fjellman-Wiklund in 2012 on an adolescent sample found that three times as many females as males reported health complaints, sadness and anxiety. The study examined subjective health complaints such as headaches, tiredness, sleep problems and musculoskeletal pain and found it correlated strongly with perceived stress. Research carried out by Dusselier, Lauri, Dunn, Brian, Wang, Yongyi, Shelley, Mack, Whalen and Donald in 2005 found that from a sample of 462, women experienced greater perceived stress than men. Culture may influence these findings, as research among Shanghai University students found the opposite i.e. male students in their sample reported greater levels of stress, lower levels of psychological wellbeing and less likely to utilise positive coping strategies (Chen, Wong, Ran, & Gilson, 2009) indicating that this gender imbalance can swing both ways in different cultural contexts. Pierceall & Keim in (2007) found that among American college students, females reported greater levels of stress than males. In an analysis of three national surveys in the U.S. spanning over 26 years with a sample size of 2,387 it was found that women reported higher perceived stress than men (Cohen & Janicki- Deverts, 2012).

Through research focusing on adolescent girls and the cost of caring, it was concluded that increased distress in female adolescents could be vicarious in nature and partly related to the increased social perspective taking in female friendships (Kessler, McLeod & Wethington, 1985). This is what Kessler, McLeod and Wethington (1985) termed empathetic distress. This relationship would be very interesting to scrutinise as what could be inferred is the potential correlation between perceived stress and perceived social support. As previously stated, females perceive more peer support than males (Buhrmester, 1992). Could this relationship represent a cycle? Where increased empathy leads to increased empathetic distress in the woman? Yet there is evidence that social support buffers perceived stress. Could this buffer also lead someone to perceive more stress? as in, does this increased level of bonding lead to empathetic distress in the woman for her peers leading to increased perceived stress overall whereas men might avoid such distress by receiving less peer support? This will be examined through the use of the Multidimensional scale of perceived social support, perceived stress scale-4 item and Depression, Anxiety and Stress Scale.

In regard to social support, Cheng and Chan in 2004 and Furman and Buhrmester in 1992 found that women score higher in perceived peer social support than men. Frey and Rothlisberger in 1996 found that women received more social support from their peers than from their parents and men vice versa, who received more parental social support. Men have been found to use avoidance as a coping strategy whereas women tend to use social support as a coping strategy (Eschenbeck et al., 2007). It has been suggested that the reasons underlying this relate to how women and men cultivate friendships. Women commonly build friendships upon shared confidence and intimacy whereas men commonly build them upon shared interest and physical activity (Rueger, Malecki & Demaray, 2010). Consequently, their friendships sometimes lack the shared confidence that female friendships are founded upon. However, once again culture and ethnicity may play a pivotal role in these findings as

Asians and Asian-Americans have been found to seek less social support as a stress related coping strategy than European-Americans (Taylor et al., 2004). Latinos in the U.S. have reported higher perceived familial support and lower perceived peer support than White Americans. As such it can not be stated that the findings in a western context are universal or generalisable in a global setting.

Therapy Status

It has been found that cognitive therapy is effective in treatment of mild to moderately depressed individuals and more effective than antidepressants (Gloaguen, Cottraux, Cucherat & Blackburn, 1998). In a comparative analysis of major therapeutic treatments (Cuijpers, van Straten, Andersson & van Oppen, 2008) (nondirective supportive treatment, behavioral activation treatment, problem-solving therapy, cognitive-behavior therapy, interpersonal psychotherapy, psychodynamic treatment, social skills training) it was found that there are no large differences between therapies for treatment of mild and moderate depression. Thus, therapy was chosen as a broad term to encapsulate the spectrum of possible therapies and provide a more straightforward question with yes/no response. It has been found that mental health stigma interferes with mental health care (Corrigan, 2004), this will be discussed as it relates to the findings. Therapy status will be measured with a yes/no question 'Are you currently in some form of licenced therapy with a mental health professional?' and further questioning, this will then be cross examined with depression scores and perceived stress scores and discussed. To get a clearer response, the participant is asked to specify for how long they have been in therapy for and are they satisfied thus far. For those who are not currently in therapy they will be asked if they ever were and if they were, were they satisfied with the service provided.

In summary

Firstly, the main hypothesis of this present study is that individuals with ASD will present with significantly higher levels of depression and anxiety. Secondly it is hypothesised that women will perceive significantly greater levels of perceived stress, depression and anxiety than their male counterparts. This will be examined across both the neurotypical sample and autistic sample. Thirdly the concept of the buffering effect will be evaluated across the sample through the MSPSS. Fourthly the question of the benefit of therapy for autistic and neurotypical individuals will be assessed, it is hypothesised that current therapy status will significantly affect perceived stress and DASS21 scores for both neurotypicals and autistics. The aim of this research is to expound upon previous literature and examine further autism and it's relation to mood and anxiety issues as well as the effects of therapy, social and sexual differences and the implications for wider society.

Methodology

Materials

Three tools will be used in this present study, Depression Anxiety Stress Scales 21 (Lovibond & Lovibond, 1995), Perceived Stress Scale (Cohen & Williamson, 1988) and the Multidimensional Scale of Perceived Social Support (Zimet, Dahlem, Zimet & Farley, 1988). DASS 21 scale will be used to examine depression, anxiety and stress of the participants (Osman, Wong, Bagge, Freedenthal, Gutierrez & Lozano, 2012). This measure is a combination of anxiety and depression related questions as it has been posited that anxiety and depression are linked due to their high comorbidity (Sanderson, Di Nardo, Rapee, & Barlow, 1990). In an Australian hospital the scale was found to be a good measure of improvement for patients (Ng et al., 2007). It is not a diagnostic tool but rather provides indicative information on the levels of arousal, agitation and depressive feeling of the subject. A review of the DASS 21 by Osman, Wong, Bagge, Freedenthal, Gutierrez & Lozano, (2012) found it could be improved by extending the time frame the question relayed, that is over the past week to over the past two weeks in order to “optimize it’s clinical utility” (Osman, Wong, Bagge, Freedenthal, Gutierrez & Lozano, 2012, p. 1335), however it was concluded that the DASS 21 “is a theoretically relevant measure of negative emotions that include mixed symptoms of depression, anxiety, and stress “over the past week”” (Osman, Wong, Bagge, Freedenthal, Gutierrez & Lozano, 2012, p. 1335). As such the DASS 21 will be employed to examine the aforementioned variables of depression, anxiety and stress.

Moreover, to analyse stress further the perceived stress scale (Cohen & Williamson, 1988) will be used. This scale was evaluated by Lee in 2012 in a review of nineteen articles related to the psychometric properties of the scale and was found to be empirically valid. As with DASS it is not a diagnostic tool. Research conducted by Hirvikoski and Blomqvist in 2015 found that among a sample of fifty-three adults, twenty-five with ASD and twenty-eight

neurotypicals, the adults with ASD reported significantly higher perceived stress and a poorer ability to cope with it.

Additionally, the multidimensional scale of perceived social support (Zimet, Dahlem, Zimet & Farley, 1988) will be used to see if social support has a mediating effect on perceived stress, anxiety, depression and stress. This question was analysed by Bishop-Fitzpatrick, Mazefsky and Eack in 2017 and it was found that among adults with ASD that adults with ASD reported significantly lower levels of perceived social support and quality of life and that social support did not mediate the effect of perceived stress on the ASD sample's quality of life, this suggests that not only do adults with autism receive less support but that the support they do receive makes little difference to their subjective quality of life. It is concluded that interventions to teach adults with autism how to cope with the unique stressors that come with their disorder and how to foster supportive social relationships would be useful (Bishop-Fitzpatrick, Mazefsky & Eack, 2017). These findings contrasted the data that first lead to the concept of a social support buffering effect (Cohen & McKay, 1984) indicating that the adult autistic experience differs from that of neurotypical individuals. This effect will be appraised as it relates to adults with ASD and a neurotypical sample through the usage of the Multidimensional Scale of Perceived Social Support (Zimet, Dahlem, Zimet & Farley, 1988). In an analysis of the internal reliability of the MSPSS, the "findings provided strong support for the use of the MSPSS as a unidimensional instrument" (Osman & Augustine, 2014, p. 111). Hence, it was chosen as the social support measure.

Participants

There were a total of 120 participants in this study. Participants were gathered through Aspire, the Asperger association of Ireland, a charity which seeks to "provide supports to people with Asperger's Syndrome that will help them to fulfil their goals, to provide information to them and their families, and to promote an understanding in the community"

(Welcome to Aspire, 2018). The questionnaire was dispersed throughout the social media the charity operates. The questionnaire was made open to both neurotypicals and Autistics by design. The sample as a result was skewed in favour of non-diagnosed individuals. This is a flaw that could be mended in further research which will be elaborated upon in the discussion. Participants were first required to confirm their consent to participate and then to confirm their age as being above eighteen. The sample was made up of 59.2% female (71 individuals) and 40% (48 individuals) male participants with one participant preferring not to state their sex (0.8%). 75.9% of participants were those not diagnosed with Autism which amounted to 88 people; and 24.1% were autistic, 4 with ASD, 3 with High-functioning Autism and 21 with Asperger's Syndrome making 28 in all, there were no participants who chose PDD-NOS or Autism as their diagnosis. As no questions other than consent and age were made mandatory to complete the questionnaire, many chose to ignore questions that they preferred not to answer, as such the question of diagnosis only received 116 responses.

Design

This study was of a quasi-experimental comparison design; a cross-sectional survey with closed questioning that used a number of validated scales to measure depression, anxiety, stress, perceived stress and perceived social support. Additional questions were asked in regard to therapy with simple yes or no questioning followed by questions relating to the duration of the therapy.

Procedure

After consulting with staff in Aspire, it was decided the questionnaire would be better suited as an online form for it's members to fill out. The rationale being the wider scope of social media and the internet and the personal observations of Aspire staff that their clients would prefer this method. Google forms were used to construct the survey.

Ethics

Participants were required to explicitly state their consent prior to starting the survey. Names were not taken to preserve anonymity. At the beginning of the survey was a brief introduction (see Appendix B) detailing the topic and emphasising that none of the participation was obligatory. Once the survey was completed the participant was presented with a debrief sheet with more information about the research including the contact details of the researcher (see Appendix C). Along side this came information and contact details for certain mental health related charities for any person in distress. Participants were required to be eighteen years of age or older to participate in the study. A letter of access was granted by Aspire (see Appendix A) to use their client base/following for research. The study passed ethical review and a physical copy of the questionnaire was given to Aspire for transparency.

Results

Autism, Perceived Stress and DASS21 Scores

A one-way between-groups multivariate analysis of variance was conducted to examine the differences between neurotypicals and autistics in regard to perceived stress and depression, anxiety and stress scale scores. Two dependent variables were used: total perceived stress scores and total DASS21 scores. Preliminary assumption testing was done to check for normality, linearity, univariate and multivariate outliers, homogeneity of variance covariance matrices, and multicollinearity, with no serious violations noted. There was a significant difference between groups on the combined dependent variables, $F(6, 212) = 3.14, p = .006$; Wilks' Lambda = .082; partial eta squared = .08. When the results for the dependent variables were looked at separately, both total perceived stress and total DASS21 scores attained statistical significance, using a Bonferroni adjusted alpha level of .025, Perceived stress total: $F(3, 107) = 6.21, p = .001$, partial eta squared = .08. DASS21 total: $F(3, 107) = 3.55, p = .017$, partial eta squared = .08. An evaluation of the mean scores suggested autistics reported higher levels of perceived stress and had higher DASS21 scores than the neurotypical group. For total perceived stress: ASD ($M = 11.00, SD = 4.36$), Asperger's Syndrome ($M = 9.95, SD = 2.70$) High-functioning Autism ($M = 8.33, SD = 2.08$), Neurotypical group ($M = 6.42, SD = 3.77$). For total DASS21 scores: ASD ($M = 36.68, SD = 20.84$), Asperger's Syndrome ($M = 28.42, SD = 14.65$), High-functioning Autism ($M = 26.67, SD = 10.79$), Neurotypical group ($M = 19.10, SD = 14.07$).

In order to ascertain from where exactly the significance arose from, multiple one-way ANOVA's were employed.

Autism and perceived stress

A one-way between-groups analysis of variance was conducted to examine the impact of Autism on levels of perceived stress. Diagnosis was divided into six separate groups that

by nature of the sample was whittled down to four. There was a statistically significant difference at the $p < .05$ level in total perceived stress between them, $F(3, 112) = 6.31, p = .001$. Despite attaining statistical significance, the difference between mean scores between the groups were small with an effect size of 0.1, calculated using eta squared. Post hoc comparisons using the Tukey HSD test indicated that the mean score for Asperger's Syndrome ($M = 9.66, SD = 2.73$) was significantly different from the Neurotypical group ($M = 6.55, SD = 3.73$). ASD and the High-functioning Autism group did not differ significantly from the neurotypical or Asperger's group.

Autism and DASS21

A one-way between-groups analysis of variance was administered to examine the impact of Autism on DASS21 scores. There was a statistically significant difference at the $p < .05$ level in total DASS21 scores between them, $F(3, 107) = 3.5, p = .017$. However, post hoc using the Tukey HSD test indicated that there were no statistically significant differences in mean scores between each group. The effect size was extremely small at 0.09.

Autism and perceived social support

A one-way between-groups analysis of variance was employed to examine the impact of Autism diagnosis on perceived social support. There was a statistically significant difference at the $p < .05$ level in total perceived social support scores: $F(3, 111) = 4.6, p = .004$. Post hoc comparisons utilising the Tukey HSD test showed that the mean score for the Neurotypical group ($M = 62.26, SD = 13.80$) was significantly different from the Asperger's Syndrome group ($M = 50.47, SD = 13.88$). High-functioning autism and ASD did not differ significantly from the Asperger's and Neurotypical groups. The effect size using eta squared was .11.

Social support, diagnosis and perceived stress

Multiple regression was employed to test whether diagnosis and social support were predictors of perceived stress. The results of the regression indicated that the two predictors explained 36.7% of the variance in total perceived stress ($r^2 = .367$, $F(2, 112) = 34.11$, $p < .001$. when looked at separately both variables were statistically significant, with Social support ($beta = -.50$, $p < .001$) recording a higher beta value than Autism diagnosis ($beta = -.24$, $p = .003$)

Diagnosis, perceived stress and social support

A multiple regression was performed to test whether diagnosis and perceived stress were predictors of perceived social support. The results of the regression indicated that the two predictors explained 32.1% of the variance in total perceived social support ($r^2 = .333$, $F(2, 112) = 27.92$, $p < .001$. when looked at separately only perceived stress was a statistically significant predictor ($beta = -.542$, $p < .001$) recording a higher beta value than Autism diagnosis ($beta = .079$, $p = .345$).

PSS, DASS21, Therapy status

A one-way between-groups multivariate analysis of variance was conducted to evaluate if there was a difference between Perceived stress and DASS21 scores of participants who were currently in therapy and those who weren't. two dependent variables were used, total perceived stress and total DASS21 scores, the independent variable being current therapy status. There was no statistically significant difference between groups on the combined dependent variables, $F(2, 110) = 2.59$, $p = .079$; Wilks' Lambda = .74; partial eta squared = .05. When the results for each dependent variable were looked at separately, the only difference that attained statistical significance, using a Bonferroni adjusted alpha level of .025, was total perceived stress, $F(1, 111) = 5.21$, $p = .024$, partial eta squared = .05. An examination of the mean scores suggested on both scales, people in therapy reported slightly

higher levels of perceived stress ($M = 8.60$, $SD = 2.94$) and higher DASS21 scores ($M = 24.84$, $SD = 11.6$) than the No groups for perceived stress ($M = 6.65$, $SD = 3.94$) and DASS21 ($M = 20.00$, $SD = 15.3$).

Perceived stress and Therapy status

An independent samples t-test was performed to compare the total perceived stress for people in therapy and people not in therapy. There was a significant difference in scores for the groups, Yes group: ($M = 8.70$, $SD = 2.86$) and No group: ($M = 6.67$, $SD = 3.87$; $t(116) = 2.52$, $p = .013$, two-tailed). The extent of the differences in the means (mean difference = 2.03, 95% *CI*: .437 to 3.62) suggested a moderate effect size (eta squared = .05).

Perceived stress and Therapy duration

As there were two questions on therapy duration, for those currently in therapy and for those that are not but have been at some point in time, two one-way between-groups analysis of variance tests were done. Neither one was significant. For the first (current) group $F(4, 21) = .531$, $p = .71$ with an effect size of .09. For the second (past) $F(4, 50) = 2.09$, $p = .09$. The effect size using eta squared was 0.14 which is considered a large effect.

DASS21 scores and Therapy satisfaction

An independent-samples t-test was performed to compare the DASS21 scores of those who were either satisfied or dissatisfied with their therapy. There was a statistically significant difference in scores for the yes ($M = 22.04$, $SD = 10.8$) and no ($M = 32.00$, $SD = 12.0$; $t(32) = -2.41$, $p = .022$, two-tailed) groups. Effect size was extremely small at -.22.

Perceived social support and biological sex

An independent-samples t-test was conducted to compare total perceived social support for males and females. There was no significant difference between Males ($M = 62.72$, $SD = 12.81$) and Females ($M = 58.15$, $SD = 15.55$; $t(115) = 1.67$, $p = .09$, two-tailed).

The extent of the differences between the means (mean difference = 4.5, 95% *CI*: -.82 to 9.96) was (eta squared = .02)

Perceived stress and biological sex

An independent-samples t-test was implemented to compare perceived stress in males and females. There was no significant difference between Males ($M = 6.72$, $SD = 3.90$) and Females ($M = 7.40$, $SD = 3.64$; $t(116) = -.95$, $p = .342$, two-tailed).

DASS21 and biological sex

An independent-samples t-test was administered to compare DASS21 scores in males and females. There was no significant difference between the sexes: Males ($M = 19.23$, $SD = 13.73$) and Females ($M = 22.19$, $SD = 15.10$; $t(111) = -1.06$, $p = .29$, two-tailed).

Discussion

In regard to the main research question of this study, the findings suggest that those with a diagnosis of Asperger's Syndrome perceive themselves to be under significantly more stress than neurotypicals. Furthermore, those with Asperger's Syndrome scored significantly higher on the depression, anxiety and stress scale but when mean scores were looked at, this difference was very slight with a small effect size. These findings are of particular note when taking into account the sample size of this study, there were only nineteen Asperger's participants eligible for that analysis as compared to eighty-six neurotypicals. A much larger sample would be required to make broader statements but these findings do provide the footing for such an endeavour. Neither the ASD group, nor the high-functioning autism group differed significantly from neurotypicals, Asperger's or each-other. Though this result; where Asperger's participants demonstrate higher anxiety is in line with prior research, only three participants identified themselves as having high-functioning autism, and four identified themselves as ASD, therefore it would be dishonest to allege that the results in this regard bear extreme significance, a larger and more specified sample would be preferable. The significance arose from the stark contrast present between neurotypicals and those with Asperger's Syndrome as was the case with perceived social support where the AS group differed significantly from the neurotypical group.

Supporting White, Oswald, Ollendick and Scabil's (2009) review, in this study Autistics were found to present more stress, anxiety and depressive results than those without Autism. This research dealt with adults, which is relatively uncommon as a lot of research related to Autism focuses on children and adolescents. The findings of this study suggest that these issues do not subside by adulthood and are not necessarily expressions of anxiety brought on by pubertal angst or the usual tumult of childhood but point to Autism itself as the precipitant. Now, it cannot be said exactly how this relationship works but educated

speculation has been made, for example in White, Oswald, Ollendick and Scabil's (2009) review it is suggested that anxiety in Autistics could be exacerbated by the social difficulty characteristic of the disorder and the upset that could arise from high-functioning individuals who are aware of their own disability. As Asperger's Syndrome was the only diagnosis that bore significance, this will be discussed; as noted by Ghazziuddin (1995), a core difficulty in observing depression in Asperger's is that the disorder does not manifest in the same way as in neurotypicals. He observed symptomatology of other psychiatric disorders such as obsessive-compulsive ruminations and perseverations as well as evidence of symptomatology that would fit the criteria for ADHD, this calls into question current scales used to measure depressive affect and anxiety and its applicability in autism research, and furthermore, suggests a link between mood and obsessive behaviour in those with AS. Why Asperger's? as previously cited, research suggests a link between levels of cognitive functioning (IQ) and levels of anxiety and other psychotic symptoms (Weisbrot et al., 2005), this is supported by further research that suggests Asperger's individuals suffer more stress, depression and anxiety than their autistic counterparts, because of their higher cognitive ability (Chiang, Tsai, Cheung, Brown, & Li, 2014; Gadow et al., 2005). The findings of this present study bolster previous research (Weisbrot, Gadow, DeVincent & Pomeroy, 2005; Thede & Coolidge, 2006; Farrugia & Hudson, 2006; Williamson, Craig & Slinger, 2008; Green et al., 2000; Meyer, Mundy, Van Hecke and Durocher, 2006; Russell & Sofronoff, 2005; Tonge et al., 1999) suggesting that those with Asperger's Syndrome, perceive themselves to be under more stress, perceive less social support and experience higher levels of anxiety, stress and depression than neurotypicals and other autistic diagnostic groups. It was found that perceived social support and diagnosis significantly predicted levels of perceived stress explaining 36.7% of the variance with both being independently significant, however diagnostic status was not found to significantly predict levels of social support whilst

perceived stress was, this could be down to sample sizes as Autistics were found to experience less social support and more perceived stress. Future research could focus on an entirely autistic sample in the future to examine this relationship.

Strengths

This study used verified scales to examine Autism and its relationship with stress, depression, anxiety and social support and came up with valid data to compare and contrast. Its sample, though not vast was above the minimum for a quantitative sample and included a sizeable portion of Autistic individuals.

Weaknesses

The major flaw of this research is the imbalanced sample. Though significant statistically, when the size of the samples present are accounted for, significance in the layman's sense of the word wanes. However, this does not mean that the results are not important and indicative of a wider issue. Even in such a small sample, Autistics expressed far more stress and less support than the neurotypical, this is something that should continue to be explored. The sample discrepancy can be explained by the fact that the survey was made available to the general populace, which is overwhelmingly neurotypical and as expected, the majority of responses were from neurotypicals. Approaching a charity though logical came with its own cons, as most of Aspire's following on social media are made up of non-autistic relatives of autistic individuals. Online dispersion also came with its drawbacks. It was originally thought placing the survey online exclusively would provide ease of access for its autistic target demographic without belabouring them with social interaction that could potentially make them uncomfortable. It is unverifiable at present whether this approach was a success but an autistic sample of 28 is not a meagre result, though more would be preferable. The greatest difficulty came from dispersing the survey to as many as possible. Once a social media post is made it is soon buried by subsequent posts, therefore it

would make sense to repost it as many times as is appropriate, but how much is too much? This is where the problem lies as an online survey essentially becomes a brief exercise in digital marketing where peak viewing times, hashtags and algorithms play a role in its successful propagation. Whereas a researcher making use of paper surveys possesses a degree of self-determination in regard to sample size, where they can seek out as many as they wish, an online survey is more akin to throwing a line into the ocean. Collaborating with Aspire did not prove difficult in any sense but perhaps closer correspondence and clearer communication of the survey goals (optimum sample size, posting schedule etc.) would have benefitted the response frequency. Making the responses non-compulsory opened the data up to plenty of missing values, however this was a conscious decision designed to prevent any potential alienation that forcing someone to answer in order to proceed with the study might have caused. These missing values however generated an irregular pattern of responses for each group, potentially having an impact on the findings.

The second major flaw of this study is the usage of the PSS-4 item scale, Though empirically valid, in Lee's review of the psychometric properties of the PSS, the PSS-4 item scale was found to be the least effective of the tools and the PSS-10 item scale was judged more effective than the PSS-14 item scale (Lee, 2012). This flaw could be mended in future research by using the more effective PSS-10 item scale.

Future Research

Future research could improve upon this study by establishing more stringent sample procedures, that is, minimum response requirements for all groups within the sample that are being examined. Using this study as an example, with an overall neurotypical sample of 88 it may have been worthwhile to attempt to muster an equal sample of Autistic individuals so that the comparisons made held more weight in their general implications and applications. This study dealt with adults only which is relatively unusual in literature dealing with ASD.

Aspire consultations revealed anecdotal evidence that they received regularly requests for access to their client base from researchers, but that said research almost entirely revolved around the experiences of families and carers for autistic individuals. With AD and severe Autism this sort of assessment almost requires carer and parent input as a large amount of those with severe autism suffer extreme deficits in social and nonverbal communication (Filipek et al., 1999) however this does not necessarily apply to those with High-functioning Autism or Asperger's Syndrome. this focus on carers and parents of autistic individuals is by no means a bad thing, but an important factor in how Autism affects others, however, more research needs to be done to assess the Autistic individual as an individual. Future research could provide a clearer picture of the data by asking for further information about the participant, for example this study did not include; precise age, race, sexual orientation, socio-economic status, marital status, age at the time of diagnosis as well as numerous other potential queries and qualitative components to explore the subjective experiences of autistics further.

Implications and Applications

These findings support prior research suggesting that Asperger's Syndrome comes with an increased amount of stress, anxiety, depression and a decreased perception of social support in comparison to neurotypicals. As mentioned already, AS individuals with depression may present symptoms differently (Ghazziuddin, 1995) as such, a new study that uses verified scales for depression, anxiety, stress and evaluates compulsions, ruminations and perseveration behaviours (through the use of appropriate measures) and examines the relationship between the two may prove fruitful, potentially paving the way for a new paradigm of Autistic depression. These findings along with the wealth of previous research put pressure on the psychiatric and psychological communities and indeed the public to pay more attention to the difficulties autistic people face in the modern world.

Perceived stress, Support and Biological Sex

Interestingly, in contrast to previous research on the subject (Brougham, Zail, Mendoza & Miller, 2009; Wiklund, Malmgren-Olsson, Öhman, Bergström & Fjellman-Wiklund, 2012; Dusselier, Lauri, Dunn, Brian, Wang, Yongyi, Shelley, Mack, Whalen & Donald, 2005; Pierceall & Keim, 2007; Cohen & Janicki-Deverts, 2012) there was no significant difference between males and females in perceived social support, perceived stress, or DASS21 scores. Could this be a case of cultural differences as was the case with Chen, Wong, Ran, and Gilson's research in 2009? Do Irish people in general differ in perceived stress and social support across the sexes? This could be an avenue for deeper investigation in future research.

Strengths

This study consciously referred to biological sex as just that and not gender identity. To avoid eliciting discomfort, a prefer not to say option was available, an option one participant did avail of. The scales used were empirically valid.

Weaknesses

A larger sample would have been preferable. The presence of autistic participants with significantly higher levels of stress and less social support could have made the results less significant.

Future Research

Future research could focus on cultural differences between Irish stress coping strategies and levels of perceived stress as compared to other countries. Whilst sex was not a significant predictor of social support or stress, stress and social support were significant predictors of each other, suggesting possibly the importance of social support for both sexes regardless of sex.

Implications and Applications

This result contradicts previous research indicating no link between sex, stress and social support. Further investigation of stress, sex, support and coping strategies is needed within Irish society to ascertain whether this is a trend or a one off result due to the autistic participants skewing data.

Therapy Status

Those currently in therapy were found to have reported higher levels of perceived stress than those not in therapy. This could be due to the fact that those in therapy were most likely under some sort of strain before they decided to enter it. This was the only significant difference for the groups when it came to status and perceived stress and DASS21 scores. Interestingly there was no statistically significant difference between groups in perceived stress and therapy duration. Suggesting there was no significant difference whether one had been in therapy for a week or for a year when comparing. Any number of factors could help to explain this result, such as therapy type which varies in efficacy as mentioned (Cuijpers, van Straten, Andersson & van Oppen, 2008) or diagnostic status (autistic or unrelated disorders not asked about in this study) which could influence the efficacy of certain therapies. It was found in a study on cognitive behavioural therapy and PTSD that it improved perceived health over time (Galovski, Monson, Bruce, & Resick, 2009), perhaps perceived health as a measure would be useful in future research on the subject of therapy progress over time as well as specification of therapy type.

In regard to therapy satisfaction, unsurprisingly those who answered no, that they were not satisfied with their therapy, had higher DASS21 scores. Interestingly, more participants stated their satisfaction with their therapy (36 responses) than participants who stated they were in therapy at all (27 responses), this could be due to individuals skipping the first question and forgetting, or a desire to skew results, but most interesting of all those who

answered no still expressed significantly higher DASS21 scores than those who answered yes, could this suggest a reluctance to admit to being in therapy? It has been found that mental health stigma interferes with mental health care (Corrigan, 2004), could these results suggest this effect in action? This could be explored further with qualitative questioning detailing the attitudes of the participant prior to completing the scales; In order to also tackle the possibility of intentional skewing of results from participants, a focus on personality and scores prior to therapy, is there a predisposition to dissatisfaction for those with higher DASS21 scores prior to entering therapy? and is there a link between personality type, DASS21 scores, is the individual who intentionally skews results more likely to be under higher levels of stress, anxiety etc. and is it linked to a certain personality type?

Strengths

The questions were non-invasive in the sense that they did not require an answer to progress with the survey. The question of current therapy status received 119 responses with only one person choosing not to answer, this could be seen as illustrative of this non-invasive approach. However it cannot be said unequivocally to have been the case, as this question was the third after age and sex so a higher response frequency could be expected for so early in the survey, 77% answered no. The questions were clear and concise and provided straightforward instruction. Including a prefer not to say option in regard to therapy duration emphasised the participant's agency in how they responded. A degree of consistency may have been more sensible, i.e. including a prefer not to say option in every therapy related question, this could also be seen as a weakness in the design.

Weaknesses

Therapy duration was an important facet that was underutilised in this study and could be better suited in empirical studies of clinical samples to measure the efficacy of therapies and the minimum exposure required to see a difference in the patient's wellbeing. This could

possibly lead to a preferential bias for the therapy deemed most effective and least time-consuming in privatised health organisations that prioritise cost-effectiveness and productivity, perhaps if the prospective study were to span a number of years this could be controlled for. The effect size for DASS21 scores and therapy satisfaction was extremely small, therefore not particularly generalisable at all.

Making these questions non-compulsory opened the data up once again to many missing values.

Future Research

A potential future research project could run a longer study focused on therapeutic treatment types and progress over time. This could involve measuring perceived health as well as stress. In regard to therapy satisfaction, a qualitative element could be beneficial to elucidate as to why they were satisfied or dissatisfied with their therapy.

Implications and Applications

For many people therapy is still seen as a taboo subject not to be discussed and at worst seen as an admittance of defect due to its connotations with mental illness and the wider mental health stigma that exists (Corrigan, 2004). These findings with their small sample do not have incredibly broad generalisability but they could hint at further lines of enquiry that future research could take up as more research is needed in this area.

Conclusion

In conclusion, it was found that those with Asperger's Syndrome expressed higher levels of perceived stress, depression, anxiety as was hypothesised and less social support than neurotypicals. It was found that those in therapy reported higher levels of perceived stress than those not in therapy and that those dissatisfied with their therapy expressed higher DASS21 scores. Results showed there was no significant difference in total perceived stress or total perceived social support between the sexes. There is more research needed in the

realm of therapy and autism, that is, which type currently in existence suits autism best or is there a need for a new approach tailored to the unique elements presented by Autistics when in mental distress. It has been suggested that psychotherapy is of no significant benefit to Autistics (Attwood, Evans, & Lesko, 2014) as it relates to abstract thinking and a free associative environment, this suggestion should be investigated further, especially as psychotherapy in particular is highly dependent on the therapist, their background, the duration of therapy and why the person is there in the first place. Therapy can last from a few months to a few years, varying in success, as such it is a complicated scenario to control for and investigate. This study was basic in its questioning in regards to therapy but did reveal interesting implications: those in therapy perceived more stress than those not in therapy, as previously suggested this could be explained by them being in therapy in the first place, namely that they felt they needed to be for whatever given reason. However, the duration of therapy did not affect these scores in a significant way, suggesting that there was not much subjective improvement. This cannot be taken as definitive without more data which future research could provide. Using a more reliable scale like the PSS-10 item, specification of which type of therapy they were undergoing, qualitative questioning detailing their attitudes to therapy, e.g. do their family and friends know they are in therapy? Could this correlate with their levels of perceived social support? Is there a stigma in Irish society around mental health? Does age impact the perceptions of mental health and therapy? Scrutinising this material could help elucidate the matter. Paper surveys in a more controlled environment could control for the flaws in this study's design. This study lays the foundation for future research as its findings though small in effect size and sample do suggest there is more yet to be known in these areas.

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Appendices

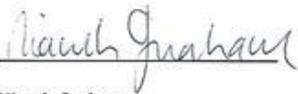
Appendix A: Letter of Access



Dear Jack,

I am writing to confirm that Aspire – The Asperger Syndrome Association of Ireland will assist you in the recruitment of participants for your undergraduate research project in Autism Spectrum Disorder and perceived stress levels.

Kindest Regards,


Niamh Graham
Programmes Coordinator

Aspire - The Asperger Syndrome Association of Ireland
Address: The Carmichael Centre, Coleraine House, Coleraine Street, Dublin 7.
Phone: 01 8780027 / 01 8780029
Email: info@aspireireland.ie / Web: www.aspireireland.ie
CHY 11438 / CRN 231996

Appendix B: Introduction

Survey

I am a student of psychology at Dublin Business School and as part of my schooling in research methods I am collecting questionnaire data. The data collected will become the foundation for my thesis in my third year.

You are invited to participate in this study. This entails completing and returning the attached questionnaire. Though the questions asked may cause minor negative feelings, it has been used widely in psychological research. However, if the questions do cause negative feelings for you, contact information for supports services are included on the final sheet along with general information about the research presently being conducted and the aim of said research.

You are not obliged to participate in this study and **consent can be withdrawn** at any point **before returning the questionnaire**. The study is completely anonymous and will not require your name or age and as a result, once collected cannot be attributed to any one participant.

The questionnaires will be stored securely and transferred from paper record to electronic format and secured within a computer with up to date anti-virus software and password protection.

It is important that you understand that by completing and returning this questionnaire that you are giving consent to participate in this research.

Though you are under no obligation to, I would encourage you to answer every question as honestly as you can.

Once the questionnaires have been completed there will be an information sheet and contact details will be given so you may contact me and I can answer any questions you may have, please do not hesitate to ask.

I am required to remind you that this study can in no way serve as a diagnostic tool.

Thank you for taking the time to participate in this study.

Appendix C: Debrief Sheet

If you feel that completing this survey has brought up some negative feelings for you, please consider contacting some of the support services listed below, or speak to a friend, family member or professional.

Aware:

The Aware Support Line 1890 303 302

Available Monday – Sunday, 10am to 10pm.

Email for support at: supportmail@aware.ie

Samaritans

Call on: 116 123

Available 24hrs a day, 365 days a year. Free to call.

Email: jo@samaritans.org

Information

This study is centred around the differences in stress and depression scores between individuals diagnosed with ASD and those without such a diagnosis. Findings will be examined in a research report that will be submitted for grading and critique, it will also be presented in poster format.

Thank you for your answers. If you should have any questions, please do not hesitate to ask them. My contact details can be found below.

Email address: xxxxxxxxx

Appendix D: Questionnaire Questions and Scales

Please circle your response

1. Are you eighteen years of age or older?

Yes No

2. What sex are you?

Male Female

Before answering the following questions, please remember you are not obliged to do so in order to complete the questionnaire.

3. Are you currently in some form of licenced therapy with a mental health professional? (any mental health professional, counsellor, psychologist, psychotherapist, psychiatrist)

Yes No

If so, for how long have you been in therapy?

One to six days

One to three weeks

One to six months

Six months to one year

One year or more

Prefer not to say

Are you satisfied with your therapy thus far?

Yes No

If not, have you ever been in some form of licenced therapy with a mental health professional?

Yes No

If so, for how long were you in therapy?

One to six days

One to three weeks

One to six months

Six months to one year

One year or more

Prefer not to say

Were you satisfied with your therapy?

Yes No

4. Have you been diagnosed with ASD (Autism Spectrum Disorder), Asperger's syndrome or high-functioning autism?

Yes No

Instructions

The questions in this scale ask you about your feelings and thoughts during **THE LAST MONTH**. In each case, please indicate your response by placing an "X" over the circle representing **HOW OFTEN** you felt or thought a certain way.

	Never	Almost Never	Sometimes	Fairly Often	Very Often
	1	2	3	4	5
1. In the last month, how often have you felt that you were unable to control the important things in your life?	<input type="radio"/>				
2. In the last month, how often have you felt confident about your ability to handle your personal problems?	<input type="radio"/>				
3. In the last month, how often have you felt that things were going your way?	<input type="radio"/>				
4. In the last month, how often have you felt difficulties were piling up so high that you could not overcome them?	<input type="radio"/>				

Read each statement carefully. Please indicate how you feel about each statement.

Circle the "1" if you **Very Strongly Disagree**

Circle the "2" if you **Strongly Disagree**

Circle the "3" if you **Mildly Disagree**

Circle the "4" if you are **Neutral**

Circle the "5" if you **Mildly Agree**

Circle the "6" if you **Strongly Agree**

Circle the "7" if you **Very Strongly Agree**

1. There is a special person who 7 is around when I am in need.	1	2	3	4	5	6
2. There is a special person with 7 whom I can share my joys and sorrows.	1	2	3	4	5	6

3. My family really tries to help me. 7	1	2	3	4	5	6
4. I get the emotional help and support I need from my family. 7	1	2	3	4	5	6
5. I have a special person who is a real source of comfort to me. 7	1	2	3	4	5	6
6. My friends really try to help me. 7	1	2	3	4	5	6
7. I can count on my friends when things go wrong. 7	1	2	3	4	5	6
8. I can talk about my problems with my family. 7	1	2	3	4	5	6
9. I have friends with whom I can share my joys and sorrows. 7	1	2	3	4	5	6
10. There is a special person in my life who cares about my feelings. 7	1	2	3	4	5	6
11. My family is willing to help me make decisions. 7	1	2	3	4	5	6
12. I can talk about my problems with my friends. 7	1	2	3	4	5	6

Please read each statement and circle a number 0, 1, 2 or 3 which indicates how much the statement applied to you *over the past week*. There are no right or wrong answers. Do not spend too much time on any statement.

The rating scale is as follows:

- 0 Did not apply to me at all
- 1 Applied to me to some degree, or some of the time
- 2 Applied to me to a considerable degree, or a good part of time
- 3 Applied to me very much, or most of the time

1	I found it hard to wind down	0	1	2	3
2	I was aware of dryness of my mouth	0	1	2	3
3	I couldn't seem to experience any positive feeling at all	0	1	2	3
4	I experienced breathing difficulty (eg, excessively rapid breathing, breathlessness in the absence of physical exertion)	0	1	2	3
5	I found it difficult to work up the initiative to do things	0	1	2	3
6	I tended to over-react to situations	0	1	2	3
7	I experienced trembling (eg, in the hands)	0	1	2	3
8	I felt that I was using a lot of nervous energy	0	1	2	3
9	I was worried about situations in which I might panic and make a fool of myself	0	1	2	3
10	I felt that I had nothing to look forward to	0	1	2	3
11	I found myself getting agitated	0	1	2	3
12	I found it difficult to relax	0	1	2	3
13	I felt down-hearted and blue	0	1	2	3
14	I was intolerant of anything that kept me from getting on with what I was doing	0	1	2	3
15	I felt I was close to panic	0	1	2	3
16	I was unable to become enthusiastic about anything	0	1	2	3
17	I felt I wasn't worth much as a person	0	1	2	3
18	I felt that I was rather touchy	0	1	2	3
19	I was aware of the action of my heart in the absence of physical exertion (eg, sense of heart rate increase, heart missing a beat)	0	1	2	3
20	I felt scared without any good reason	0	1	2	3
21	I felt that life was meaningless	0	1	2	3