

## History of suicide attempts in adults with Asperger syndrome

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### Abstract

**Background:** Individuals with Asperger syndrome (AS) may be at higher risk for attempting suicide compared to the general population. **Aims:** This study examines the issue of suicidality in adults with AS. **Method:** An online survey was completed by 50 adults from across Ontario. The sample was dichotomized into individuals that had attempted suicide ( $n = 18$ ) and those that had not ( $n = 32$ ). We examined the relationship between predictor variables and previous attempts, and compared the services that both groups are currently receiving. **Results:** Over 35% of individuals with AS reported that they had attempted suicide in the past. Individuals that attempted suicide were more likely to have a history of depression and self-reported more severe autism symptomatology. Those with and without a suicidal history did not differ in terms of the services they were currently receiving. This study looks at predictors retrospectively and cannot ascertain how long ago the attempt was made. Although efforts were made to obtain a representative sample, there is the possibility that the individuals surveyed may be more or less distressed than the general population with AS. **Conclusions:** The suicide attempt rate in our sample is much higher than the 4.6% lifetime prevalence seen in the general population (Kessler, Borges, & Walters, 1999). These findings highlight a need for more specialized services to help prevent future attempts and support this vulnerable group.

*Keywords:* suicidality, depression, Asperger syndrome, autism,

It has been suggested that individuals with Asperger syndrome (AS) may be at particular risk for suicide compared to the general population (Mayes, Gorman, Hillwig-Garcia & Syed, 2013). In a recent survey of 42 adolescents and adults with AS, 15% reported that they had attempted suicide and almost half said that they had contemplated suicide (Balfe & Tantam, 2010). Given the high prevalence of suicidality reported in this population there is a need to examine what predisposes certain people with AS to attempt suicide. Individuals with AS have higher rates of known suicidal risk factors such as depression, emotional problems, and comorbid psychiatric disorders (Mukaddes & Fateh, 2010). There is also evidence that they are more likely to experience bullying and peer victimization (Shtayermman, 2007). Although clinicians have been aware of these issues for quite some time (Fitzgerald, 2007; Gillberg, 2002; Ghaziuddin, 2002), much of the detailed information on suicidality in adults with AS is limited to case studies and case series reports (Shtayermman, 2008; Spencer, Lyketsos, Samstald, Dokey, Rostov, & Chisolm, 2011). A recent study in children with Autism Spectrum Disorders (ASD) reported that older youth, those from lower SES or minority background and those with depression and behavioral problems were more likely to attempt suicide (Mayes et al., 2013). Although studies on youth with ASD can offer some insight into the factors that may predispose adults with AS to attempt suicide, beyond case descriptions no studies to date have examined predictors of suicidal behavior in this population.

The aim of this study was to identify demographic and clinical variables associated with suicide attempts in adults with AS. Given that the greatest predictor of a completed suicide in the general population is having previously attempted suicide

(Beautrais, 2003; Spirto & Esposito-Smythers, 2006), we also examined the types of supports that individuals with AS were receiving post-attempt.

## **Method**

### **Participants**

Participants were recruited through Asperger and Autism advocacy organizations and websites as part of a larger project on health service use in AS. Advertisements directed participants to a website where they could consent to participate in the study. The 79 individuals that consented were sent an individualized link to complete the survey online. Of these 79 individuals, 66 completed the survey. Of the individuals that consented but did not complete the survey, four withdrew because they did not meet the criteria for the study (i.e., they were a parent of a child with AS, rather than an individual with AS) and nine never completed the survey.

Of the 66 that completed the survey, only the 50 participants who scored 26 or higher on the Autism Spectrum Quotient questionnaire (AQ; Baron-Cohen, Wheelwright, Skinner, Martin, & Clubley, 2001; Woodbury-Smith, Robinson, Wheelwright, & Baron-Cohen, 2005) and who indicated a formal diagnosis of ASD/AS were included in the analysis (Age range = 18 - 61,  $M_{Age} = 34.5$ ,  $SD = 11.2$ ; 28 females, 22 males). Participants were from a range of income (range \$34,029 – \$115,205,  $M = \$58,136$ ,  $SD = 18,161$ ) and education levels, with majority (64%) reporting that they had attained a college diploma or higher. At the time of completing the survey many participants were in school (36%) and/or working or volunteering (44%), however 26% reported that they had no structured daytime activities. Majority of the individuals were unmarried (74%). When asked to rate their current level of distress on a scale from 1-not in crisis to 10-currently in crisis, most

participants indicated that they were not experiencing significant distress (78%,  $M = 5.3$ ,  $SD = 1.8$ ). For this analysis, the sample was dichotomized into those that answered yes they had attempted suicide in the past ( $n = 18$ ) and those that had not ( $n = 32$ ).

### **Measures**

**Demographic Variables.** We examined the demographic variables of age, gender, income and severity of AS. Income was estimated based on the mean income of the resident's postal code region (Statistics Canada, 2006).

**Severity of ASD.** ASD symptom severity was measured using the AQ questionnaire (Baron-Cohen et al., 2001). The questionnaire consists of five 10-item subscales: social skill, attention switching, attention to detail, communication, imagination. The subscales had moderate to high internal consistency (Cronbach's  $\alpha$  for social skill = .81, attention switching = .78, attention to detail = .74, communication = .80, imagination = .53). Total AQ scores can range from 0 to 50 with higher scores representing more severe Asperger symptomatology. A score of 26 is considered to be a reliable cutoff to screen for individuals with AS in a clinically referred sample (Woodbury-Smith et al., 2005).

**Psychiatric History Variables.** History variables were measured using a series of yes or no questions. Participants indicated whether they had issues in the past with depression or anxiety, if they had ever attempted suicide, if they had used mental health services in the last 2 months (Psychiatry, Psychology, Individual Counseling), and if they had trouble paying for services.

### **Data Analytic Strategy**

A series of t-tests (continuous variables) and chi-square tests (dichotomous

variables) were conducted to examine the bivariate relations among predictor variables and previous suicide attempts and to describe the current services received by individuals that attempted suicide relative to those that did not.

### **Results**

At the time in which they filled out the survey, individuals that attempted suicide and those that did not were similar in terms of age, income and marital status (see Table 1).

-Insert Table 1 here-

#### **Predictors of Suicide Attempts**

In our sample, 18 out of 50 adults (36%) reported a previous suicide attempt. More women attempted suicide than men, however gender was only marginally associated with attempts (see Table 2). Overall, both groups reported previous problems with anxiety and depression. However, individuals that attempted suicide were more likely to report problems with depression compared to individuals that had never attempted. They were also more likely to have a higher AQ score than their non-suicidal counterparts, suggesting more severe autism symptomatology. Those that attempted suicide scored significantly higher on the attention switching and communication subscales of the AQ.

-Insert Table 2 here-

#### **Present MH Service Use**

Overall, 67% percent of the suicide attempters and 59% of the non-attempters reported receiving at least one mental health (MH) service in the last 2 months, and both groups received on average an equal number of MH services (see Table 3). Despite the two

groups having similar income, there was a trend suggesting that individuals who previously attempted suicide had greater difficulty affording services.

-Insert Table 3 here-

### **Discussion**

This is the first study to investigate suicide attempts in a larger sample of adults with AS. The 36% suicide attempt rate reported in our sample of 50 adults with AS is much higher than the 4.6% lifetime prevalence rate seen in the general population (Kessler et al., 1999). Similar to the general population females were slightly more likely to have attempted suicide than males, as were individuals with a history of depression (Canetto & Sakinofsky, 1998; Kessler et al., 1999).

Interestingly, the severity of self-reported AS symptoms was related to suicide attempts. Other studies have shown relationships between deficits in social competence and social problem solving skills and depressive and anxiety symptoms (Rosbrook & Whittingham, 2010). Although this could in part explain why individuals with high AQ scores are more likely to attempt suicide, we did not find the social subscale to be predictive of previous attempts. Only the attention switching and communication subscales were higher in those that previously attempted suicide. It may be that communication impairments exacerbate difficulties in asking for help and deficits in attention switching could cause greater rumination or create additional challenges when having to cope with change. Further research is needed to examine ASD symptom profiles and comorbidities in the two groups, ideally with the measurement of symptoms occurring prior to, and not after a suicide attempt.

An overwhelming portion of adults in our sample reported having struggled with depression and anxiety in their lifetime, with over 35% actually having attempted suicide. These results highlight the need for mental health services targeted towards individuals with AS. Although there is evidence that over half of the sample received some type of psychiatric or counseling service in the two month period prior to filling out the survey, it is difficult to ascertain whether these services sufficiently addressed the specific difficulties faced by individuals with AS. General mental health practitioners may not be comfortable treating these patients (Brookman-Fraze, Drahot, Stadnick & Palinkas, 2012), and mental health specialists focused on AS are difficult to access (Krauss, Gulley, Sciegaj, & Wells, 2003; Stoddart et al., 2013). It is therefore important to be able to respond to adults with AS who are struggling with mental health issues, particularly depression, before it reaches crisis. Given that research in the general population suggests that having access to clinical care and ongoing support from mental medical and mental health professionals is a protective factor against suicide (Chesley & Loring-McNulty, 2003), it is somewhat concerning that individuals who previously attempted suicide might be having difficulties in affording the services they need.

### **Limitations**

The current study is limited to looking at predictors retrospectively and cannot ascertain how long ago the individual attempted suicide. The length of time that has passed since the attempt and the current psychological state of the individual should be driving the types of services that are currently in place and this information is lacking in the present study. Even though attempts were made to attain a representative sample of this population, it is possible that the individuals could have been more or less distressed than

the general population with AS. The information presented here, albeit preliminary, argues that the issue is of relevance and requires more in depth study.

### **Conclusions**

The results of this study indicate that individuals with AS are at higher risk for suicide than is reported for the general population, and depression as well as certain features of the AS symptomatology may be associated with the likelihood of attempting. More research is needed to understand the predictors of suicide in the months leading up to the attempt. Future prospective research with this cohort will examine the interplay between the services the individual is receiving, life events and mental health issues prior to suicide attempts.

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Table 1

*Sample demographics of adults with AS (N=50) that did and did not attempt suicide*

	<b>Attempted Suicide (n = 18)</b>	<b>Did not Attempt Suicide (n = 32)</b>	<b>X<sup>2</sup>/t</b>
Age <i>M</i> (SD)	36.3 (11.6)	33.4 (11.0)	0.88
Income <i>M</i> (SD)	54062.5 (16340.6)	60427.7 (18971.0)	-1.20
Marital Status <i>n</i> (%)			
Married/living with partner	6 (33.3)	7 (21.9)	0.79
Unmarried	12 (66.6)	25 (78.1)	

*Note.* †  $p < .10$     \*  $p < .05$     \*\*  $p < .01$

Table 2

*Predictors of suicide attempts in adults with AS (N = 50)*

	<b>Attempted Suicide (n = 18)</b>	<b>Did Not Attempt Suicide (n = 32)</b>	<b>X<sup>2</sup>/t</b>
<b>Demographic Predictors</b>			
Gender n (%)			
Females	13 (72.2)	15 (46.9)	3.00†
Total AQ Score <i>M</i> ( <i>SD</i> )	39.6 (4.3)	36.3 (5.7)	2.13*
Social Skill	8.4 (1.6)	7.7 (1.9)	1.26
Attention Switching	9.4 (0.9)	8.3 (1.8)	2.95**
Attention to Detail	7.1 (1.6)	6.8 (1.9)	0.64
Communication	8.7 (1.7)	7.4 (2.0)	2.26*
Imagination	5.9 (1.9)	6.1 (1.9)	-0.27
<b>Psychiatric History</b>			
Depression n (%)	18 (100)	26 (81.3)	3.84†
Yes			
Anxiety n (%)	18 (100)	29 (90.6)	1.80
Yes			

*Note.* †  $p < .1$       \*  $p < .05$       \*\*  $p < .01$

Table 3

*Health service use of adults with AS (N = 50) in the 2 month period prior to participating in the survey*

	<b>Attempted Suicide (n = 18)</b>	<b>Did Not Attempt Suicide (n = 32)</b>	<i>X<sup>2</sup>/t</i>
<b>Services used in 2 months n (%)</b>			
Any Service	12 (66.6)	19 (59.4)	0.26
Psychiatrist/Psychologist	9 (50.0)	13 (40.6)	0.41
Individual Counseling	11 (61.1)	15 (46.9)	1.42
Difficulty Affording Services <sup>a</sup>	11 (78.6)	11 (50.0)	2.94†

*Note.* †  $p < .1$       \*  $p < .05$       \*\*  $p < .01$

<sup>a</sup> N = 36 for this question

