

Research Article

Reexamining Suicidal Ideation and Clinical Disorders in Adolescents Diagnosed with Asperger Syndrome: Linking the Riddle and the Enigma

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Abstract

Limited number of studies have examined suicide and Autism Spectrum Disorders (ASD). This study reexamined the relationship between Asperger Syndrome (AS) and suicidal ideation in a sample of adolescents. Of the 14 individuals studied, 21.4% reported on high levels of suicidal ideation, and 28.6% met criteria for Major Depressive Disorder. Moreover, 15.4% of the sample met the criteria for Generalized Anxiety Disorder (GAD). Suicidal ideations were correlated with peer victimization. Differences were found in levels of suicidal ideation between those meeting diagnostic criteria for MDD and the ones who did not. Scores of individuals with MDD were higher compared to ones who did not meet criteria for MDD. Implications for practice and research were discussed pertaining to the DSM-5 criteria for ASD.

Keywords: Autism Spectrum Disorders (Asd); Asperger Syndrome (As); Risk Factors; Suicide; Suicidal Ideation

Introduction

According to the World Health Organization (World Health Organization [1] suicide is among the three leading causes of death among those aged 15-24 years in some countries, and the second leading cause of death in the 10-24 years age group; these figures do not include suicide attempts which can be more frequent than suicide (10, 20, or more times according to some studies). In the vast majority of the literature on suicide, both suicidal completion and suicidal attempts presents themselves with elevated levels of suicidal ideation [2]. According to [3], the presentation of suicidal behavior among individuals diagnosed with Autism Spectrum Disorders (ASD) is understated. In addition, very little attention is given in the field of ASD to suicide in this population. To date, only four published primary research studies explored the spectrum of suicide among individuals with ASD [4]. Of the four published studies only one explored levels of suicidal ideation among individuals with a diagnosis of Asperger Syndrome (AS) [5]. In May 2013, The Diagnostic and Statistical Manual of Mental Disorders [6] (5th ed.; DSM-5; American Psychiatric Association, 2013) made changes to the previously used Pervasive Developmental Disorders criteria used to assess ASD. Still, the new DSM-5 indicate that individuals with an ASD diagnosis will

present with deficits in social or emotional reciprocity, deficits in nonverbal behavior and communication and deficits in developing or maintaining relationships. Although the classification system has changed, much of the symptoms associated with the diagnosis have remained the same. Individuals diagnosed with AS are considered to have developed language and intellectual capacities [7].

These attributes can serve as a protective factor when evaluating and examining individuals diagnosed with AS for risk of suicide however. Additional symptoms classify individuals with as emotionally detached [8], which may increase their vulnerability to developing elevated levels of suicidal ideation.

Literature Review

Autism Spectrum Disorders & Recent Diagnosis Changes

According to the Centers for Diseases Control and Prevention (CDC), it was estimated that one out of 88 children are diagnosed with an Autism Spectrum Disorder (ASD); this is a tenfold increase in prevalence in the past 40 years [9]. In the DSM-IV-TR, the umbrella of Pervasive Developmental Disorders (PDD), also known as Autism Spectrum Disorders (ASD), included individuals diagnosed with Asperger's syndrome (AS), Pervasive Developmental Disorder-Not Otherwise Specified (PDD-NOS), or High-Functioning Autism (HFA) who were typically classified as

high functioning [10]. Individuals diagnosed with an ASD display permanent neurodevelopment deficiencies that affect activities, social interactions, and communication. In the recent changes made to the ASD in the DSM-5, the new classification included severity levels [6]. The levels included in the new DSM-5 [6] are: level 1 which requires support, level 2 which requires substantial support, and level 3 which requires very substantial support. In each of the abovementioned levels, there is an evaluation of the social communication domain and the existence as well as severity of restricted and repetitive behaviors. Because the current study completed data collection when the DSM-IV-TR was in use, the assessment of Asperger Syndrome was used as the diagnosis associated with suicidal ideation.

Suicide Spectrum & the Link to Autism Spectrum Disorders

Suicide is a continuation of thoughts, behaviors and activities in which a person expresses a wish to die or make an attempt to end their life. The crucial part suicidal ideation plays in forecasting suicide attempts and completion makes it an appropriate target for assessment and treatment [11]. According to [12] the annual rates of suicide worldwide are 12 per 100,000 for males and 14.2 per 100,000 per females in the age group of 15-24 years. Because there are very few studies that focused on suicidal ideation among individuals diagnosed with ASD, much of the information presented from this point will be related to suicidal behaviors in general which include suicidal ideation. Challenges in the assessment and identification of suicidal ideation among individuals diagnosed with ASD are partially related to comorbid disorders associated with the diagnosis of autism [13]. Many individuals who are diagnosed with ASD are also diagnosed with mood or anxiety related disorders or reporting on peer victimization [5]. These comorbid disorders can significantly elevate levels of suicidal ideation and behaviors [12]. In a study attempting to compare profiles of individuals who attempted suicide to those who did not, 7.3% of those who were admitted to the hospital due to a suicide attempt also met the diagnostic criteria for AS [14]. A recent unexpected finding suggested that individuals diagnosed with AS may present with more progressive communication skills and so are better able to cope with stressors within their environment and decrease the presence of suicidal ideation [15]. Because suicidal ideation and behavior present mostly during adolescence, individuals in that age group diagnosed with ASD should be assessed for suicide as they may be at a higher risk for developing suicidal behavior in part due to their ASD diagnosis [16].

Risk Factors for Suicide among Individuals with AS

The literature on suicide and suicidal behavior has included various risk factors in relation to the phenomena among adolescents and young adults. The distal and proximal risk factors for suicide

framework [17] offer a view of risk factors for suicide as related to the individual such as psychopathology, hopelessness, genetic issues, and environmental factors such as peer victimization, bereavement, and loss. The absence of significant existing data on the incidence of suicidal ideation among adolescents and young adults diagnosed with AS make it an important subject for examination. While there is a small but increasing body of evidence that supports the occurrence of comorbid disorders among individuals diagnosed with AS, these studies have limited generalizability due to the use of small nonprobability samples. Unusually high rates of stereotypic behavior can be found among individuals diagnosed with ASD [18]. It is defined as the sequence of monotonous movements that have no apparent consequences for the individual who is producing them [19]. These kinds of behaviors can lead to stigma. Since stigma rises once an individual differs from the central societal norms in relation to a specific realm, the person's entire character is defined by that realm, and the individual is being degraded by those who hold such views [20].

This may also lead to an issue of underreporting of suicide or suicidal acts among individuals diagnosed with AS. One source of suicide stigmatization results from misunderstandings about the causes of suicide. For example, many people erroneously believe that people who die by suicide are selfish or weak [21,22]. Unfortunately, those who survive a suicide attempt often experience severe stigmatization, for example, they may be labeled as "attention seekers"[23]. The family members of a person who has died by suicide have also experienced significantly greater perceived rejection, shame, and stigma than other be [24] reaved groups. This study investigated the risk factors for suicidal ideation among adolescents and young adults diagnosed with ASD. The study used the same methodological approach and measures used in a previously published study [5].

Methods

Study Design

This was a cross-sectional descriptive and associational study of individuals diagnosed with AS between the ages 15-24 years using an online self-administrated questionnaire. The questionnaire had two parts; one part was completed by a parent and another part was completed by the individual diagnosed with AS. The design had backward directionality and retrospective timing. The age and cognitive abilities of this population, and the measures selected, were appropriate for this method of data collection. The weakness of the design was that because it was completed online, many of the potential participants were not included in the final analysis as they did not respond to all parts of the questionnaire. In addition, recall of information may have been an issue when answering questions pertaining to suicidal ideation and comorbid disorders.

Sampling Plan

The target population was adolescents and young adults in the United States ages 15 to 24 years old who were diagnosed with AS. The unit of analysis as well as the inclusion criteria was the individual adolescent or young adult with AS. Advertisement of the study was placed on several websites specifically for individuals on the ASD and their parents after an IRB approval. A non-probability sampling, using a purposive sampling technique, was used to collect data. A total of 20 parents completed the survey. Of these 20 parents, 14 of their children completed the part for the individuals diagnosed with AS. The strength of this sampling plan was the appropriateness of this method in relation to the research question: What are the risk factors for suicidal ideation among adolescents and young adults diagnosed with AS? Some of the limitations of this sampling method were the ability to generalize findings due to the use of a non-probability sample and the time that was spent collecting the data as well as a small sample achieved at the end of the study.

Measures

The Suicidal Ideation Questionnaire (SIQ) [25] was used to measure the level of suicidal ideation. The adolescent version of this scale involves 30 items that measure suicidal ideation in the previous month. Adolescents and young adults were asked to specify whether they had each of the 30 thoughts in the former month. Examples include: “I thought about people dying,” “I thought about writing a will,” and “I thought about having a bad accident.” There are 7 Likert-type response categories ranging from “Almost every day” (= 6) to “I never had this thought” (= 0). The Cronbach’s alpha for the SIQ was .97 in a sample of 890 adolescents that was half male and half female and had a mean age of 16.1 years. Information on clinical characteristics of Major Depressive Disorder (MDD) and Generalized Anxiety Disorder (GAD) were obtained using the Patient Health Questionnaire for Adolescents (PHQ-A). The Patient Health Questionnaire for Adolescents (PHQ-A) is a self-report measure that assesses mood, anxiety disorder, and other disorders in adolescent primary care patients [26]. The PHQ-A was designed to quickly obtain data to determine whether or not it is probable that an adolescent respondent currently has an anxiety or depression disorder. The Social Experience Questionnaire [27] was used to measure peer victimization. This is a summated rating scale and had three subscales that measured: Overt Victimization, Relational Victimization, and Recipient of Prosocial Behaviors. Each of the subscales had 5 items and the total scale has 15 items. Higher scores indicated more severe victimization.

Results

(Table 1) shows the socio-demographics characteristics of the parents in the study. From the sample, 65% identified themselves as females and about 70% of the sample were married

with 90% reporting a Caucasian racial/ethnic background. Fifty percent of the sample were employed full time and 25% of the parents completing the questionnaire had a Bachelor degree. About 35% of the sample had an income of over 100,000 dollars per year. The parent reported an average age of the child to be 16.6 years (SD=1.5).

	N	%
Gender		
Male	7	35.0
Female	13	65.0
Marital Status		
Married	14	70.0
Divorced	5	25.0
Widowed	1	5.0
Racial/Ethnic Group		
African American	1	5.0
Caucasian	18	90.0
Hispanic/Latino/Latina	1	5.0
Education		
High school or GED	3	15.0
Some college	7	35.0
Associate Degree	2	10.0
Bachelor Degree	5	25.0
Master’s Degree	2	10.0
Doctorate or JD Degree	1	5.0
Education of Second Parent		
High school or GED	5	25.0
Some college	5	25.0
Associate Degree	2	10.0
Bachelor Degree	4	20.0
Master’s Degree	3	15.0
Doctorate or JD Degree	1	5.0
Employed		
Not employment or F/t	4	20.0
Homemaker	4	20.0
Employed Part-time	10	50.0
Employed Full-time	1	5.0
Self-Employed	1	5.0
Retired		
Income		
Less than \$20,000	2	10.0
\$20,001 to \$50,000	8	40.0
\$50,001 to \$100,00	3	15.0
Over \$100,000	7	35.0

Table 1: Socio-demographics of the parent.

(Table 2) presents the socio-demographics of the child diagnosed with AS. The reason there is a smaller sample size of the adolescent or young adult who participated in the study is because some of the participants did not complete all the items of

the data collection instrument and therefore needed to be excluded from the analyses. All the sample participants were males and a majority of them (95%) were Caucasian and had less than high school education (78.6%). When exploring the clinical and diagnostic characteristics of the child see (Table 3), 21.4% of the sample had clinically significant levels of suicidal ideation, 28.6% met the diagnostic criteria for Major Depressive Disorder (MDD) according to DSM-IV-TR, and 15.4% met the diagnostic criteria for GAD (Generalized Anxiety Disorder).

	N	%
Gender		
Male	14	100.0
Racial/Ethnic Group		
Caucasian	19	95.0
Hispanic/Latino/Latina	1	5.0
Education		
Less than a high school diploma	11	78.6
High school diploma or GED	1	7.1
Some college	1	7.1
Other	1	7.1
Employed - Yes	1	7.1
Income		
Less than \$20,000	14	100.0
Where does Child with ASD Live		
With both biological parents in same house	9	45.0
With both biological parents in joint custody	1	5.0
With 1 biological parent	8	40.0
With a relative other than parent	1	5.0
Other	1	5.0
Type of Educational Setting ASD Child		
Currently Attending		
Special education class	1	5.0
Inclusive class	6	30.0
Other	13	65.0

Table 2: Socio-demographic Characteristics of Child.

	N	%
Clinically Significant Suicidal Ideation		
Yes	3	21.4
No	11	78.6
Diagnosis of MDD		
Yes	4	28.6
No	10	71.4
Diagnosis of GAD		
Yes	2	15.4
No	11	84.6

Table 3: Diagnostic Characteristics of the Child.

	Range	Mean	SD
Level of Suicidal Ideation	0-180	22.8	35.7
Total Number of Depressive Symptoms	0-8	1.4	2.1
Level of Overt Victimization	5-25	7.9	4.3
Level of Relational Victimization	5-25	9.1	4.7
Amount of Prosocial Recipient Behavior	5-25	13.9	3.3
Level of Total Victimization	15-71	31.0	7.9

Table 4: Clinical and Environmental Factors.

(Table 4) presents the clinical and environmental factors related to suicide in this population. Individuals who participated in this study reported on relatively high levels of overt and relational victimization, 7.9 and 9.1 respectively. The cutoff score for the overt victimization subscale is 3.9 and is 4.3 for the relational victimization subscale.

Although there were no significant differences found in the levels of suicidal ideation between individuals who met the diagnostic criteria for MDD and the ones who did not meet the diagnostic criteria for MDD, we saw a trend toward significance and an indication that the individuals who met the diagnostic criteria for MDD scored on average 28.3 on the SIQ. The cutoff score for a clinically significant level of suicidal ideation is 31. Similar results were found in relation to individuals who met the diagnostic criteria for GAD with an average 27.5 score on the SIQ.

	Mean	t
Diagnosis of MDD		
Yes	28.3	-.349
No	20.6	
Diagnosis of GAD		
Yes	27.5	-.184
No	22.0	
* trend towards significance * p < .05		

Table 5: Results of Mean Testing on Level of Suicidal Ideation.

(Table 6) presents the bivariate correlations between level of suicidal ideation and the clinical characteristics. There was a moderately strong correlation between levels of suicidal ideation and overt victimization ($r=.68, p<.05$) as well as a moderately strong correlation between levels of suicidal ideation and relational victimization ($r=.57, p<.05$).

	r
Age	.424
Total Number of Depressive Symptoms	.422
Number of Child's Characteristics	-.237
Number of Child's Behaviors	-.318
Level of Overt Victimization	.682*
Level of Relational Victimization	.577*
Amount of Prosocial Recipient Behavior	-.580*
Level of Total Victimization	.469
^a trend towards significance * p < .05	

Table 6: Bivariate Correlation with Level of Suicidal Ideation.

Discussion

Clinical Implications

According to the findings presented in this study, suicidal ideation among individuals diagnosed with ASD and AS specifically, appears to be a clinically important problem. The prevalence of level of suicidal ideation in this population continues to be high and consistent with previously explored rates and similar to the rates presented by their peers who are neurotypical [28]. Findings from this study pertaining to the appearance of comorbid disorders among individuals diagnosed with AS are consistent with previously published reports [29]. Assessment of comorbid disorders and levels of suicidal ideation among individuals diagnosed with ASD is encouraged as these individuals are at the same or higher risk for elevated levels of suicidal ideation as their neurotypical counterparts. Clinical interventions should address specific needs of individuals diagnosed with as each person will present with various levels of functioning and abilities as well as challenges. Because parents are the primary care providers, including them in the assessment process is crucial as they can provide data about the child that may not be presented by the individual on the spectrum. Assessment of risk factors should include both distal and proximal risk factors for suicidal ideation.

Limitations and Strengths

Lack of significant research on the topic presented limitations in available background and literature review for this study. One of the major limitations in this study was the small sample size. The representativeness of the study population limits generalizability only to individuals who are diagnosed with AS and who were familiar with the websites the survey was placed on for data collection purposes. Individuals who completed the survey online also did not answer all the questions, which did not allow the use of

the responses for analyses purposes as much of the data collected was in the format of scales and standardized measures. This study has numerous methodological and theoretical strengths. The usage of standardized scales to assess for levels of suicidal ideation and comorbid disorders assisted in obtaining a more precise report of the disorder. The use of a Web-based survey allowed for an inclusion of a larger geographical area for participant's recruitment.

Research Implications

The development of a risk assessment protocol and evaluation for suicidal ideation among individuals with ASD is requiring attention and future focus. For a population at risk for development of comorbid disorders and suicidal ideation, a comprehensive evaluation of risk factors in research would assist in early identification and treatment services provided to individuals on the spectrum. Considering the recent changes to the DSM-5 it will be beneficial to evaluate the association between autism spectrum disorder level 1 and levels of suicidal ideation as it may be the level most closely related to AS in the previously published DSM-IV-TR. Access to a larger community based sample may assist in providing a more accurate profile of individuals on the spectrum who may be at risk for suicidal ideation and will assist in the generalizability of findings regarding individuals with ASD and the link the diagnosis has to suicidal ideation.

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