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# TOPIC : CO-MORBID CONDITIONS

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## Co-Morbidity Rates and Types in Individuals with Autism

Individuals with Asperger's Syndrome are often misunderstood as they do not present the same symptoms as individuals with other Autism Spectrum Disorders (ASD). Many people with Asperger's Syndrome are diagnosed later in life and lose out on the benefits of early intervention. Many people with Asperger's Syndrome also have co-morbid conditions that make their struggle with learning, social navigation and employment more difficult.

### A. General Occurrence of Co-Morbid Psychiatric and Medical Conditions

Ghaziuddin (2002) surveyed several studies to see what types of psychiatric and medical conditions were also present in individuals with Asperger's Syndrome. He suggested that the criteria for someone to be diagnosed with Asperger's Syndrome were often unclear and the studies implied that the condition was often not understood as well as other Autism Spectrum Disorders. He also suggested that Asperger's Syndrome was often very broadly defined and individuals with many different deficits and struggles could be diagnosed with Asperger's Syndrome.

#### Methodology & Findings of the Study

This study undertook a literature review on the topic of co-morbid conditions of Asperger's Syndrome. It was found that in all the studies about co-morbid psychiatric disorders, the majority of the participants had at least one co-morbid psychiatric disorder. Some of which were depression, Attention Deficit Hyperactivity Disorder (ADHD), Obsessive Compulsive Disorders (OCD), and various forms of bi-polar type mood disorders (cyclothymia, bi-polar disorder, etc.). None of the participants were diagnosed with co-occurring schizophrenia. The researcher found that behavioral disorders, such as hyperactivity, were more common in children. Mood disorders, such as depression, were more common in adolescents and adults with Asperger's Syndrome. There were no definitive studies which suggest that individuals with Asperger's Syndrome are more prone to violent behavior, despite claims of this in past studies.

Ghaziuddin (2002) studied several researches that focused on individuals with Asperger's Syndrome and co-morbid medical conditions and found that individuals with Autism were more likely to have a co-occurring medical condition than individuals with Asperger's Syndrome. People with Asperger's Syndrome who also had a medical condition most often had seizure disorders, chromosome abnormali-

ties, and sleep disturbances. Co-morbid medical conditions appear to be less common than co-morbid psychiatric conditions in people with Asperger's Syndrome.

#### Recommendations:

*Future studies could focus on assessment tools for co-morbid conditions and also educational strategies for individuals with Asperger's Syndrome accompanied by co-morbid conditions.*

### B. Relationship of Social Attribution Processes and Co-Morbid Psychiatric Issues in People with Asperger's Syndrome

Meyer, Mundy, Van Hecke, & Durocher (2006) studied the relationship between social attribution processing in children with Asperger's Syndrome and the occurrence of co-morbid psychiatric conditions. The researchers hypothesized that people with Asperger's Syndrome who had information processing/social attribution difficulties would also have psychological difficulties.

#### Methodology:

This study employed a between-group comparison design. All participants were given the same assessment tools and then the results were compared with particular attention to the ability to read social cues in combination with co-morbid psychological difficulties in the same participants.

There were thirty one (31) participants with Asperger's Syndrome in this study. Twenty six (26) were boys and five (5) were girls. All participants with Asperger's Syndrome showed high abnormalities in understanding social cues, showed restricted behavior and interests, and showed no language or cognitive delays. A comparison group was used that consisted of thirty three (33) children (24 boys and 9 girls) who did not have symptoms of Asperger's Syndrome or Autism.

The assessment tools of "Why Kids Do Things" task, personality reports, social competence inventories, and video vignettes involving social interactions that were viewed and coded for social cues by the participants were utilized in this study for both groups of children. Participant scores on scales measuring Asperger's Syndrome, co-morbid psychological difficulties and the participants' ability to recognize social cues were compared for both groups.



### **Outcomes/Results:**

The researchers found that children with Asperger's Syndrome exhibit high rates of social stress and social anxiety and that they seem to be aware of their social differences. These children showed lower levels of competence in understanding social situations and nuances of social behavior. Children with Asperger's Syndrome were sometimes lower in empathy than their typical peers and, those that were, showed more aggressive responses to the social scenarios they were shown during testing. The research also suggested that social decoding problems and social cognitive weakness may exacerbate the aggression. It was remarkable that children who showed greater social awareness may also show a higher rate of co-morbid psychiatric disturbance. Their higher self and social awareness allow them to understand their own difficulties in the social realm.

### **Recommendations:**

Further research may examine programs that address social problem solving and programs that promote positive social experiences for children with Asperger's syndrome to see how effective these interventions are.

### **References**

**Ghaziuddin, M. (2002).**

Asperger syndrome: Associated psychiatric and medical conditions.

Focus on Autism and Other Developmental Disabilities, 17(3), 138-144.

**Meyer, J.A., Mundy, P.C., Van Hecke, A.V., & Durocher, J.S. (2006).**

Social attention processes and comorbid psychiatric symptoms in children with asperger syndrome. Autism, 10 (4), 383-402.



## Specific Co-Morbid Psychiatric and Sensory Conditions in Individuals with Autism

Based on several studies, the prevalence of co-morbid psychiatric conditions in individuals with Autism seems to be higher than in the general population. Several studies have explored the presence of co-morbid Attention Deficit Hyperactivity Disorder (ADHD), anxiety, depression and Obsessive Compulsive Disorders (OCD) in people with Autism. There are several other conditions that present themselves periodically in individuals with Autism and they deserve to be viewed in a clinical manner as well due to their effects on the lives of individuals diagnosed with Autism.

### A. Catatonia

A study by Kakooza-Mwesige, Wachtel, & Dhossche (2008) examined Catatonia in individuals with Autism. Catatonia, according to the authors of this study, manifests itself as abnormalities of movement and speech patterns. Catatonia is often present with other psychiatric symptoms that people with Autism rarely manifest, such as hallucinations and delusions. This study suggests that catatonic symptoms usually start in people with Autism between the age of ten (10) and seventeen (17) and is often characterized by slowness (sometimes to an extreme level) and freezing.

#### Methodology:

A case study and literature review was carried out for this research. The case was for a male diagnosed with Autism at the age of three (3). This subject was studied from early childhood through his late twenties for co-occurring symptoms of Catatonia.

#### Findings:

The subject was observed to have exhibited symptoms of Catatonia starting at the age of five (5) years. The presence of catatonic symptoms did not create major challenges until his teens and into his adulthood. He was treated with psychotropic medications with little benefit, but when he was given electroconvulsive therapy treatments, he was able to function better, with the effects of Catatonia reduced significantly. He was able to live at home and return to his normal activities including the ability to feed himself and speak to others. The researchers suggest that sometimes the effects of psychotropic medications produce symptoms of Catatonia in people with Autism that become chronic. Electroconvulsive therapy seems to be an effective treatment for Catatonia in this population but the authors stress that it is often not acceptable to family members of individu-

als with Autism due to the idea that it could cause brain damage and stigmatization.

#### Recommendations:

*The researchers suggest that future studies of this topic could focus on the genetic or biological link between Autism and Catatonia.*

### B. Tics and Tourette Syndrome

Canitano & Vivanti (2007) studied the occurrence of Tourette syndrome and tics (both vocal and motor) in people with Autism. The researchers suggest that Tourette syndrome and Autism share many characteristics but what may look like tics in Autism are often stereotypies and people with Autism engage more in Echolalia than vocal tics. The authors of this study wanted to define the features of people with both Autism and tic disorders and also to explore the prevalence of tic disorders in children with Autism.

#### Methodology:

This study employed a survey across participants. Severity of symptoms of tics in children and adolescents with Autism were observed. They were identified as either tics or stereotypies from their different presentations. A total of one hundred five (105) participants (94 males and 11 females) with the mean age of twelve (12) years were evaluated with the Yale Global Tic Severity Scale.

#### Result:

The researchers found that 22% of participants in their study had tics. Half of these individuals had chronic motor tics and half had Tourette syndrome (which includes vocal tics). In the group of individuals who had co-morbid Tourette syndrome or chronic motor tics, eleven (11) individuals had a profoundly impaired developmental level and were unable to succeed in simple tasks, including toilet training and struggled with even simple social skills. The researchers found that 59.5% of participants who had co-morbid conditions had a family history of tic disorders.

#### Recommendations:

*The researchers suggest that future studies include more evaluation techniques, rather than just one comprehensive clinical evaluation. They also recommend that future studies use participants who have not been treated with psy-*



chotropic medication due to the ability of such medication to sometimes mask symptoms. Using a larger sample size is also recommended.

### C. Sensory Modulation Symptoms

A study by Ben-Sasson, et.al. (2009) studied existing literature for sensory modulation issues in individuals with Autism Spectrum Disorders. The researchers studied several factors related to the incidence and prevalence of sensory issues, as well as whether having high or low sensory thresholds is a source of interest or discomfort to individuals with Autism.

#### Methodology:

This study was a meta-analysis of already existing literature on the presence of sensory modulation difficulties in participants with Autism. Several studies were divided into groups:

- studies that included participants aged 0-3.4 years;
- studies that included participants 3.5-6.4 years;
- studies that included participants 6.5-9.4 years; and
- studies that included participants 9.5 years and older.

The authors also further divided the studies into those that contained 80% or more individuals with Autism and those that contained less than 80% individuals with Autism. There were also thirteen (13) studies that included a typically developing comparison group and four (4) studies that included a developmental disability comparison group.

#### Findings:

The researchers found that there were significant differences between individuals with Autism and typically developing individuals in sensory under-responsivity (the most significant difference), over-responsivity and sensory seeking (the least significant difference). The authors found that children with Autism showed an increase in sensory seeking and over-responsivity until the age of 6-9 years and then the behavior starts to decrease. The highest rate of sensory type behaviors was shown in the 6-9 year old group. The researchers suggest that this is the age when sensory type behaviors become more prevalent. This may be largely due to the fact that many 6-9 year olds start to become involved

in their school systems.

#### Recommendations:

The researchers suggest that future studies could focus on adults with Autism and the sensory difficulties they may have. In addition, studies that explore the role of age on these types of behaviors should likewise be conducted.

#### References

- Ben-Sasson, A., Hen, L., Fluss, R., Cermak, S.A., Engel-Yeger, B., & Gal, E. (2009). A meta-analysis of sensory modulation symptoms in individuals with Autism spectrum disorders. *Journal of Autism & Developmental Disorders*, 39, 1-11.
- Canitano, R. & Vivanti, G. (2007). Tics and Tourette syndrome in Autism spectrum disorders. *Autism*, 11(1), 19-28.
- Kakooza-Mwesige, A., Wachtel, L.E., & Dhossche, D.M. (2008). Catatonia in Autism: Implications across the lifespan. *European Child & Adolescent Psychiatry*, 17(6), 327-335.



## Co-Morbid ADHD in Individuals with Autism

Attention Deficit Hyperactivity Disorder (ADHD) is one of the most common co-morbid psychiatric conditions that people with Autism display. A diagnosis of ADHD often adds to the challenges that people with Autism are already struggling with and often brings new challenges as well.

### A. Pervasive Developmental Disorder (PDD) and ADHD

Goldstein & Schwebach (2004) studied the benefits of possibly removing the fact that a co-morbid diagnosis of ADHD is excluded when a child is diagnosed with Pervasive Developmental Disorder (PDD). The researchers contend that the child would be better served by having the co-morbid diagnosis so that services that will address symptoms of both conditions can be accessed.

#### Methodology:

The participants in this study were fifty seven (57) children. Fifty (50) were males and seven (7) were females. Thirty seven (37) had been diagnosed with either PDD or Autism (PDD- n= 28; Autism- n= 9) and twenty (20) had been diagnosed with ADHD. The researchers surveyed already existing files of the participants to determine the presence or absence of co-occurring ADHD in children with Autism Spectrum Disorders. The researchers grouped the participants based upon the results of several assessment tools. The following categories were created:

- PDD with significant inattentive type ADHD symptoms;
- PDD without ADHD symptoms;
- PDD with significant combiner type ADHD symptoms;
- ADHD only inattentive type;
- ADHD only combined type.

#### Outcomes/Results:

The results of this study showed that:

- 26% of the children diagnosed with PDD also met the criteria for a diagnosis of ADHD- combined type.
- 33% of the children diagnosed with PDD also met the criteria for ADHD inattentive type.
- 41% of the children diagnosed with PDD did not meet the diagnostic criteria for ADHD.

The researchers required that the participants show significant ADHD symptoms across multiple environments. Even though some of the participants showed these symptoms in one environment, there was no data about other environments so these participants could not be included as having shown significant ADHD symptoms. The researchers stress that clinicians always assess how significant an impact an individual's symptoms has on his or her life. The researchers also found that children with PDD and co-morbid ADHD, while not seeming to have more impairment, statistically show more challenges in their activities.

#### Recommendations:

*The researchers suggest that future research could study a larger sample and also study participants who have ADHD to check for PDD symptoms in these participants to determine the rates of co-morbid PDD in children with ADHD as their primary diagnosis.*

### B. Comparisons of Children Diagnosed with Autism and ADHD, ADHD only and ADHD with multiple tics

Gadow, DeVincent, & Schneider (2009) studied comparisons between children diagnosed with ADHD only, ADHD with Autism and ADHD with chronic multiple tic disorder. The researchers were specifically looking for common points in the development of these disorders by studying biological and environmental factors. The authors of the study attempted to identify risk factors for these conditions in children.

#### Methodology:

A comparison study was designed to see if groups of children diagnosed with these conditions have similarities and/or differences, particularly in symptoms and risk factors. The participants were divided into three groups:

- children with an Autism spectrum disorder and ADHD (88 participants);
- children with chronic multiple tic disorder and ADHD (66 participants); and
- children with ADHD only (66 participants).

The researchers recruited the participants from clinics, support groups and schools. Assessment tools used for this



study included The Child Symptom Inventory-4 to check for mental health symptoms and The Parent Questionnaire to gather risk factor and demographic information.

#### **Outcomes/Results:**

In relation to children with Autism, the researchers found that the group of children with Autism and ADHD were rated as having more severe anxiety (but not generalized anxiety disorder symptoms), depressive symptoms, and phobia symptoms than the other two groups. As far as risk and protective factors, the group with ADHD and Autism received more special education services (particularly early intervention). The group with ADHD and Autism and also the group with ADHD and chronic multiple tic disorder were more likely to have received psychotropic medication and hospitalization as a treatment. Mothers of these two groups also reported more pregnancy and birth complications.

#### **Recommendations:**

*The researchers recommend that future studies could include child self report questionnaires.*

### **C. ADHD in Children and Adolescents with Autism**

A study by Sinzig, Walter, & Doepfner (2009) examined whether symptoms of ADHD are just complications of the broader Autism spectrum or are actually a co-morbid presentation of ADHD due to its growing prevalence in children and adolescents with Autism, The researchers also wanted to find out if gender, IQ, and age had any effect on ADHD symptoms.

#### **Methodology:**

This was a comparative study to see trends across the participants' demographic data as well as symptoms of ADHD. Participants were eighty three (83) children and adolescents diagnosed with Autistic disorder (11%), high functioning Autism (36%) and Asperger's syndrome (53%). 53% of participants had significant ADHD symptoms that were enough to give them a co-morbid diagnosis of ADHD. The researchers used diagnostic checklists to ascertain whether symptoms of ADHD, PDD, or oppositional defiant or conduct disorders existed in the participants.

#### **Results:**

In this study 53% of the participants with Autism showed enough symptoms of ADHD that a co-morbid diagnosis was appropriate. This study also found symptoms of the inattentive type of ADHD was the highest in this sample, the combined type was next and the hyperactive/impulsive type had the lowest frequency. The hyperactive/impulsive type was, however, higher in younger children. The researchers also found that participants with lower IQ scores were more likely to have symptoms of ADHD but that the severity of the symptoms was unaffected by IQ scores. This study also suggested that gender was not a factor when comparing children and adolescents with Autism showing co-morbid ADHD symptoms with children and adolescent with Autism who did not display such symptoms.

#### **Recommendation:**

*The researchers recommend that future studies solicit more participants with Autistic disorder, rather than Asperger's Syndrome and also include teacher ratings. They also recommend a larger sample size.*

#### **References**

**Gadow, K.D., DeVincent, C.J., & Schneider, J. (2009).** Comparative study of children with ADHD only, Autism spectrum disorder + ADHD, and chronic multiple tic disorder +ADHD. *Journal of Attention Disorders*,12(5), 474-485.

**Goldstein, S.& Schwebach, A.J. (2004).** The comorbidity of pervasive developmental disorder and attention deficit hyperactivity disorder: Results of a retrospective chart review. *Journal of Autism and Developmental Disorders*,34(3), 329-339.

**Sinzig, J., Walter, D., & Doepfner, M. (2009).** Attention deficit/hyperactivity disorder in children and adolescents with Autism spectrum disorder: Symptom or syndrome? *Journal of Attention Disorders*,13(2), 117-126.



## Co-Morbidity in Individuals with Asperger's Syndrome

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