

Chapter

4

Co-Occurring Disorders

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Trying to get inside the mind of someone with autism spectrum disorder (ASD) can be a fascinating, but sometimes complex, experience. As this chapter by Dr. Clare Allely shows, a significant number of people with ASD have co-occurring disorders: that is, other conditions such as sleep disorders, attention deficit/hyperactivity disorder (ADHD), obsessive-compulsive disorder (OCD), schizophrenia, anxiety, depression, and/or an intellectual disability. Thus, when interviewing a client with ASD, you will need to be sensitive to additional behaviors. Furthermore, you will need to be open to additional diagnoses from your expert. Finally, when advocating for your client, presenting the evidence of ASD is not enough; the other conditions that accompany and perhaps are a result of the ASD all coalesce to form the unique portrait of your client.



As pointed out by Lever and Geurts (2016), among individuals with autism spectrum disorder (ASD), at least 69 percent are considered to have co-occurring psychiatric disorders and symptoms (*see* Buck et al., 2014). However, in individuals with both ASD and intellectual disability (ID), the prevalence of co-occurring psychiatric disorders and symptoms is lower (Howlin & Moss, 2012; Matson & Cervantes, 2014). Studies have found that the presence of co-occurring disorders is associated with a lower quality of life, increased demands for professional help and support, poorer prognosis, greater interference with everyday life, and more

negative outcomes (e.g., Matson & Goldin, 2013; Matson & Cervantes, 2014; Seltzer et al., 2004; Vannucchi et al., 2014; Wood & Gadow, 2010). Matson and colleagues have also highlighted that the cumulative effects of these core symptoms and disorders are significant obstacles in development and everyday adjustment (Matson et al., 2009). In adults with ASD, there are significantly increased rates of all major psychiatric disorders, such as depression, anxiety, obsessive-compulsive disorder, sleep problems, schizophrenia, and attention-deficit/hyperactivity disorder (ADHD) (see, e.g., Matson & LoVullo, 2008). Also, the prevalence of ID has been found to be more prevalent in individuals with ASD.

This chapter discusses some of the key co-occurring disorders in individuals with ASD. First, though, I review the importance of considering these co-occurring disorders in individuals with ASD who are involved in the criminal justice system. There are many other disorders and symptoms that are more prevalent in this particular group (e.g., suicidal ideation), but coverage of all would be too lengthy. The key ones are covered in this chapter.

The Importance of Considering Co-Occurring Disorders in Individuals with ASD

It is crucial that co-occurring disorders in individuals with ASD be recognized and identified as soon as possible during the criminal justice process. The role that these co-occurring disorders have in contributing to offending behavior can be significant. For instance, in a review carried out by Newman and Ghaziuddin (2008), the researchers identified studies that had examined the possible role that psychiatric factors/co-occurring disorders play in contributing to offending behavior in individuals with ASD. They identified seventeen publications that met the inclusion and exclusion criteria they established prior to carrying out their review. They found that the majority of the papers were single case reports. Across the seventeen publications identified, a total of thirty-seven cases was reviewed. Interestingly, they found that at the time the offense occurred, a definite psychiatric disorder was found in eleven of these thirty-seven cases (29.7 percent). Additionally, probable psychiatric disorder was found in twenty of the thirty-seven cases (54 percent). Newman and Ghaziuddin (2008) found that the majority of the studies on violent offenders with

ASD indicate that these individuals were also experiencing a range of co-occurring psychiatric disorders, including conduct disorder, depression, and schizoaffective disorder. It is crucial to emphasize here that by themselves these psychiatric disorders (conduct disorder being the exception) (Hodgins et al., 2008) do not confer a significant additional risk of engaging in violent offending behavior (Newman & Ghaziuddin, 2008).

Wachtel and Shorter (2013) have also recognized that simply having a diagnosis of ASD does not make a person more likely to engage in violent behavior when compared to the general population. What they hypothesize, however, is that the additional co-occurrence of psychotic disorder in individuals with ASD may result in what they call a one-two “vulnerability punch.” It is suggested that in some individuals with ASD, there may be an increased propensity to act on psychotic impulses when compared to individuals without ASD. They also suggest that, in individuals with ASD, there is a baseline higher risk of psychiatric disorders, not infrequently including psychosis.

Obsessive-Compulsive Disorder in ASD

Obsessive-compulsive disorder (OCD) has been found to have a lifetime prevalence of between 2 and 3 percent. OCD is characterized by time-consuming obsessions and/or compulsions that cause significant levels of distress and anxiety (American Psychiatric Association, 1994). “Lifetime prevalence” refers to the proportion of a population that at some point during their lifetime (up until the point of assessment) have experienced the condition or disorder in question. It has been emphasized that the compulsive behaviors exhibited by individuals with OCD can appear similar in presentation to the restrictive and repetitive behaviors exhibited in individuals with ASD (Cath et al., 2008). These similarities may be unsurprising given the studies that have indicated a neurobiological overlap between these two disorders (e.g., Carlisi et al., 2017). An increasing number of studies investigates the prevalence of compulsions in individuals with ASD. For instance, in a 1985 study, Rumsey, Rapoport, and Sceery found that as many as 86 percent of individuals with ASD exhibited compulsions including handwashing, arranging objects, repetitive tapping, phonic tics, and stereotyped touching of clothes and other objects at some stage during the course of their lifetime. Looking at it from the other side of the coin, one study found that 20 percent of individuals

with OCD exhibited significant autistic traits (Bejerot, Nylander, & Lindstrom, 2001).

Some studies have compared symptom characteristics between ASD and OCD. McDougle and colleagues (1995) found that, when compared to the obsessive-compulsive group, the individuals in the ASD group were significantly less likely to experience thoughts with aggressive, contamination, sexual, religious, symmetry, and somatic content. In the individuals with ASD, repetitive ordering; hoarding; telling or asking; touching, tapping, or rubbing; and self-mutilating occurred significantly more frequently than in the individuals with OCD. Also, cleaning, checking, and counting were found to be less frequent in the individuals with ASD than in the individuals with OCD.

Even more interesting, this study also identified a specific subset of seven obsessive-compulsive variables from the Yale-Brown Obsessive Compulsive Scale and Symptom Checklist that were found to reliably predict membership in the ASD group. Specifically, the study identified seven variables that predict the correct classification of individuals in the ASD group in 85 percent of cases (e.g., the presence of hoarding, touching, tapping, and self-damaging behavior and the absence of checking, counting, and aggressive and symmetry-related repetitive thoughts). The findings from this study indicate that the repetitive thoughts and behaviors that are characteristics of ASD differ significantly from the obsessive-compulsive symptoms exhibited in individuals with OCD.

In another study, Russell and colleagues (2005) administered the Yale-Brown Obsessive-Compulsive Scale and Symptom Checklist to a group of adults with high-functioning ASD (sample size of forty). They compared this group with a gender-matched group of adults with a primary diagnosis of OCD (sample size of forty-five) who also completed the same checklist. OCD symptoms were very carefully distinguished from the stereotypic behaviors and interests typically exhibited by individuals with ASD. Findings from the study revealed that there were similar frequencies of obsessive-compulsive symptoms between the two groups. Only somatic obsessions and repeating rituals were found to be more frequent in the OCD group. *Somatic obsessions* refers to intrusive thoughts that call the individual's attention to processes such as awareness of breathing, blinking, swallowing, body positioning, physical sensations, ringing in the ears, or heightened awareness of normal occurrences such as itching, being full, or having a pulse. Moreover, higher obsessive-compulsive symptom severity

ratings were found in the OCD group. Interestingly, at least moderate levels of interference from their symptoms were reported by 50 percent of the ASD group. Overall, the findings from this study indicate that both obsessions and compulsions are common in adults with high-functioning ASD. The study also revealed that these obsessions and compulsions are associated with significant levels of distress in individuals with ASD.

Co-Occurring Intellectual Disabilities

It is important to highlight some examples from the well-established literature that has identified a high comorbidity between ASD and ID (see Matson & Shoemaker, 2009). Studies have investigated the prevalence of ID in the ASD literature. For instance, Fombonne (2003) carried out a systematic review comprising more than thirty epidemiological surveys of ASD and other pervasive developmental disorders. The findings from the systematic review showed that ID is associated with about 70 percent of individuals on the spectrum (among whom 30 percent experienced mild to moderate levels of intellectual impairment, with relevant disorders such as fragile X, Down syndrome, and tuberous sclerosis). Studies have also explored the prevalence of ASD in the ID literature. As highlighted by van Dooren and colleagues (2016), studies have found the prevalence of ASD among those with ID to be between 8.8 percent and 30 percent. Additionally, Postorino and colleagues (2016) emphasized that studies investigating the comorbidity between ID and ASD have consistently found that females with ASD have a tendency to exhibit lower average cognitive ability when compared to males with ASD, and have also found that the male to female ratio in ASD is highest when there is no ID (e.g., Fombonne, 2009).

Co-Occurring Attention Deficit/Hyperactivity Disorder

Attention deficit/hyperactivity disorder (ADHD) is a neurodevelopmental disorder characterized by inattention, disorganization, and/or hyperactivity-impulsivity. The three ADHD presentations are: (1) combined presentation, characterized by both inattention and hyperactivity-impulsivity; (2) inattentive presentation, characterized primarily by inattention symptoms; and (3) hyperactive-impulsive presentation, characterized primarily by hyperactive and impulsive symptoms

(American Psychiatric Association, 2013). According to the *Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5)*; American Psychiatric Association, 2013), the prevalence of ADHD across the majority of cultures is about 5 percent among children.

Prior to the publication of the *DSM-5* in 2013, clinicians were not able to diagnose an individual with ADHD if that individual had a diagnosis of ASD (Antshel & Russo, 2019). It was presumed that any symptoms of inattention and/or hyperactivity-impulsivity were secondary to ASD and not due to an additional ADHD condition (American Psychiatric Association, 2000). This is surprising given that ASD and ADHD co-occur at very high rates (e.g., Tureck, Matson, May, Davis, & Whiting, 2013). The estimated prevalence of ADHD found within the ASD population across studies is high, ranging from 20 to 70 percent (e.g., Charnsil & Sriapai, 2011).

Studies have found that the most common ADHD diagnosis in individuals with ASD is Inattentive type, followed by Combined, and then Hyperactive type (Reiersen, Constantino, & Richard, 2008). Research has also shown that co-occurring ADHD in individuals with ASD is associated with ASD severity, social deficits, lower cognitive functioning, delays in adaptive functioning, and overall internalizing and externalizing symptoms (e.g., Rao & Landa, 2014). Additionally, numerous studies have found evidence of an overlap between challenging behaviors and social deficits in individuals with ASD and those with ADHD (e.g., Clark, Feedhan Tinline, & Vostanis, 1999). Executive function (EF) is a broad term that refers to a variety of domains of function, including inhibition, cognitive shifting, planning, working memory, and concept formation. ADHD and ASD may share overlapping executive function profiles; however, they are still unique (Karalunas et al., 2018). The findings indicate an additive nature for the co-occurrence of ASD and ADHD (Lukito et al., 2017).

Matson and colleagues (2013) pointed out that there are studies showing that not only is there a frequent co-occurrence between ASD and ADHD but also that the co-occurrence of these two disorders increases the risk of other conditions in the individual. For instance, tic disorder, trichotillomania (hair pulling), anxiety, and depression are frequently found in individuals with both ASD and ADHD (Simonoff et al., 2008). Furthermore, Hofvander and colleagues (2009) also found that individuals with both ASD and ADHD exhibited high rates of both depression and anxiety. Gargaro and colleagues (2011) have also argued that, in individuals with co-occurring ASD and ADHD, the symptom expression is additive:

nature when compared to either ASD or ADHD alone. The theory that there is an additive effect is supported by the findings of Goldstein and Schwebach (2004), who found greater impairment of daily functioning in individuals with co-occurring ASD and ADHD compared to individuals with either disorder alone.

Co-Occurring Sleep Problems

Deliens and colleagues (2015) have noted that there is a range of studies investigating sleep disturbances in adults with ASD. Biological, psychological, and/or social/environmental factors can all contribute to sleep problems/disturbances in individuals with ASD. In individuals with ASD, co-occurring medical conditions also may predispose this group to sleep problems. Some of these co-occurring medical conditions include ADHD (Liu et al., 2006), asthma (Liu et al., 2006), epilepsy (Liu et al., 2006), pain (Tudor et al., 2014), and gastrointestinal problems (Mannion et al., 2013). Carmassi and colleagues (2019) have pointed out that a number of studies have found a high frequency of sleep problems and alterations of circadian sleep rhythmicity in individuals with ASD across all ages (e.g., Irwanto, Rehatta, Hartini, & Takada, 2016). The most commonly reported sleep disturbances in individuals with ASD include difficulties in being able to fall asleep, frequent night-time awakenings, and a shorter sleep duration (e.g., Verhoeff et al., 2018). Individuals with ASD who exhibit hypersensitivity to tastes or textures (commonly found in this group) may experience more feelings of anxiety around bedtime (such as when they brush their teeth), which has a negative impact on their ability to go to sleep (Stein et al., 2011).

Research has also found that the likelihood of sleep dysfunction is increased in individuals with ASD when in the presence of anxiety, higher symptom severity, communication and social interaction deficits, sensory sensitivities, developmental regression, and gastrointestinal problems (Hollway et al., 2013). This has led researchers to conclude that the occurrence of sleep problems in individuals with ASD involves “complex and multiple risk markers” (Deliens, Leproult, Schmitz, Destrebecqz, & Peigneux, 2015).

It has also been shown that poor sleep worsens daytime functioning to a greater extent in adolescents with high-functioning ASD than it does in typically developing adolescents (Richdale et al., 2014). Both adolescents

and adults with ASD with moderate to severe sleep dysfunction were found to be more likely to exhibit aggressive behaviors. In adolescents and adults with ASD who experienced mild sleep problems, researchers found that they were more likely to exhibit eccentric types of problem behaviors, such as unusual play with objects and inappropriate sexual behavior (Matson et al., 2008). Another study found an association between poor sleep quality and sustained attention and impairments in working memory, in addition to impaired performance in sensory motor and cognitive procedural memory (i.e., prolonged sleep latency, increased light sleep) in a group of ASD young adults with intelligence levels in the normal range (Limoges et al., 2013).

Significantly, Carmassi and colleagues (2019) pointed out that there have been numerous studies demonstrating that a correlation may exist between sleep disturbances and the severity of ASD symptomology, particularly repetitive behaviors and deficits in verbal communication and/or social reciprocity (Cornish, Conduit, Rajaratnam, & Rinehart, 2015). One study found that night waking was a strong predictor for social interaction deficits (Tudor et al., 2012). Also, they found that sleep-onset delay was predictive of communication difficulties, stereotyped behavior (repetitive actions with no apparent purpose), and the severity of ASD symptomology (Tudor et al., 2012). Evidence appears to show that sleep problems exacerbate the severity of ASD symptomology and vice versa (Adams et al., 2014).

Co-Occurring Mood Disorder (e.g., Anxiety and Depression)

In individuals with ASD, mood disorders such as anxiety and depression are one of the most frequently reported co-occurring psychiatric disorders (Skokauskas, Gallagher, Skokauskas, & Gallagher, 2010). This reported co-occurrence is particularly noteworthy given that any changes in mood tend to go undetected in many individuals with ASD. One of the explanations for this is the impaired language/verbal abilities of some individuals with ASD, which results in an inability to express their feelings and describe changes in mood. There may also be impaired reporting of the presence of these symptoms even in individuals with ASD who are not verbally impaired, due to their deficits in socioemotional communication. Additionally, some of the features characteristic of ASD are also common

found in individuals with depression, including social withdrawal, limited facial expression, and flattened affect (Skokauskas & Frodl, 2015).

Compared to the general population, depression is more commonly reported in individuals with ASD (e.g., Mazzone et al., 2013; Bekhet & Zauszniewski, 2013). Pouw, Rieffe, Stockmann, and Gadow (2013) studied sixty-three people with ASD and compared them to typically developing peers. Consistent with previous studies, depressive symptoms were found to correlate with negative factors related to social difficulties and victimization (e.g., Cappadocia, Weiss, & Pepler, 2012). One study found that young adults with ASD are at significantly increased risk for mood and anxiety disorders. Lugnegård, Hallerbäck, and Gillberg (2011) investigated the presence of comorbid psychiatric disorders in young adults with a clinical diagnosis of Asperger syndrome (twenty-six men and twenty-eight women, mean age twenty-seven years). The Structured Clinical Interview for DSM-IV Axis I Disorders was used to assess psychiatric comorbidity. The Wechsler Adult Intelligence Scale, Third Edition, was used to assess intelligence quotient (IQ). The Diagnostic Interview for Social and Communication Disorders was used to confirm ASD diagnosis. Findings revealed that the experience of at least one episode of major depression was found in 70 percent and recurrent depressive episodes had been experienced by 50 percent. Approximately 50 percent of the sample had experienced anxiety disorders. Psychotic disorders and substance-induced disorders were not common (Lugnegård, Hallerbäck, & Gillberg, 2011).

The Co-Occurrence of and Symptom Overlap Between ASD and Schizophrenia Spectrum Disorders

Schizophrenia and psychotic disorders are characterized by abnormal behavior, including delusions, hallucinations, disorganized speech and/or motor behavior, and/or negative symptoms including flat emotional expression and avolition (American Psychiatric Association, 2013). In the general population, the estimated prevalence of schizophrenia is 1 percent (Bradley et al., 2011). It has been posited that ASD is one of the potential risk factors for schizophrenia or psychosis, although this hypothesis requires more investigation (e.g., Nylander, Lugnegård, & Hallerback, 2008). The relationship between ASD and schizophrenia and other psychotic disorders is complex. Nevertheless, a number of researchers have

highlighted the significant degree of symptom overlap between these two disorders (Kurita, 1999; King & Lord, 2011). Indeed, Kincaid, Doris, Shannon, and Mulholland (2017) stated that there is evidence in support of a symptomatic overlap, in addition to the recognition of the clinically significant rate of co-occurrence between ASD and psychotic disorders such as schizophrenia (e.g., Solomon et al., 2011). However, the exact nature of this relationship remains unknown; further research is needed to explore this important relationship.

Research has found that ASD and psychosis share common neurobiology (e.g., Sporn, Addington, Gogtay, et al., 2004). It has been argued that the negative symptoms (e.g., decline in social functioning, passivity, and withdrawn behavior) of psychosis may be the common ground (overlapping symptomology) between these two disorders (Eussen et al., 2015). It has even been suggested that the diagnostic distinction may be based on the diagnosing clinician's experience and preference (Bejerot, 2007; Nylander, Lugnégård, & Hallerback, 2008). Kincaid, Doris, Shannon, and Mulholland (2017) have noted that, although there is a relatively small number of studies indicating a high degree of comorbidity between schizophrenia and ASD, there has been little systematic research (e.g., Chisholm et al., 2015).

Conclusion

It is important that lawyers know about some of the frequently co-occurring conditions or disorders in individuals with ASD. Numerous studies have found co-occurring conditions or disorders in individuals with ASD who have engaged in offending behavior. In a key review carried out by Newman and Ghaziuddin in 2008, studies that explored the potential role of psychiatric factors in contributing to offending behavior in individuals with ASD were examined. Most of the seventeen publications that the researchers identified (which met their review's inclusion and exclusion criteria) were single case reports. A total of thirty-seven cases was covered across the seventeen identified publications. At the time of the offense, a definite psychiatric disorder was found in eleven of those thirty-seven cases (29.7 percent). Further, probable psychiatric disorder was found in twenty of the thirty-seven cases (54 percent). Most of the studies that the researchers identified on violent offenders with ASD suggest that these individuals also had a variety of co-occurring disorders, including conduct

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disorder, depression, and schizoaffective disorder. Nevertheless, it is important for lawyers to be aware that, by themselves, these co-occurring conditions or disorders (conduct disorder being an exception) (Hodgins, Cree, Alderton, et al., 2008) do not cause a substantial additional risk of violent offending behavior in an individual (Newman & Ghaziuddin, 2008). In sum, research indicates that co-occurring disorders are a likely factor when individuals with ASD engage in offending behavior.

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Complete citations are available from the author upon request.