

Addiction Co-occurring with Autism Spectrum Disorder

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Abstract

Individuals with Autism Spectrum Disorder (ASD) are often not included in the discussions regarding addiction. Research has found that individuals on the Autism Spectrum are at higher risk of developing addiction. Compounding this issue is the notion that some mental health clinicians are hesitant to provide services to individuals diagnosed with ASD. Mental health clinicians who provide addiction services can be equipped to provide those services to individuals on the Autism Spectrum as these individuals often engage in addiction related behaviors for the same or similar reasons of those who are not diagnosed with ASD. Lastly, the exploration and utilization of evidenced based strategies with this population is vitally important.

Keywords

Autism, Autism Spectrum Disorder, Addiction, Substance abuse.

Substance Use Disorder Co-Occurring with ASD

ASD is a disability whose diagnostic criteria have evolved over time. Today, ASD is more frequently diagnosed and has been associated with various other mental health and behavioral health diagnosis. One particular concern related to ASD is the presence of substance use disorders. Previously, it was believed that substance use disorders would be rare for those with ASD, but it has been found that this is not the case. Substance use in individuals diagnosed with ASD exists and it impacts the lives of those living with ASD similarly to those who use substances that do not have ASD. It is vitally important that mental health professionals can understand both their professional role and professional ethical responsibility in providing services to this population. Additionally, it is vitally important that any barriers to quality services are addressed.

ASD

ASD is a neurodevelopmental disorder that was identified in the early 20th century. While the severity and characteristics look different in each person, the diagnosis has basic qualities that must be present to meet the diagnostic criteria. ASD is characterized by deficits in social communication, including both receptive and expressive skills, as well as the way that individuals with ASD engage in social interactions with others [1]. Additionally, the diagnosis includes individuals engaging in restricted and/or repetitive behavior patterns [1]. Individuals with ASD have a variety of other attributes such as deficits in coping strategies, anxiety, emotional liability and other eccentricities [2]. While the specificity of the diagnostic criteria has continued to evolve, the basic foundational characteristics of the disorder have remained consistent.

In the United States of America, approximately 1.5 million children ages 3–17 have been diagnosed with ASD [3]. This is relevant because the rate of individuals diagnosed with ASD has consistently increased over time. According to the Center for Disease Control, currently, approximately 1 in 36 children have been identified as having ASD [4]. This is important because the prevalence estimates for adults are significantly limited due to the lack of surveillance systems to monitor the prevalence of ASD in adults [3]. However, it is known that ASD is a life-long disability that can require intensive support throughout life for some [5–8]. Due to the lack of research on the prevalence of ASD in adults, efforts have been made to use the existing data obtained from those that monitor 3–17 years old, considering the average life expectancy for those diagnosed with ASD [3]. Overall, researchers have been able to estimate that approximately 2.21% of the U.S. population (5,437,988) have a diagnosis of ASD resulting in approximately 1 in 45 adults ages 18–84 years, living with ASD [3].

Addiction

Addiction is a disorder that is characterized by a problematic pattern of substance use that impacts a person's ability to maintain control over certain aspects of their lives. These patterns of behaviors continue despite the negative impact that it has on multiple facets of individuals lives and relationships. Addiction is often referred to by other names such as substance use disorder, alcohol use disorder and/or drug use disorder. According to research, in 2022, 48.7 million people aged 12 or older (or 17.3%) had a substance use disorder in the past year, including 29.5 million who had an alcohol use disorder, 27.2 million who had a drug use disorder, and 8.0 million people who had both [9]. For this article, the term addiction is being used to refer to addiction to any drug and/or the addiction to alcohol.

ASD and Addiction Comorbidity

While the comorbidity between mental health conditions and addiction is common, the comorbidity between ASD and addiction is not a combination that many naturally consider. In fact, addiction has generally been assumed to be relatively uncommon for individuals with ASD [10–12]. This concept has been challenged in research. There are studies that suggest addiction is more likely to occur in individuals with ASD who are more socially outgoing, or those who are of higher intelligence than those who are more socially withdrawn or of lower ability [2,13]. For those that are more socially outgoing or those that possess a higher level of intelligence, there may be more opportunities for engagement in interactions with other individuals increasing the possibility of more exposure to circumstances that place them around substances. For those that are not socially outgoing or those that do not possess a higher level of intelligence in their social skills and communication deficits, ASD may limit their social networks outside of their family members [14,15]. It had been suggested that the limited social network and limited social activities connected to substances may be a protective factor for addiction [11]. This means that if individuals with ASD

are not around other individuals that use substances and are not exposed to substances in their family, they would be less likely to have access to substances themselves. This further means that they would be less likely to use substances and less likely to have the opportunity to become addicted. It was also asserted that young people with ASD are less likely to be influenced by their peers when it comes to experimenting with alcohol or drugs [10]. This is purported to be due to the social skills deficits that are characteristic of the disorder.

Many studies were reviewed related to the exploration of ASD and the comorbidity of addiction. Throughout the articles analyzed the actual rate of comorbidity varies based on the study being considered. One study found that the comorbidity of ASD and addiction was 30% [13]. This study was a cross-sectional study that explored the prevalence, risk factors, and consequences of substance use disorder in individuals diagnosed with ASD and compared these to the prevalence, risk factors and consequences of substance use disorder in individuals with attention deficit hyperactivity disorder [13]. Another study by Arnevik and Helverschou, was a systematic literary review (2016). This review included the analysis of 18 papers of which 12 reported on the prevalence of drug or alcohol use that was investigated in clinical samples with ASD [2]. This study found that the prevalence of addiction in patients with ASD ranged from 0.7% to 36%, depending on sample characteristics and the definition of addiction being used [2]. A different quantitative study drawn from Swedish registry data showed that individuals diagnosed with ASD have a significant risk of developing an addiction compared with the non-ASD control group [16]. This study included 26,986 individuals diagnosed with ASD from 1973 to 2009 and their 96,557 non-ASD relatives [17]. This study included those individuals with ASD with other comorbid conditions and those without an additional diagnosis. The study found that those diagnosed with ASD without the comorbidity of attention deficit hyperactivity disorder or intellectual disability had double the risk of substance use related problems [17]. The study further found that those individuals with ASD who also had attention deficit hyperactivity disorder were at even highest risk [17]. An additional study elected to explore if patients with ASD had a higher risk of substance use disorder than the risk of substance use disorder in the general population [18]. The study also explored the presence risk associated with psychotropic treatment, comorbidity or mortality [18]. This cohort study included 6,599 individuals diagnosed with ASD and 26,396 individuals without ASD, for the control group. In this study, the diagnosis of ASD was associated with an increased risk of substance use disorder and it was noted that the risk was much higher in those who had behavioral comorbidities and those that did not receive psychotropic agents [18]. It was also found that the mortality risk was higher in patients with ASD and co-occurring substance use disorder than in non-ASD controls with and without substance use disorder [18]. Lastly, these findings also suggest that patients with ASD are vulnerable to the development of substance use disorder and psychotropic agents for ASD are associated with decreased risk of substance use disorder [18]. An additional study focusing on understanding substance abuse in people diagnosed with ASD

used a mixed methods approach. This study gathered data from 2,386 participants (1183 with ASD and 1,203 not diagnosed with ASD) for the quantitative analysis and 919 participants (429 with ASD and 490 without ASD) for the qualitative analysis [19]. This study found that those with ASD was less likely to consume alcohol regularly and found that males with ASD were less likely than males without ASD to smoke [19]. However, this same research found that individuals with ASD were nine times more likely to report using recreational substances to manage mental health symptoms. The study also found that individuals with ASD were more likely to report vulnerability associated with substance use including using drugs during childhood, being tricked into using drugs, and using drugs to self-medicate [19]. Overall, these findings are directly in contrast with the prevailing wisdom that addiction is not common in individuals diagnosed with ASD [16].

Risk Factors and Impact of Addiction

Many factors can contribute to the development of co-occurring ASD and addiction. However, the research and literature addressing this particular comorbidity is scarce [16]. The limited research available shows that there are a multitude of risk factors associated with the comorbidity of ASD and addiction. Many of these factors are like the reasons that individuals without ASD have identified for their addiction. Life problems, stress, depression, anxiety, poor social skills, limited social interactions, loneliness and just wanting to be able to clear their minds are all reasons that individuals with ASD have identified as triggers for becoming addicted to substances. The high frequency of anxiety and other psychiatric disorders among individuals with ASD has been proposed as a principal reason for their use of alcohol or illegal drugs [20,21]. Anxiety, Depression and Attention Deficit Hyperactivity Disorder are all common conditions that co-occur with ASD. These disorders have a significant prevalence of comorbidity with addiction. These conditions negatively impact the lives and experiences of individuals with ASD and the addiction behavior often begins to address the symptoms they are experiencing related to these or other mental health disorders. Other reasons for drug or alcohol use, reported by individuals with ASD, include a reduction in social inhibition, the ability to forget problems and/or to attain peace of mind, to get through the day, or to overcome frustration [20]. In general, many individuals with ASD are simply attempting to manage day-to-day stressors and demands. Overall, this may be a form of 'self-medication' and a means of attempting to cope with social difficulties and dealing with anxiety and/or depression symptoms [20,22,23]. While these methods present themselves to be effective for some initially, this is maladaptive and typically becomes detrimental to the person.

While often the goal of their substance use is to cope and alleviate symptoms, these benefits are not consistently maintained throughout the addiction. It is common for addiction to have a negative impact on quality of life of individuals who engage in that behavior. This would be no different for those with ASD. Therefore, although substance use behaviors were reported to solve ASD-related problems in the short term, in the longer-term excessive substance abuse and eventual addic-

tion related behaviors increased already-impaired functioning [20]. For many, this means that while they initially found their efforts to "self-medicate" beneficial, they later find themselves in a pattern of behavior that they cannot control, and their symptoms are not being alleviated. For individuals with ASD, addiction tends to have a profound impact on their functioning, as it dysregulates their daily routines [24]. This is important because for many individuals with ASD, structure, routine and predictability is paramount. The disruption in their daily routines can create and exacerbate stress and anxiety symptoms.

Addiction may represent a particular vulnerability factor for individuals with ASD, as intoxication may further decrease the ability to anticipate the consequences of their behavior and make it even more difficult to behave according to formal and informal laws and social norms [25]. Addiction can have a detrimental impact on individuals with ASD ability to make sound decisions and engage in productive behaviors. Sizoo et al, described various problems related to how addiction impacts executive functioning, leading to a loss of active coping and problem-solving skills for individuals with ASD (2010). Therefore, individuals' abilities to complete tasks safely and adequately, work through conflicts rationally and handle stressful situations calmly are diminished and the exhibition of more maladaptive behaviors become present. Among the negative aspects of addiction reported was the exclusion from social interactions and increased social isolation [17]. Addiction is responsible for a high rate of accidents, exacerbated mental health problems, premature death, violence and suicide attempts in individuals with ASD [24]. These intense episodes can in turn trigger further addiction behaviors, thereby leading to a vicious circle of increasing substance use and related stress [2]. These cycles of using substances to manage symptoms, the substance use impacting their behaviors and choices, the behaviors and choices leading to negative experiences and increased symptoms which further leads to increased substance use to attempt to future cope, is the addiction wheel that some with ASD become stuck on.

Implications for Mental Health Professionals

There are many types of professionals that work with individuals diagnosed with ASD. Typically, people think of behavior analysts, psychologists, psychiatrists, speech therapists, occupational therapists, and physical therapists. While they each play an integral role in addressing the needs of individuals with ASD, when it comes to addressing addiction, mental health professionals are vitally important. Mental health professionals can include not only the psychiatrist and psychologist but also counselors, therapists, or social workers. Each of these professionals works directly with individuals who are experiencing difficulties in their lives. With proper training, these professionals can provide services to individuals who struggle with addiction and to individuals who are diagnosed with ASD. However, being able to provide services to a person diagnosed with ASD who is also struggling with addiction is more nuanced and may require some additional training.

Ethically, social workers, counselors and therapists are expected to be committed to their clients. They are expected to provide quality services and be responsible for practicing within their scope. This means that whether addressing other comorbidity concerns such as anxiety and depression, or addressing addiction, mental health professionals are expected to ensure their own level of competence when working with any population. This is important because professionals should seek additional training and supervision when working with a population that they are not experienced with. In doing so, the concept of confidence has become a central theme. Confidence in this instance is the professional's perception of their own capabilities.

Concepts around confidence and competence are vitally significant when working with individuals with ASD. Very often individuals with ASD have barriers in accessing services for their mental health difficulties. Many of these barriers are barriers that exist on the part of the clinician. There have been reported clinician-level barriers to care, such as low therapist confidence and self-perceived knowledge as many therapists perceive themselves as unable to adapt their mental health treatments to support individuals diagnosed with ASD [26]. Often the diagnosis itself is enough to become a barrier as many mental health professionals don't consider the level of functioning of the individual and simply presume that they are ill equipped to provide quality services to any person diagnosed with ASD. In fact, when examining specific strengths and gaps in providers' confidence to deliver cognitive behavior therapy to individuals diagnosed with ASD. Cooper et al. (2018) found that providers were most confident in their ability to be empathetic, establish a therapeutic alliance, and collect information to understand their clients' challenges, but lacked confidence in their ability to use appropriate assessments and identify effective therapeutic approaches for these clients. This presents to be linked to the mental health professionals' perceptions regarding the impact of the social communication deficits. It has also been shown that many clinicians have limited knowledge about ASD and have difficulties tailoring interventions to fit the needs of clients diagnosed with the condition [26]. For instance, results indicate that over 75% of mental health clinicians desire further information about mental health interventions for clients diagnosed with ASD, specifically in terms of how to engage in treatment planning and develop targeted strategies [26]. These gaps in knowledge can negatively impact clinicians' attitudes about delivering mental health services to individuals diagnosed with ASD, thereby affecting their intentions to treat this client group relative to neurotypical clients [27].

It is common for mental health professionals to believe a special skillset, or significantly different interventions are needed to work with individuals with ASD. However, there is growing evidence that many of the interventions that are effective in addressing the mental health problems in individuals that are not diagnosed with ASD are also helpful for individuals diagnosed with ASD when adapted (Weston et al., 2016). It is known that adaptations must be individualized based on the communication style, comprehension abilities and the specific needs of the consumer being served.

One widely used type of treatment is cognitive behavior therapy. This mode of therapy is often used in individuals who have not been diagnosed with ASD and it is a common method of treatment for individuals struggling with addiction. Cognitive behavior therapy may represent a promising treatment option for individuals with ASD who are also struggling with addiction. Research suggests that patients' symptoms can be reduced by providing monthly ASD education and group supervision to therapists in ordinary addiction outpatient clinics [25]. One adjustment that has been identified as being beneficial to the treatment of people with co-occurring ASD and addiction is the duration of treatment. Consumers with ASD have demonstrated needing more sessions than other client groups [25]. Additionally, it would be beneficial for their treatment to be more individualized, and more extensive [25]. It would be very beneficial for treatment to address multiple aspects of consumers lives. Consumers need psychoeducation on their condition generally, social skills training, and a variety of supports to organize several aspects of their lives including but not limited to housing, employment, social contacts, and leisure activities as well as being able to engage in these parts of life without the use of drugs [25]. For those consumers with ASD and addiction, overall, an instructional, supportive and directive attitude is needed on behalf of the mental health provider [20].

According to SAMSHA, people with cognitive disabilities have a higher prevalence substance use disorder, as well as lower treatment rates than people without these disabilities [9]. Additionally, substance use disorder treatment providers may underestimate the barriers of accessibility to their programs, or they may have specific exclusion criteria for some people with disabilities [9]. When providing addiction services to individuals with ASD, SAMSHA provides basic guiding principles for treatment. It asserts that appropriate screening, providing trauma informed care, ensuring support services are being provided and that treatment is structured and personalized were key components of effective interventions. Treatment centers are urged to develop screening procedures to identify ASD among people who seek substance abuse treatment [9]. Understanding the diagnosis and capabilities of clients prior to intervention is important. Additionally, providing treatment that is trauma-informed is considered a high priority for treating people with cognitive and behavioral disabilities [28]. Very often traumatic experiences can play a role in a person's addiction. When providing services to individuals with ASD, programs with high levels of structure and organizations are beneficial [29]. Additionally, personalizing treatment may require some treatment services to be adapted to the needs of the client. This includes but is not limited to paying close attention to the extra support that a client might need such as transportation, legal help, and/or mental health services.

Other recommendations from SAMSHA for the treatment of addiction in people with ASD include mental health professionals being able to convey ideas visually and using repetition to relay key points (2019). Additionally, practitioners being able to minimize distractions, allow for breaks and include hands on activities or role plays is also important [30].

Individuals with ASD are known to be concrete thinking and therefore practitioners' ability to focus on concrete concepts can aid in the usefulness and effectiveness of services [31]. SAMSHA has also asserted that adapting treated based on input from the clients or the client's family is important as they have the best information related to the client's learning style and the clients' strengths. Lastly, SAMSHA asserts that developing training materials for treatment staff on how to work with people who have developmental disorders is significantly vital [32].

In conclusion, the co-occurring diagnosis of ASD and addiction is a contemporary issue. The co-occurring diagnosis of ASD and addiction impacts service providers confidence in being able to provide quality services. Many mental health professionals that already provide addiction related services are knowledgeable of cognitive behavior therapy in general but could benefit from learning about ASD and effective ways to modify their already existing capabilities to be effective. Overall, being able to properly screen clients for ASD and addiction is a starting point while providing trauma informed care that focuses on the specific needs of the client and is tailored to fit the client's learning style and strengths is key. Clients being able to have access to much needed services and being able to experience support in all aspects of their life to assist them on their journey toward sobriety is important.

References

- American Psychiatric Association DS, American Psychiatric Association DS. Diagnostic and statistical manual of mental disorders: DSM-5. Washington, DC: American psychiatric association; 2013 May 22.
- Arnevik EA, Helverschou SB. 2016. Autism spectrum disorder and co-occurring substance use disorder—A systematic review. *Subst Abuse* 10: 69-75. <https://doi.org/10.4137/sart.s39921>
- Dietz PM, Rose CE, McArthur D, Maenner M. 2020. National and state estimates of adults with autism spectrum disorder. *J Autism Dev Disord* 50: 4258-4266. <https://doi.org/10.1007/s10803-020-04494-4>
- Maenner MJ, Warren Z, Williams AR, Amoakohene E, Bakian AV, et al. 2023. Prevalence and characteristics of autism spectrum disorder among children aged 8 years—Autism and Developmental Disabilities Monitoring Network, 11 sites, United States, 2020. *MMWR Surveill Summ* 72(2): 1. <https://doi.org/10.15585/mmwr.ss7202a1>
- Roux AM. 2015. National autism indicators report: Transition into young adulthood. AJ Drexel Autism Institute.
- Croen LA, Zerbo O, Qian Y, Massolo ML, Rich S, et al. 2015. The health status of adults on the autism spectrum. *Autism* 19(7): 814-823. <https://doi.org/10.1177/1362361315577517>
- Nicolaidis C, Kripke CC, Raymaker D. 2014. Primary care for adults on the autism spectrum. *Med Clin* 98(5): 1169-1191. <https://doi.org/10.1016/j.mcna.2014.06.011>
- Murphy CM, Wilson CE, Robertson DM, Ecker C, Daly EM, et al. 2016. Autism spectrum disorder in adults: diagnosis, management, and health services development. *Neuropsychiatr Dis Treat* 1669-1686. <https://doi.org/10.2147/ndt.s65455>
- Center for Substance Abuse Treatment. Substance use disorder treatment for people with physical and cognitive disabilities.
- Ramos M, Boada L, Moreno C, Llorente C, Romo J, et al. 2013. Attitude and risk of substance use in adolescents diagnosed with Asperger syndrome. *Drug Alcohol Depend* 133(2): 535-540. <https://doi.org/10.1016/j.drugalcdep.2013.07.022>
- Santosh PJ, Mijovic A. 2006. Does pervasive developmental disorder protect children and adolescents against drug and alcohol use?. *Eur Child Adolescent Psychiatry* 15: 183-188. <https://doi.org/10.1007/s00787-005-0517-0>
- Woodbury-Smith MR, Clare IC, Holland AJ, Kearns A. 2006. High functioning autistic spectrum disorders, offending and other law-breaking: findings from a community sample. *J Forensic Psychiatry Psychology* 17(1): 108-120. <https://doi.org/10.1080/14789940600589464>
- Sizoo B, van den Brink W, Koeter M, van Eenige MG, van Wijngaarden-Cremers P, et al. 2010. Treatment seeking adults with autism or ADHD and co-morbid substance use disorder: prevalence, risk factors and functional disability. *Drug and alcohol dependence*. 107(1): 44-50. <https://doi.org/10.1016/j.drugalcdep.2009.09.003>
- Brugha TS, McManus S, Bankart J, Scott F, Purdon S, et al. 2011. Epidemiology of autism spectrum disorders in adults in the community in England. *Arch Gen Psychiatry*. 68(5): 459-465. <https://doi.org/10.1001/archgenpsychiatry.2011.38>
- Howlin P, Magiati I. 2017. Autism spectrum disorder: Outcomes in adulthood. *Curr Opin Psychiatry* 30(2): 69-76. <https://doi.org/10.1097/ycp.0000000000000308>
- Kunreuther, E. (2020) autism spectrum disorder and substance use disorder: A dual diagnosis hiding in plain sight. *Child Adolescent Psychiatry of Clinical North America*. 29(3), 467-481
- Butwicka A, Långström N, Larsson H, Lundström S, Serlachius E, et al. 2017. Increased risk for substance use-related problems in autism spectrum disorders: a population-based cohort study. *J Autism Dev Disord* 47:80-89. <https://doi.org/10.1007/s10803-016-2914-2>
- Huang JS, Yang FC, Chien WC, Yeh TC, Chung CH, et al. 2021. Risk of substance use disorder and its associations with comorbidities and psychotropic agents in patients with autism. *JAMA Pediatr* 175(2): e205371. <https://doi.org/10.1001/jamapediatrics.2020.5371>
- Weir E, Allison C, Baron-Cohen S. 2021. Understanding the substance use of autistic adolescents and adults: a mixed-methods approach. *Lancet Psychiatry* 8(8): 673-685. [https://doi.org/10.1016/s2215-0366\(21\)00160-7](https://doi.org/10.1016/s2215-0366(21)00160-7)
- Kronenberg LM, Goossens PJ, van Busschbach J, van Achterberg T, van den Brink W. 2015. Coping styles in substance use disorder (SUD) patients with and without co-occurring attention deficit/hyperactivity disorder (ADHD) or autism spectrum disorder (ASD). *BMC Psychiatry* 15: 1-8. <https://doi.org/10.1186/s12888-015-0530-x>
- Lalanne L, Weiner L, Trojak B, Berna F, Bertschy G. 2015. Substance-use disorder in high-functioning autism: clinical and neurocognitive insights from two case reports. *BMC Psychiatry* 15:1-5. <https://doi.org/10.1186/s12888-015-0541-7>
- Kronenberg LM, Slager-Visscher K, Goossens PJ, van den Brink W, van Achterberg T. 2014. Everyday life consequences of substance use in adult patients with a substance use disorder (SUD) and co-occurring attention deficit/hyperactivity disorder (ADHD) or autism spectrum disorder (ASD): a patient's perspective. *BMC Psychiatry* 14: 1-9. <https://doi.org/10.1186/s12888-014-0264-1>
- Stoddart K, Burke L, King R. 2012. Asperger syndrome in adulthood: A comprehensive guide for clinicians. WW Norton & Company 10.
- Walhout SJ, Zanten JV, DeFuentes-Merillas L, Sonneborn CK, Bosma M. 2022. Patients with autism spectrum disorder and co-occurring substance use disorder: a clinical intervention study. *Subst Abuse* 16: 11782218221085599. <https://doi.org/10.1177/11782218221085599>
- Helverschou SB, Brunvold AR, Arnevik EA. 2019. Treating patients with co-occurring autism spectrum disorder and substance use disorder: a clinical explorative study. *Subst Abuse* 17(13): 1178221819843291. <https://doi.org/10.1177/1178221819843291>
- Gallant C, Roudbarani F, Ibrahim A, Maddox BB, Weiss JA. 2023. Clinician knowledge, confidence, and treatment practices in their provision of psychotherapy to autistic youth and youth with ADHD. *J Autism Dev Disord* 53(11): 4214-4228. <https://doi.org/10.1007/s10803-022-05722-9>

27. Maddox BB, Crabbe SR, Fishman JM, Beidas RS, Brookman-Frazee L, et al. 2019. Factors influencing the use of cognitive-behavioral therapy with autistic adults: A survey of community mental health clinicians. *J Autism and Dev Disord* 49: 4421-4448. <https://doi.org/10.1007/s10803-019-04156-0>
28. Cooper K, Loades ME, Russell A. 2018. Adapting psychological therapies for autism. *Res Autism Spectr Disord* 45: 43-50. <https://doi.org/10.1016/j.rasd.2017.11.002>
29. "HHS, SAMHSA Release 2022 National Survey on Drug Use and Health Data." Samhsa.gov, 2023.
30. Kronenberg LM, Verkerk-Tamminga R, Goossens PJ, van den Brink W, van Achterberg T. 2015. Personal recovery in individuals diagnosed with substance use disorder (SUD) and co-occurring attention deficit/hyperactivity disorder (ADHD) or autism spectrum disorder (ASD). *Arch Psychiatric Nurs* 29(4): 242-248. <https://doi.org/10.1016/j.apnu.2015.04.006>
31. Ressel M, Thompson B, Poulin MH, Normand CL, Fisher MH, et al. 2020. Systematic review of risk and protective factors associated with substance use and abuse in individuals with autism spectrum disorders. *Autism* 24(4): 899-918. <https://doi.org/10.1177/1362361320910963>
32. White SW, Ollendick T, Albano AM, Oswald D, Johnson C, et al. 2013. Randomized controlled trial: Multimodal anxiety and social skill intervention for adolescents with autism spectrum disorder. *J Autism Dev Disord* 43: 382-394. <https://doi.org/10.1007/s10803-012-1577-x>