

2019

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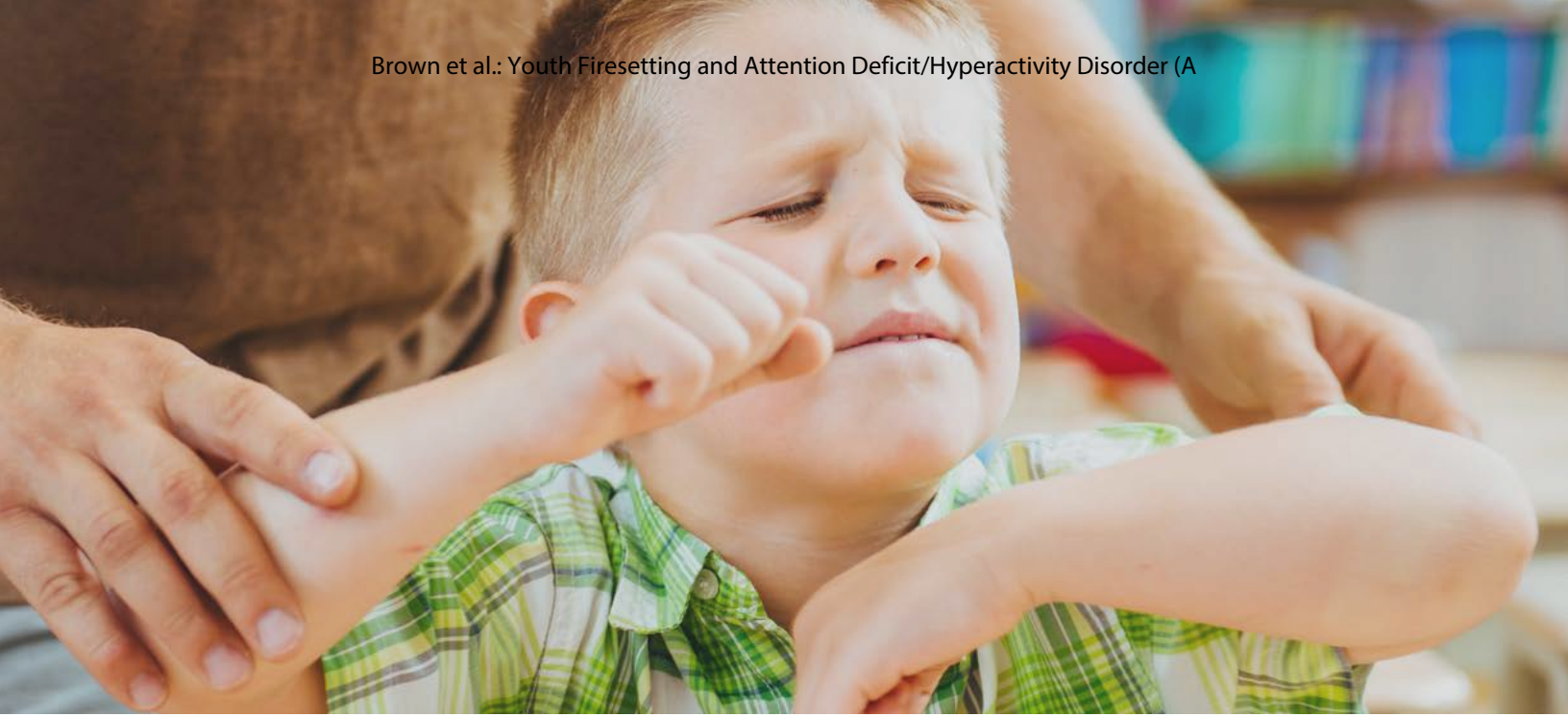
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Recommended Citation

Brown, Jerrod; Porth, Don; and Osmonson, Kathi (2019) "Youth Firesetting and Attention Deficit/Hyperactivity Disorder (ADHD): A Brief Review," *Forensic Scholars Today*. Vol. 5: Iss. 2, Article 6. Available at: https://digitalcommons.csp.edu/forensic_scholars_today/vol5/iss2/6

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Youth Fire Setting and Attention Deficit/ Hyperactivity Disorder (ADHD): A Brief Review

Jerrold Brown, Ph.D., Don Porth, B.S., & Kathi Osmonson, M.S.

Attention deficit/hyperactivity disorder (ADHD) has estimated prevalence rates of 2.5% in adults and 5.3% in children (Polanczyk, de Lima, Horta, Biederman, & Rohde, 2010; Simon, Czobor, Balint, Meszaros, & Bitter, 2009; Young et al., 2018). This disorder is defined by pervasive symptoms of impulsivity, hyperactivity, and inattention. Typically, the symptoms of ADHD emerge starting in childhood or adolescence (American Psychiatric Association, 2013). In approximately half of all cases, ADHD endures into adulthood (Faraone, Biederman, & Mick, 2006).

Diagnostic comorbidity is the rule, rather than the exception, with ADHD. Research estimates that somewhere between 40% and 65% of individuals with ADHD present with a co-occurring disorder (Biederman et al., 2007; Connor, Steeber, & McBurnett, 2010; Kunwar, Dewan, & Faraone, 2007; Liu, Shah, Kubilis, Bussing, Winterstein, 2019). Common comorbid psychiatric conditions include anxiety, mood (e.g., depression and bipolar), behavioral (e.g., conduct disorder and oppositional defiant disorder), and substance use disorders. When untreated, the symptoms of ADHD and any comorbid disorders can have devastating consequences on an individual's ability to function (Shaw, Hodgkins, Caci, Young, Kahle, Woods, & Arnold, 2012; Young et al., 2018).

Four key areas where individuals with ADHD struggle are school, work, social settings, and executive functioning (Cunial, Casey, Bell, & Kebbell, 2018; Gudjonsson, Sigurdsson, Sigfusdottir, & Young, 2011; Young, Wells, & Gudjonsson, 2011). First, in school, children with ADHD are often plagued by poor performance, truancy, and ultimately low education attainment. Second, and similar to observations from school settings, individuals with ADHD often struggle to perform well in work settings, potentially resulting in underemployment or unemployment and financial problems. Third, the social relationships with friends and family of individuals with ADHD are often characterized by conflict and dysfunction. Fourth, individuals with ADHD struggle with decision-making and planning across most settings.

The combination of ADHD symptoms (i.e., impulsivity and poor self-control) and struggles across these key areas of functioning could increase the risk of criminal behavior (De Sanctis, Nomura, Newcorn, & Halperin, 2012; Young & Thome, 2011). As noted above, ADHD often co-occurs with externalizing disorders like conduct disorder and substance use, both of which predict antisocial and criminal behavior (Atherton, Lawson, Ferrer, & Robins, 2019; Beauchaine & McNulty, 2013). This has been supported by studies of the prevalence rates for ADHD in prisons, which have found that there is a prevalence of 30.1% among youth prisoners and 26.2% among adult prisoners (Cunial, Casey, Bell, & Kebbell, 2019; Young, Moss, Sedgwick, Fridman, & Hodgkins, 2015). Further, ADHD has been linked to an earlier onset of criminal behavior and higher rates of recidivism and re-imprisonment after release (Mohr-Jensen & Steinhausen, 2016; Young, Wells, & Gudjonsson, 2011).

One type of antisocial behavior that is of particular concern among youth with ADHD is fire setting (Becker, Stuewig, Herrera, & McCloskey, 2004; Lambie, Ioane, Randell, & Seymour, 2013). This concern is warranted based on the fact that youthful fire setters tend to be impulsive and fail to adequately consider the consequences of their actions, which are consistent with ADHD (Zipper & Wilcox, 2005). For instance, Gruber, Heck, and Mintzer (1981) found that over half of child fire setters were considered hyperactive. In fact, a study of child fire setters ($n = 1,241$) in Massachusetts reported that ADHD was present in 38% of the participants, which rendered ADHD as the most common psychiatric diagnosis in the sample. These findings are consistent with studies of adolescent fire setters (Sakheim, Osborn, & Abrams, 1991; Sakheim, Vigdor, Gordon, & Helprin, 1985).

To decrease the likelihood of future fire setting behaviors, professionals must carefully consider the young fire setter's strengths and weaknesses in conjunction with any interventions. To this end, comprehensive psychological evaluations and risk assessments should serve as the starting point (Lambie, Ioane, Randell, & Seymour, 2013). When ADHD and other learning disorders are present, traditional educational fire setting interventions tend to be ineffective (Lambie, Ioane, Randell, & Seymour, 2013). Nonetheless, there are a number of considerations that can increase the effectiveness of interventions among young fire setters with ADHD. First, any intervention should focus on teaching why and how fire is dangerous rather than simply asserting that fire setting is prohibited or trying to scare the child. Second, professionals should structure messaging in a simple yet repetitive manner across several sessions. This can help ensure that important points are not missed due to inattention. Third, any sessions should be conducted in a calm and quiet environment where distractions are minimized. Fourth, youths with ADHD often benefit from lessons that emphasize visual learning, role-playing, and model behavior. These alternative teaching strategies can help break past barriers of attentional and other deficits beyond what is possible with traditional auditory teaching methods.

This article reviews how ADHD symptoms contribute to antisocial behaviors including fire setting. Although some literature has explored this relationship, there is a strong need for further research in this area (Bowling, Merrick, & Omar, 2013). For instance, additional research exploring how the role of impulsivity evolves in fire setting across different developmental phases is essential (Lambie, Ioane, Randell, & Seymour, 2013). Similarly, research that investigates the effectiveness of different treatment techniques and programs in reducing fire setting behaviors among youths with ADHD would be beneficial. As this research continues, the efforts of mental health, criminal justice, and fire professionals along with family members will be essential in mitigating the risk of fire setting and maximizing public safety.

Important Takeaways on ADHD and Fire Setting

- Attention deficit/hyperactivity disorder (ADHD) is characterized by symptoms of impulsivity, hyperactivity, and inattention.
- The onset of ADHD is typically during childhood or adolescence.
- ADHD has estimated prevalence rates of 2.5% in adults and 5.3% in children.
- The majority of individuals with ADHD present with at least one co-occurring psychiatric condition.
- ADHD is frequently comorbid with anxiety, mood (e.g., depression and bipolar), behavioral (e.g., conduct disorder and oppositional defiant disorder), and substance use disorders.
- ADHD often has detrimental effects on an individual's ability to function at school and work as well as in social settings.
- ADHD increases the risk of antisocial and criminal behavior.
- The prevalence rates for ADHD are drastically higher in prison settings than in the general population.
- ADHD increases the likelihood of recidivism and reincarceration.
- ADHD is the most common diagnosis among child and adolescent fire setters.
- Traditional educational fire setting interventions are not very effective for youths with ADHD.
- Interventions for fire setting among youths with ADHD can be improved by emphasizing the use of repetition, visual learning, role-playing, and modeling behavior along with the limitation of distractions.
- Innovative and sophisticated research is needed to better understand the role of ADHD in fire setting behaviors and how treatment can best reduce the likelihood of future fire setting.

Author Biographies:

Jerrod Brown, Ph.D., is an assistant professor, program director, and lead developer for the Master of Arts in Human Services degree with an emphasis in Forensic Behavioral Health for Concordia University, St. Paul in Minnesota. Brown has also been employed with Pathways Counseling Center in St. Paul, Minnesota, for the past 16 years. Pathways provides programs and services benefiting individuals impacted by mental illness and addictions. He is also the founder and CEO of the American Institute for the Advancement of Forensic Studies (AIAFS) and the Editor-in-Chief of Forensic Scholars Today (FST). Brown is certified as a youth fire setter prevention/intervention specialist, Thinking for a Change (T4C) facilitator, fetal alcohol spectrum disorders (FASD) trainer, and a problem gambling treatment provider.

Don Porth holds a bachelor's degree in fire command administration. He served 31 years in the uniformed fire service as a firefighter, public educator, and youth fire setting intervention specialist. He has served on various local and national committees and organizations related to youth fire setting behaviors, including 21 years as president of SOS FIRES: Youth Intervention Programs, a nonprofit specializing in support for youth fire setting intervention programs. Porth currently works as a consultant on fire and life safety issues and manages a national data system (YFIRES.com) for youth fire setting programs.

Kathi Osmonson, Deputy State Fire Marshal, has a master's degree in forensic behavioral health and coordinates the Minnesota State Youth Fire Intervention Team (YFIT). YFIT partners with law enforcement and mental health, justice, and social agencies to sustain a network of professionals who collaborate to provide intervention. Her career includes volunteer and career firefighting with specialties in fire prevention education and youth fire setting intervention. She is a member of the NFPA 1035 Committee, is an adjunct instructor for the FEMA National Fire Academy, and presents at national and international conferences.

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