WILDLAND FIREFIGHTERS AND ATTENTION DEFICIT HYPERACTIVITY DISORDER (ADHD)

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Abstract

ADHD represents one of the most common disorders of childhood, affecting 3-7% of the population (American Psychiatric Association, 2000). Over the course of their lifetimes, children with ADHD are at increased risk for academic failure, behavioral problems, substance abuse, accidents, divorce, and other mental disorders (Barkley, 2006). Research has indicated that while the prevalence rate of ADHD in adult populations is approximately 4.4%, the majority of those cases go untreated (Kessler et al, 2006). To date, no known research has investigated the rate of ADHD in wildland firefighters, or what impacts it may have for this population. Three hundred and two wildland firefighters, representing a diverse array of resource types, were administered the Adult ADHD Self-Report Scale (ASRS v1.1). 19.54% of respondents had scores which suggested the presence of ADHD and its associated symptoms. These findings indicated a high level of ADHD within the wildland firefighters sampled. Results from this research suggest that additional studies are needed to investigate ADHD within the wildland firefighting community, and what impacts, if any, it has upon those firefighters who must contend with the disorder.

Background:

Attention Deficit Hyperactivity Disorder (ADHD) affects from 3-7% of the American child population, making it one of the most common disorders of childhood (American Psychiatric Association, 2000). Variations in this percentage are partly attributable to the different sources and assessment devices that health professionals use when diagnosing it (Committee on Quality Improvement, 2000). If the higher percentages of prevalence rates are used, this equates to nearly 10 million Americans who are affected by the disorder. The hallmark criteria of ADHD are inattention, impulsiveness, and hyperactivity, some or all of which might be present in a diagnosed individual. According to the Diagnostic and Statistical Manual-IV of the American Psychiatric Association, ADHD is categorized in one of three ways: ADHD Combined Type which features both inattentiveness and hyperactivity-impulsivity components, ADHD Predominantly Inattentive Type, or ADHD Predominantly Hyperactive Type. The recommended diagnostic evaluation for children (and adults) suspected to have ADHD includes the completion of a psychiatric interview, rating scales from multiple informants, and individually tailored psychological testing (Schweitzer et al., 2001). However, the Adult Self-Report Scale version 1.1 (ASRS v1.1)
A screening assessment, which was used in this research, has been shown to be an effective instrument in identifying individuals at high risk for ADHD (Adler et al., 2010). Boys are diagnosed with ADHD more frequently than are girls, with the ratio varying from 2:1 to 9:1 depending on the categorized DSM-IV type (American Psychiatric Association, 2000). Over the course of their lifetimes, children with ADHD are at increased risk for academic failure, behavioral problems, substance abuse, accidents, divorce, and other mental disorders (Barkley, 2006).

To date, research has not definitively answered the question of how many adults are affected by ADHD. Schweitzer et al. (2001) have estimated that about one-third of children with ADHD continue to have significant symptoms into adulthood. Other research has indicated that while the prevalence rate of ADHD in adult populations is approximately 4.4%, the majority of those cases go untreated (Kessler et al., 2006). The profile of an adult with ADHD typically varies from that of a child. For most, pure hyperactive behavior usually diminishes with maturity, but adults with ADHD continue to have problems with time management, self-control, planning for the future, and being able to persist toward goals (Harvard Health Letter). Those with ADHD are also at a heightened risk for comorbidity, or the development of some other psychiatric condition. Learning disabilities (Mayes et al., 2000), depression (Spencer, 2001), bipolar disorder (Wozniak, 2001), and substance abuse (Biederman et al., 1998; Wilens et al., 1997) have all been linked with ADHD.

ADHD has been shown to impact workplace performance. Adult workers with ADHD missed significantly more work days than non-ADHD employees, and displayed a significantly higher number of days with reduced work quantity (de Graf et al., 2008). It has been theorized that adults with ADHD may do better in occupations that are fast-paced, involve risk-taking, and an outgoing style of communication, as these specific job characteristics match well with the characteristics of those with ADHD (Goldstein, 2002). Wildland firefighting involves all of the aforementioned job descriptors. However, no known research has investigated the rate of ADHD in wildland firefighters, or what impacts it might have for this population in terms of job performance and/or daily living.

Methods:

Three hundred and two wildland firefighters, representing a diverse array of resource types, were administered the Adult ADHD Self-Report Scale (ASRS v1.1).

Insert Table 1 here
Subjects were recruited from three separate wildfire incidents in the western United States during the 2009 fire season: a Type II incident in Oregon, a Type II incident in Washington, and a Type I incident in California. Surveys were completed by subjects in firecamp when it was conducive to their schedules.

The ASRS v1.1 has been demonstrated to be a reliable and valid scale for evaluating ADHD in adult populations, with high internal consistency reliability (0.63-0.72) and test-retest reliability (0.58-0.77) (Kessler et al., 2007; Adler et al., 2006). The ASRS consists of 18 questions in Likert format, with responses ranging from: never, rarely, sometimes, often, or very often. If the responses meet or exceed a minimum cutoff score, it suggests the presence of ADHD and its associated symptoms. The brevity and ability of the ASRS v1.1 to discriminate ADHD cases from non-cases makes it an attractive instrument for use both in community epidemiological surveys and in clinical outreach and case finding initiatives (Kessler et al., 2007).

Results:

Nearly twenty percent (19.54%) of the 302 respondents who completed the ASRS v1.1 attained a score which met or exceeded the established clinically significant cutoff score. Therefore, nearly one-fifth of those surveyed displayed symptoms consistent with an ADHD diagnosis.

Conclusions:

ADHD is one of the most common disorders of childhood, and the symptoms of ADHD persist into adulthood for many of those affected. Diagnosis of the disorder usually entails a combination of psychiatric interviews, behavioral checklists, and psychological testing. However, the Adult ADHD Self-Report Scale (ASRS v1.1) has been shown to be a valid and reliable screening instrument for quickly assessing ADHD symptoms.

Three hundred and two wildland firefighters, from a variety of resource types (see Table 1), completed the ASRS v1.1 while assigned to a large wildfire incident during the 2009 fire season. 19.54% of subjects attained a score which suggested the presence of ADHD. This figure is over four times the adult prevalence rate that has been identified in previous research.

Findings from this research suggested a high level of ADHD within wildland firefighters that were sampled in this study. However, further studies are needed to investigate the prevalence rates of ADHD within the wildland firefighting community, and what impacts, if any, it has upon those firefighters who must contend with the disorder, as these results may not be generalizable to the overall population of wildland firefighters. Also, if the current research is an accurate reflection of just how common ADHD appears to be in wildland firefighters, future studies could identify why those with ADHD seem to be drawn in higher numbers to the profession. It has been theorized that those with the disorder are attracted to occupations that are fast-paced, involve risk, and require outgoing communication styles, and this theory seems to be supported by the findings of this investigation.

Results from this research have important ramifications in many areas: training, communication, situational awareness, leadership, human error, and group dynamics, to name a few. Those with ADHD are prone to distractibility and inattentiveness, and learning disabilities have been shown to be a common comorbid condition in those with ADHD. With this in mind, the current methods of training (e.g. S-classes) that rely heavily on a traditional lecture format, might not be the most effective way of educating firefighters. More experiential, hands-on types of learning activities might lead to better educational outcomes. Inattentiveness and distractibility might also lead to challenges in building and maintaining
situational awareness, which is key to making effective decisions and for safer operations. Impulsivity, another common trait in ADHD, could also impact decision making. Impulsive individuals tend to initiate actions without thinking about possible ramifications, and this could lead to numerous negative outcomes in the wildland firefighter’s operational environment. Due to the characteristics of ADHD, those with the disorder often experience interpersonal difficulties with the people around them. This can lead to challenges working in a team environment. Effective team functioning is essential in wildland firefighting since the bulk of its operations take place in a team setting (e.g. IMT, hotshot crew, smokejumper squad, engine crew, burning module, etc.). More research is needed to address the potential impacts that ADHD has on the training, decision-making, communication, and overall safety of wildland firefighters.

Those who have been diagnosed with ADHD are also prone to being affected by some other comorbid psychiatric condition, such as a learning disability, depression, or substance abuse. Future research efforts could identify if wildland firefighters with ADHD are more likely to experience specific comorbid disorders.

It is possible that ADHD and its associated characteristics are actually beneficial in some ways to those firefighters who have the disorder. Those with ADHD are often behaviorally active individuals and comfortable with physical movement (National Institute of Mental Health, 2010). Fire-related activities often call for individuals to be physically dynamic. As noted earlier, fire operations are often fast-paced and entail risk, traits which theoretically appeal to those with ADHD. Emerging research has suggested that ADHD might actually be beneficial for certain occupational populations (Eisenberg et al, 2008). The possibility exists that while there might be certain drawbacks to being a firefighter with ADHD, there might also be benefits as well. Again, future research in this area might clarify this hypothesis.

In conclusion, nearly 20% of the wildland firefighting community sampled in this research appears to be experiencing ADHD, which is over four times the prevalence rate found in adult populations. If this is indeed the case, it has far-reaching ramifications in a wide variety of different areas. More research is needed to further clarify the findings presented here.

References

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Respondent breakdown by resource type