WILDLAND FIREFIGHTERS AND ATTENTION DEFICIT HYPERACTIVITY DISORDER (ADHD)

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Abstract.—Attention Deficit Hyperactivity Disorder (ADHD) is one of the most common disorders of childhood, affecting 3 to 7 percent of the population (American Psychiatric Association 2000). Research has indicated that the prevalence rate of ADHD in adult populations is approximately 4.4 percent and that 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 the implications it may have for this population. For this study, 302 wildland firefighters representing a diverse array of firefighting resource types took the Adult ADHD Self-Report Scale (ASRS v1.1). Almost one in five respondents (19.5 percent) had scores that suggested the presence of ADHD and associated symptoms. Additional studies are needed to investigate ADHD within the wildland firefighting community.

1.0 INTRODUCTION

Attention Deficit Hyperactivity Disorder (ADHD) affects between 3 and 7 percent 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 correct, nearly 10 million Americans have 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 (DSM-IV) of the American Psychiatric Association, ADHD is categorized in one of three ways: ADHD Combined Type (features both inattention 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 entails 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) 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) 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 percent, 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, and being able to persevere toward goals (Harvard Health Letter 2010). Those with ADHD are also at a heightened risk for co-morbidity, or the development of other psychiatric conditions. 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 also been shown to impact workplace performance. In one study, adult workers with ADHD missed significantly more workdays than non-ADHD employees and had a significantly higher number of days with reduced work quality (de Graf et al. 2008).

Goldstein (2002) theorized that adults with ADHD may do better in occupations that are fast-paced, involve risk-taking, and have an outgoing style of communication. Wildland firefighting involves all of these job descriptors. However, no known research has investigated the rate of ADHD in wildland firefighters, or what impacts it might have on this population in terms of job performance and/or daily living.

2.0 METHODS

Three hundred and two wildland firefighters representing a variety of resource types (Fig. 1) took the Adult ADHD Self-Report Scale (ASRS v1.1). Subjects were recruited via word of mouth and through informational flyers posted in various firecamps during

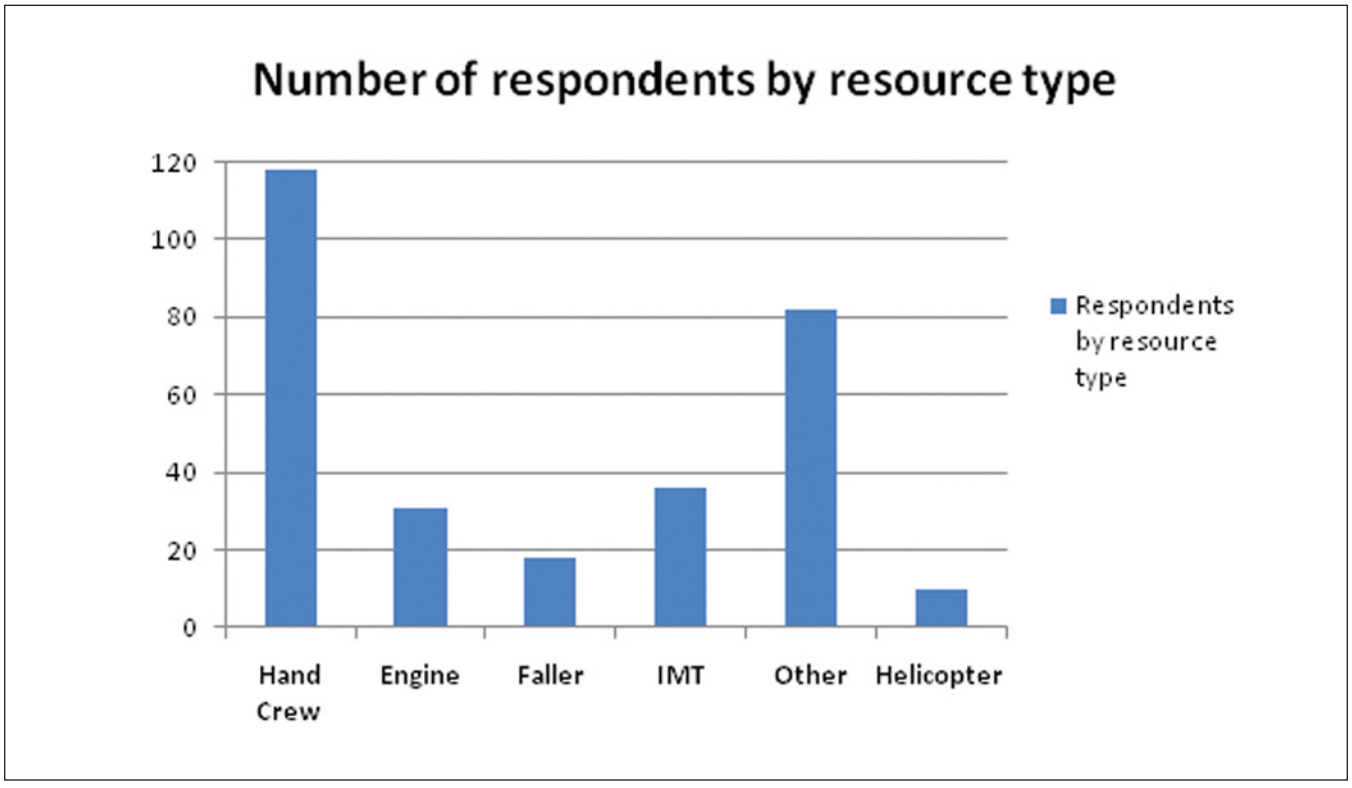

Figure 1.—Respondent breakdown by firefighting resource type.

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. Subjects completed surveys in firecamp as their schedules permitted.

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) (Adler et al. 2006, Kessler et al. 2007). The ASRS consists of 18 questions in Likert format, with the following responses: never, rarely, sometimes, often, or very often. If the summed responses meet or exceed a minimum cutoff score, the presence of ADHD and its associated symptoms is suggested. The brevity of the ASRS v1.1 and its ability to discriminate ADHD cases from non-cases make it an attractive instrument for both community epidemiological surveys and clinical outreach and case-finding initiatives (Kessler et al. 2007).

3.0 RESULTS

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

4.0 DISCUSSION AND CONCLUSIONS

In this study, firefighters had more than four times the prevalence rate of ADHD that has been identified in the general adult population in previous research. However, we may not be able to generalize these results to the whole population of wildland firefighters since the subjects were not randomly selected. Further studies are needed to investigate the wider prevalence rates of ADHD within the wildland firefighting community and to assess what impacts, if any, ADHD has upon those who contend with the disorder. In addition, if the current research is an accurate reflection of just how common ADHD is in wildland firefighters, future studies could identify why those with ADHD seem to be drawn in higher numbers to the profession.

Emerging research has suggested that ADHD might actually be beneficial for certain occupational populations (Eisenberg et al. 2008) and firefighting may fall into this category. Those with ADHD are often behaviorally active individuals who are comfortable with physical movement (National Institute of Mental Health 2010) and many fire-related activities call for individuals to be physically dynamic. As noted earlier, fire operations are often fast-paced and entail risk, traits which may appeal to those with ADHD.

Results from this research have important ramifications in many areas, including training, communication, situational awareness, leadership, human error, and group dynamics. Those with ADHD are prone to distractibility and inattentiveness, and learning disabilities have been shown to be a common co-morbid condition in those with ADHD. With these considerations in mind, the current methods of training (e. g., S-classes), which rely heavily on a traditional lecture format, might not be the most effective way of educating firefighters. More experiential, hands-on types of learning 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 ensuring safer operations in firefighting.

Impulsivity, another common trait in ADHD, could also affect decisionmaking. Impulsive individuals tend to initiate actions without thinking about possible ramifications—potentially leading 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. These individuals therefore may face challenges working in a team environment. Effective team functioning is essential in wildland firefighting since the bulk of its operations takes place in a team setting (e.g., Incident Management Team, hotshot crew, smokejumper squad, engine crew, and burning module).

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

In conclusion, nearly 20 percent of the wildland firefighting community sampled in this research appear to be experiencing ADHD, which is more than 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 areas. More research is needed to further clarify the findings presented here.

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