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Adolescents with Asperger syndrome can use a mindfulness-based strategy to control their aggressive behavior

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ABSTRACT

Children and adolescents with Asperger syndrome occasionally exhibit aggressive behavior against peers and parents. In a multiple baseline design across subjects, three adolescents with Asperger syndrome were taught to use a mindfulness-based procedure called *Meditation on the Soles of the Feet* to control their physical aggression in the family home and during outings in the community. They were taught to shift the focus of their attention from the negative emotions that triggered their aggressive behavior to a neutral stimulus, the soles of their feet.

Prior to training in the mindfulness-based procedure the adolescents had moderate rates of aggression. During mindfulness practice, which lasted between 17 and 24 weeks, their mean rates of aggression per week decreased from 2.7, 2.5 and 3.2 to 0.9, 1.1, and 0.9, respectively, with no instances observed during the last 3 weeks of mindfulness practice. No episodes of physical aggression occurred during a 4-year follow-up. This study suggests that adolescents with Asperger syndrome may successfully use a mindfulness-based procedure to control their aggressive behavior.

1. Introduction

The prevalence of Asperger syndrome has been estimated to be between about 2 cases in 10,000 children (Fombonne, 2003) and 10 cases in 10,000 children (Saracino, Noseworthy, Steiman, Reisinger, & Fombonne, 2010). Individuals with Asperger syndrome generally have severe, sustained, functional impairment in social interaction, typically without a concomitant impairment in language, cognitive functioning, or age-appropriate activities (DSM-IV-TR; APA, 2000). In addition, they have at least two of the following clinical indications of qualitative social impairment: (1) markedly abnormal non-verbal communicative gestures; (2) failure to develop peer relationships; (3) lack of social or emotional reciprocity, and (4) an impaired ability to express pleasure in other people's happiness (APA, 2000). Neither a clear etiology nor risk factors for Asperger syndrome have been identified in the extant research literature (DM-ID; Fletcher, Loschen, Stavrakaki, & First, 2007). However, emerging research suggests adolescents and adults with Asperger syndrome may be at increased risk for psychiatric

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disorders, such as depression (Gilchrist et al., 2001; Tantam, 2003), psychosis (Kiln, Volkmar, & Sparrow, 2000), and bipolar disorder (Duggal, 2003), as well as for difficulties with the legal system (Allen et al., 2008; Baron-Cohen, 1988).

The prevalence of aggression in individuals with Asperger syndrome is unknown. However, there is sporadic reference in research journals, as well as in popular trade publications, of aggression occurring in this population at about the same prevalence as in the general population (Attwood, 2008). There has been some suggestion in the literature that, for some individuals with Asperger syndrome, aggression may be the result of "faulty emotion regulation or control mechanism for expressing anger" (Attwood, 2008). Other explanations that have been advanced to account for aggression in this population include the need to achieve some control over situational contexts—to meet personal preferences and choices (e.g., tangibles) and to avoid or escape from tasks or unpleasant situations. For some, aggression may mask other psychiatric conditions, such as mood disorder or anxiety, which are often comorbid with Asperger syndrome.

In a recent review of treatments for aggression in Autism Spectrum Disorders (ASD), Singh, Lancioni, Winton, and Singh (in press) reported the following with reference to individuals with Asperger syndrome: (1) a few case reports describing aggression and its treatment, but only in qualitative terms; (2) minimal literature on behavioral interventions for aggression; and (3) minimal literature on psychopharmacological interventions for aggression. One explanation for the paucity of treatment literature is that research studies typically utilize institutionalized populations, and individuals with Asperger syndrome invariably live in the community. A related reason is that aggression is a low rate behavior in most community populations, and rarely do people in the community seek interventions for anger or aggression.

There is a small but encouraging literature attesting to the feasibility of using a mindfulness-based intervention to treat aggression. The procedure, *Meditation on the Soles of the Feet* (SoF), has proven effective in treating aggression in individuals with intellectual disabilities and/or mental illness, adolescents with conduct disorder, forensic offenders with ID, and others with anger management problems (Singh, Lancioni, Winton, Adkins, et al., in press). In a recent study, we taught SoF to help three adolescents with autism so that they could self-manage their physical aggression (Singh, Lancioni, Manikam, et al., 2011). This procedure required the adolescents to rapidly shift the focus of their attention from the aggression-triggering event to a neutral place on their body, the soles of their feet. Across the three adolescents, the mean rates of aggression per week ranged from 14 to 20 during baseline and from 4 to 6 during mindfulness training, reaching zero during the last 4 weeks of intervention. No aggression occurred during the 1-year maintenance period, and only about 1 instance per year during a 3-year follow-up.

Given that adolescents with autism were able to learn and effectively use a mindfulness-based procedure to self-manage their physical aggression for several years, we suspected that adolescents with Asperger syndrome would be even more successful at using the procedure, because they do not have the cognitive disabilities typically associated with those who have autism. Thus, the aim of this study was to evaluate the effectiveness of SoF for three adolescents with Asperger syndrome to self-manage their aggressive behavior.

2. Method

2.1. Participants

Three adolescents with Asperger syndrome participated. All three had lived in the community with their parents, and had never been institutionalized. They attended their local schools, were in regular education classes, and did not receive any additional services because they had Asperger syndrome. However, their teachers and school psychologists had developed and implemented several behavioral interventions (e.g., tokens, differential reinforcement procedures, time out, reporting to the principal contingent on aggressive behavior) for their aggressive behavior, as they had for other children at the school who did not have Asperger syndrome. The adolescents had been on medication (i.e., new generation antipsychotics) at least once prior to enrolment in this study. None was on medication during the course of this study and follow-up. Their aggressive behaviors were minimal at school, and their teachers were well trained to manage the low incidence of aggression. The reason for enrollment in the study was because their parents were unable to manage their aggressive behaviors at home and during outings in the community.

John, a 15-year-old, had a history of being aggressive from the age of 2 years, and despite various treatments, including behavioral and psychopharmacological regimens, his behavior kept escalating at home until his parents were on the verge of seeking inpatient treatment. The topography of his aggression included hitting, kicking, biting, and scratching. Functional assessment suggested high rates for demand, escape, and avoidance. John had two siblings, a brother aged 13, and a sister aged 11 years.

Paul, a 13-year-old, had a 3-year history of aggressive behavior that appeared impulsive and full of rage. The topography of his aggression included hitting, kicking, slapping, scratching, and destroying property. Functional assessment indicated no clear motivation for his aggression. He had been treated with behavioral programs and medication, both having minimal long-term effectiveness. He was becoming unmanageable at home. Paul had a twin brother.

George, an 18-year-old adolescent, had a long history of aggressive behavior from the age of 4 years. The topography of his aggression was punching, hitting, and kicking. Functional assessment indicated no clear motivation but demands and avoidance were possibilities. He had been treated with behavioral procedures, restraints, and psychotropic medications, none with lasting effects. George had a 14-year-old brother.