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A mindfulness-based strategy for self-management of aggressive behavior in adolescents with autism

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ABSTRACT

Some individuals with autism engage in physical aggression to an extent that interferes with not only their quality of life, but also that of their parents and siblings. Behavioral and psychopharmacological treatments have been the mainstay of treatments for aggression in children and adolescents with autism. We evaluated the effectiveness of a mindfulness-based procedure, *Meditation on the Soles of the Feet*, in helping three adolescents to manage their physical aggression. 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. Incidents of aggression across the three adolescents ranged from a mean of 14–20 per week during baseline, 4–6 per week during mindfulness training, including zero rates during the last 4 weeks of intervention. Aggression occurred a rate of about 1 per year during a 3-year follow-up. Our results suggest adolescents with autism can learn, and effectively use, a mindfulness-based procedure to self-manage their physical aggression over several years.

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1. Introduction

Current epidemiological research suggests an increasing prevalence of autism spectrum disorder (ASD) during the last decade (Matson & Kozlowski, 2011). In recent studies, Kogan et al. (2009) reported 110 per 10,000 point-prevalence of parent-reported diagnosis of ASD among US children aged 3–17 years in 2007, and the Center for Disease Control and Prevention (CDC, 2009) reported 90 per 10,000. Even when variation in terms of age of the children, gender, race/ethnicity, and sociometric status, and survey sample size is taken into account, the prevalence of ASD appears to be increasing dramatically. Further, although early behavioral interventions may provide a positive prognosis for some children (Matson & Smith, 2008; Peters-Scheffer, Didden, Korzilius, & Sturmey, 2011), this is a lifelong condition with its attendant educational, social, and therapeutic challenges for the majority of children with ASD.

Many children with ASD will evince challenging behaviors in their developmental years, and for some these behaviors will persist in adolescence and adulthood. Although there is a paucity of prevalence studies on these types of behaviors in individuals with ASD, rates as high as 45% have been reported (Poppes, Putten, & Vlaskamp, 2010). Challenging behaviors, especially aggression, often constitute major barriers to independence and a reasonable quality of life in the community (Hastings, 2002; Singh, Lancioni, Winton, & Singh, in press).

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The most common interventions for aggressive behaviors in individuals with ASD are based on principles and procedures derived from applied behavior analysis and positive behavior support (Carr, 2007; Carr et al., 2002). The most effective behavioral interventions are based on a functional assessment technology that enables researchers and clinicians to derive and test hypotheses about the functions of aggression in specific settings (Matson, 2009; Matson & Nebel-Schwalm, 2007). Typically, at least one intervention is clearly aligned with the key function of the aggressive behavior. The interventions vary in scope, ranging from a single focus (e.g., to eliminate aggressive behavior) to multiple foci (e.g., to eliminate aggressive behavior, teach social interaction skills, and improve quality of life). Generally, behavioral interventions for aggression in individuals with autism can be broadly divided into three groups: (a) antecedent strategies; (b) instructional strategies; and (c) contingency management strategies (see Singh, Lancioni, Winton, & Singh, *in press*, for a review). Current evidence suggests that to varying degrees, all three strategies produce good control of aggressive behavior in individuals with autism, at least in the short term (Matson, 2009; Singh, Lancioni, Winton, & Singh, *in press*).

The second most common intervention for aggressive behaviors of individuals with ASD involve psychopharmacotherapy (Matson & Neal, 2009). Current research data are not very impressive regarding the effectiveness of psychopharmacotherapy for aggressive behavior in this population (Singh, Lancioni, Winton, & Singh, *in press*). There is suggestive evidence that one typical antipsychotic drug (i.e., haloperidol) and six atypical or new generation antipsychotics (i.e., risperidone, olanzapine, quetiapine, clozapine, ziprasidone, and aripiprazole) may be useful in reducing aggression in individuals with ASD. The evidence for the effectiveness of antidepressant drugs (i.e., fluvoxamine, fluoxetine, and sertraline) is much slimmer, and there is no good current evidence that any other class of drugs is effective in treating aggression in this population.

Both behavioral and psychopharmacological interventions for individuals with autism rely on external agents (e.g., parents, caregivers, and teachers) to administer the programmed contingencies or medications. However, the zeitgeist is to enable individuals with disabilities to learn self-management skills that will enable them to regulate their own behaviors and to achieve self-selected goals (Singh, Lancioni, Winton, Adkins, et al., *in press*). A strength of this approach is that self-management procedures avoid problems of generalization and maintenance because individuals are able to use the procedures in multiple settings, provide immediate self-reinforcement, and apply them to covert behaviors, thoughts, and feelings. In this context, the role of caregivers is to assist the individuals to select appropriate self-management strategies that match their cognitive ability, teach the individuals to use the strategies, provide support and encouragement, and generally be their cheer leaders as they learn, practice, and correctly use the selected techniques. It is well established that individuals with intellectual disabilities, particularly those with mild disabilities, can learn and use self-management strategies (e.g., Taylor, Novaco, Gillmer, Robertson, & Thorne, 2005). Research suggests that these individuals are able not only to accurately report their own emotional states, but also to respond appropriately to them (Rose, West, & Clifford, 2000). Whether these findings apply to individuals with autism who are aggressive is yet to be established.

There is an emerging body of research that attests to the effectiveness of mindfulness-based procedures in assisting individuals with intellectual disabilities to self-manage their challenging behaviors (Singh, Lancioni, Winton, Adkins, et al., *in press*; Singh, Winton, et al., 2006). For example, *Meditation on the Soles of the Feet* (SoF) has been shown to be reasonably effective for self-management of aggression, disruption, and property destruction by individuals with intellectual disabilities (Singh, Lancioni, Winton, Adkins, et al., *in press*). By using SoF, individuals can divert attention from an emotionally arousing thought, event, or situation that may lead to aggressive behavior to an emotionally neutral part of the body, the soles of the feet. The individual learns to stop, focus the mind back on the body, calm down, and then make a choice about how to react to the thought, event, or situation that triggered the aggressive behavior. Our experience with this mindfulness procedure strongly suggests that, once it is mastered to the point of automaticity, the individual can use it in multiple contexts, whether sitting, standing or walking slowly. SoF provides the individual with an internalized response that is portable, easy to master, and can be accessed in almost any situation.

In a previous study, we reported that when parents of children with autism are taught mindfulness practices, their children's challenging behavior, including aggression, decreased in the absence of direct intervention with the children (Singh, Lancioni, et al., 2006; Singh, Winton, et al., 2006). This indicated to us that children with autism could detect and respond to presumed mindful parenting behaviors, thereby producing changes in their challenging behaviors. In the present study, we were interested in investigating whether adolescents with autism would be able to master SoF and use it effectively to manage their relatively high rates of aggressive behavior towards their siblings and parents, in the absence of mindfulness training for the parents.

2. Method

2.1. Participants

Three adolescents participated. Each adolescent had received a clinical diagnosis of autism spectrum disorder from a child psychiatrist. They lived at home with their families and attended local schools. All three had been referred for intervention because of relatively high rates of aggressive behavior at home. Mike was a 14-year-old boy in the 6th grade, had two older brothers and a sister, and engaged in hitting and kicking family members. Chris was a 16-year-old boy in the 9th grade, had an older brother, and engaged in hitting, kicking and biting family members. Steve was a 17-year-old boy in the 10th grade, had two younger sisters and one brother, and engaged in kicking and biting family members. All three adolescents had been prescribed psychotropic medications to control their aggressive behavior, but without any lasting effects. The parents had

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