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Effects of a mindfulness-based smoking cessation program for an adult with mild intellectual disability

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ABSTRACT

Smoking is a major risk factor for a number of health conditions and many smokers find it difficult to quit smoking without specific interventions. We developed and used a mindfulness-based smoking cessation program with a 31-year-old man with mild intellectual disabilities who had been a smoker for 17 years. The mindfulness-based smoking cessation program consisted of three components: intention, mindful observation of thoughts, and *Meditation on the Soles of the Feet*. A changing-criterion analysis showed that this man was able to fade his cigarette smoking from 12 at baseline to 0 within 3 months, and maintain this for a year. Follow-up data, collected every 3 months following the maintenance period, showed he was able to abstain from smoking for 3 years. Our study suggests that this mindfulness-based smoking cessation program merits further investigation.

1. Introduction

It has been estimated that 1.3 billion people in the world currently smoke cigarettes or tobacco related products (Guindon & Boisclair, 2003). In the United States, about 20% of the population (i.e., 43 million people) smoked cigarettes in 2007. Smoking is the most frequently occurring preventable cause of disability and death. In the United States, at least 30% of all cancer deaths are attributed to tobacco use, with smoking causing about 87% of lung cancer deaths. In addition, smoking is responsible for many non-cancerous lung diseases, such as chronic bronchitis, emphysema, and chronic obstructive pulmonary disease. Long-term smoking may also cause heart disease, aneurysms, bronchitis, emphysema and stroke, and worsen pneumonia and asthma, negatively impact the immune system, and increase the risk of sexual impotence in male smokers. Short-term smoking may result in poor lung function (which may cause shortness of breath and nagging coughs), reduced ability to smell and taste, premature aging of the skin, bad breath, and stained teeth.

The prevalence of smoking in individuals with intellectual disabilities varies widely across studies, depending on the sample size, community versus institution versus clinical samples, living arrangements, age range, gender, degree of intellectual disabilities, and comorbid mental illness. For example, in chronological order, a comprehensive sample of studies reported the following smoking prevalence rates: 7.6% in an institution and 25.6% in group homes (Rimmer, Braddock, & Marks, 1995); 36% in individuals with mild intellectual disabilities in independent community living settings (Tracy & Hosken, 1997); 18% in clinic-referred adults with severe to borderline intellectual disabilities (Hymowitz, Jaffe, Gupta &

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Feuerman, 1997), 4% of an adult institutional population (Peine, Darvish, Blakelock, Osborne, & Jenson, 1998); 12.7% of state and community residences in Massachusetts (Minihan, 1999); 2%, 8% and 12% of adults with intellectual disabilities residing in village communities, residential campuses, and dispersed housing in the United Kingdom (Robertson et al., 2000); 6.2% of adults attending four social services day centers (Taylor, Standen, Cutajar, Fox, & Wilson, 2004); 14% self-reported smoking in adolescents with intellectual disabilities (Emerson & Turnbull, 2005); 26% of adolescents with mild intellectual disabilities were occasional or regular smokers (Kalyva, 2007). As these studies show, smoking is a reasonably common activity for many individuals with intellectual disabilities.

Only a single published study could be located that attempted to reduce or eliminate smoking in individuals with intellectual disabilities. Peine et al. (1998) used a spinning wheel, similar to that in the *Wheel of Fortune* TV program, to reduce smoking by two adults in a developmental disabilities center. Prior to the intervention, if the individuals did not engage in maladaptive behavior (e.g., aggression) for an hour, they could get a cigarette. While this reduced maladaptive behavior, it resulted in high numbers of cigarettes smoked. During intervention, absence of maladaptive behavior for an hour now led to the opportunity to spin the wheel that offered various choices including cigarettes, coffee, tea, diet soda pop, diet candy, fruit juices and magazines. The probability of the spin landing on a cigarette choice reduced the opportunity to get a cigarette each hour, and this led to a 50% reduction in smoking by the end of the 3-year study.

The aim of our study was to assess the effectiveness of a mindfulness-based smoking cessation program for an individual with mild intellectual disability whose smoking had proved intractable to treatment with other approaches (e.g., nicotine replacement therapy, pharmacotherapy, etc.).

2. Method

2.1. Participant

Paul was a 31-year-old man who had been institutionalized for 10 years from the age of 9 years. He was admitted to the developmental center because his family could not manage his severe aggressive and destructive behaviors, and he had been refused attendance at a special school for the same reasons. When admitted to the developmental center, he was assessed as functioning at a mild level of intellectual disability, with uncontrolled maladaptive behaviors. He was not diagnosed with a psychiatric disorder, but the admitting psychiatrist noted that his behavior was very impulsive. He was included in the developmental center's token economy program and put on a behavior modification program to control his aggressive and destructive behaviors. His maladaptive behaviors were substantially controlled by the age of 18. By the time he was transitioned to a community group home at the age of 19, he had been a smoker for almost 5 years. In the developmental center, he smoked as many cigarettes as staff gave him, usually between 15 and 20 a day. In the first group home he was transitioned to he was allowed to purchase and smoke as many cigarettes as he wished. His smoking increased to an average of 30 cigarettes a day. When transitioned to a second group home, which was closer to his work, his smoking was restricted to 12 cigarettes a day, and he was not allowed to smoke indoors. At this group home, the staff enrolled him in health wellness classes at the local wellness center, and he slowly began to adapt his lifestyle to incorporate wellness activities into his daily schedule. At the age of 25, he began a series of programs to quit smoking. These included abrupt stopping of smoking, nicotine replacement therapy, pharmacotherapy (i.e., bupropion), contingency management, and other informal approaches. At best, over the 6-year period of trying to quit smoking, he was able to abstain from smoking for a maximum of 49 consecutive days. At age 31, when he was offered an opportunity to live independently if he could quit smoking, his group home staff requested treatment for Paul using mindfulness-based strategies. Paul consented to the treatment and agreed to adhere to the treatment protocol.

2.2. Therapist

Mindfulness training was provided by a therapist who had extensive experience in mindfulness meditation practice as well as clinical expertise and experience in service delivery to individuals with intellectual disabilities.

2.3. Procedure

2.3.1. Design

We used a changing criterion design (Barlow, Nock, & Hersen, 2009). Following baseline, the mindfulness practice was introduced, with the individual being responsible for determining each successive criterion during the intervention (mindfulness practice) phase. This was followed by a 12-month maintenance period and follow-up for 3 years after the termination of maintenance procedures.

2.3.2. Assessment

Interviews with group home staff and Paul indicated that he was allowed and smoked 12 cigarettes a day, regardless of whether it was a workday or weekend. Interviews at his work place showed that he did not smoke extra cigarettes at work, and that he adhered to his 12-a-day limit.