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Review

Mind–body practices: An alternative, drug-free treatment for smoking cessation? A systematic review of the literature

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ABSTRACT

Objective: The limited success of current smoking cessation therapies encourages research into new treatment strategies. Mind–body practices such as yoga and meditation have the potential to aid smoking cessation and become an alternative drug-free treatment option. The aim of this article is to assess the efficacy of yoga and other meditation-based interventions for smoking cessation, to identify the challenges of clinical trials applying mind–body treatments, and to outline directions for future research on these types of therapies to assist in smoking cessation.
Methods: A systematic review of the scientific literature.
Results: Fourteen clinical trials met the inclusion criteria defined for this review. Each article was reviewed thoroughly, and evaluated for quality, design, and methodology. Although primary outcomes differed between studies, the fourteen articles, most with limitations, reported promising effects supporting further investigation of the use of these practices to improve smoking cessation.
Conclusions: The literature supports yoga and meditation-based therapies as candidates to assist smoking cessation. However, the small number of studies available and associated methodological problems require more clinical trials with larger sample sizes and carefully monitored interventions to determine rigorously if yoga and meditation are effective treatments.

Contents

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1. Introduction

1.1. Prevalence and health problems associated to tobacco smoking

Tobacco smoking is a major preventable cause of premature death and disease. Despite knowledge about its negative health consequences, the global adult cigarette smoking prevalence in 2010 was still 23.7%. Previous declines in smoking prevalence have plateaued since 1990 and, in status quo conditions, prevalence is predicted to be of 22% in 2030 (Mendez et al., 2013). The World Health Organization (WHO) estimates that approximately 5.4 million people die each year due to smoking-related illnesses and an increase to more than 8 million a year is expected by 2030 (Mathers and Loncar, 2006; World Health Organization, 2008a). Smoking causes cancer, heart disease, stroke, and lung diseases (including emphysema, bronchitis, and chronic airway obstruction). Data from the United States, indicate that, for 2000 through 2004, leading causes of smoking-attributable death were cancer (41%), cardiovascular diseases (32.7%), and respiratory diseases (26.3%; Centers for Disease Control and Prevention, 2008).

1.2. Present smoking cessation treatments

As described in the International Classification of Diseases (ICD-10; World Health Organization, 2008b), tobacco is addictive and conforms with the characteristics of a substance abuse disorder: repeated administration, impaired control over use, repeated relapse after quit attempts, high motivation to seek the drug, and physical dependence (tolerance, withdrawal). The majority of adult smokers state that they want to quit smoking (69%) and 52% report having at least one quit attempt within the past year, but only 6.2% are still abstinent one year after quitting (Centers for Disease Control and Prevention, 2011). A number of cessation treatments are available, including behavioral therapies (telephone quit-lines, one-on-one counseling sessions, or cessation clinics, classes, or support groups) and pharmacological approaches. Among non-pharmacological interventions, counseling is the most frequently used approach, but others have also been explored, including mindfulness-based approaches, cognitive behavioral therapy, behavioral activation therapy, motivational interviewing, contingency management, and exposure and/or aversion to smoking (Niaura, 2008; Schlam and Baker, 2013). Approved pharmacological interventions include a variety of nicotine replacement therapies (gum, lozenge, patch, nasal spray and oral inhaler) with effect sizes of 1.60 (1.53, 1.68) as compared to placebo at 6-months follow-up (Stead et al., 2012), the atypical antidepressant bupropion (effect size 1.69 [1.53, 1.85] when compared to placebo with follow-up at 6-months (Hughes et al., 2007)), and varenicline (effect size 2.27 [2.02, 2.55] compared to placebo at 6-months follow-up [Cahill et al., 2012]). However, to date, pharmacological treatments produce side effects (varenicline has been associated with depression and cardiovascular disease [Moore et al., 2011; Singh et al., 2011]), and have shown modest efficacy in the long term (12-month abstinence rates have been lower than 30%; Alberg et al., 2005; Borland et al., 2012; Eisenberg et al., 2008; Hughes et al., 2007; Pierce and Gilpin, 2002; Schlam and Baker, 2013; Tonnesen et al., 2003). Combinations of interventions appear more effective than single approaches, and the combination of pharmacotherapy plus non-pharmacologic interventions is more effective than either method alone (effect size of 1.82 [1.66, 2.00] when compared to a minimal intervention or usual care, and 12-month cessation rates over 30% being reported in the literature [Anthonisen et al., 1994; Stead and Lancaster, 2012]). Therefore, at present, evidence-based recommendations suggest a combination of pharmacological treatments and behavioral methods to improve long-term cessation (Fiore et al., 2008). Maintenance of abstinence is still a major challenge for ex-smokers (Centers for Disease Control and Prevention, 2011; Schlam and Baker, 2013) and underlies the need for identifying additional long-term efficacious smoking cessation treatments.

1.3. CAM treatments for smoking cessation

Complementary and alternative medicine (CAM), including a subset consisting of traditional medicine, is a group of medical, healthcare, and lifestyle practices that are not presently considered to be part of conventional medicine in the country's dominant healthcare system (National Center for Complementary and Alternative Medicine, 2008a; World Health Organization, 2000). In the past decade there has been renewed attention and interest in the use of CAM globally (Harris et al., 2012). A survey-based study showed that a significant percentage of smokers (27%) use CAM in addition to, or as replacement of, conventional smoking cessation treatments (Sood et al., 2006). In addition, 67% of smokers seeking treatment indicate that they would be interested in using CAM