



Review

Randomized controlled trial lifestyle interventions for Asian Americans: A systematic review



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ABSTRACT

Objective. Asian Americans are the fastest-growing race in the United States. However, they are largely under-represented in health research, particularly in lifestyle interventions. A systematic review was conducted to analyze the characteristics and quality of lifestyle intervention literature promoting changes in physical activity (PA), diet, and/or weight management targeting Asian Americans.

Method. A systematic electronic database search identified randomized controlled clinical trials (RCTs), involving lifestyle interventions for Asian Americans, published from 1995 to 2013 conducted in the US. Data extraction was conducted from August through December 2013.

Results. Seven RCTs met the review criteria. Cross-study comparisons were difficult due to diversity in: RCT intervention designs, cultural appropriateness, outcome measures, sample size, and race/ethnic groups. Overall, risk of bias and cultural appropriateness scores were moderate to low. Five out of seven RCTs showed significant between group differences for PA, diet, and weight. In general, sample sizes were small or lacked sufficient power to fully analyze intervention efficacy.

Conclusion. Evidence of the efficacy for lifestyle interventions among Asian Americans was mixed. Recommendations include: more rigorous RCT designs, more objective measures, larger Asian American sample sizes, culturally appropriate interventions, individual tailoring, maintenance phase with support, and providing education and modeling of lifestyle behaviors.

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Introduction

Asian Americans are the fastest-growing racial group in the United States (US Census Bureau, 2013). In 2012, there were approximately 18.9 million Asians living in the US, comprising nearly 6% of the total US population (Pew Social Demographic Trends, 2012). The six largest Asian American populations are: Chinese (3.8 million), Filipinos (3.4 million), Asian Indians (3.2 million), Vietnamese (1.7 million), Koreans (1.7 million), and Japanese (1.3 million). Approximately 74% of Asian American adults are born outside of the US with half possessing limited English proficiency. Although the population of Asian Americans is projected to grow to 34.4 million by 2060, they are largely underrepresented in health research in general, and behavioral lifestyle intervention literature for this group is minimal (Palaniappan et al., 2010).

Physical inactivity and poor diet are independent risk factors for multiple diseases, such as diabetes and cardiovascular disease. Evidence indicates that lifestyle interventions promoting physical activity (PA) and healthy nutrition are effective in mitigating these risk factors, which are prevalent across all racial/ethnic groups (Hooper et al., 2011; Hu et al., 2012; Knowler et al., 2002). Asian Americans tend to be physically inactive and less likely to meet the recommendations of the 2008 National Physical Activity Guidelines, as compared to Whites (Afable-Munsuz et al., 2010; Kandula and Lauderdale, 2005). Limiting saturated fats and carbohydrates (e.g., refined sugar) in the diet have been effective in reducing risks for obesity, diabetes, and cardiovascular disease (CVD) (Malik et al., 2010; Siri-Tarino et al., 2010). However, some Asian American (e.g., South Asian Indians and Filipinos) diets are high in saturated fats (e.g., clarified butter, hydrogenated oils, pork fat, and coconut products) (Centers for Disease Control and Prevention, 2013; Kittler and Sucher, 2008). Furthermore, although the average body mass index (BMI) among Asian Americans is relatively lower compared to other racial/ethnic groups, Asians have a propensity for abdominal adiposity, increasing their risk for type 2 diabetes and CVD at lower BMI cutoff levels (Hu, 2011). Analysis of the California Health Interview Survey (using the World Health Organization Asian BMI cutoff levels) found Asian Americans, particularly Filipinos with the highest prevalence for obesity and type 2 diabetes among all racial/ethnic groups (Jih et al., 2014; WHO, 2004). Thus, Asian Americans face unique health challenges today.

A recent systematic review of lifestyle interventions (related to PA, diet, and weight management) conducted in the US reported that a majority of study samples were comprised primarily of well-educated White Americans (Artinian et al., 2010). Although there are several systematic reviews and/or meta-analysis of lifestyle interventions targeting ethnic minorities, most are focused on African Americans and Hispanics (Glazier et al., 2006; Tussing-Humphreys et al., 2013; Whitt-Glover and Kumanyika, 2009). Furthermore, a cursory review of

lifestyle intervention studies promoting PA, diet, and weight loss/management yielded few, if any studies targeting Asian Americans predating 1995. To the best of our knowledge, there are no systematic reviews and/or meta-analyses that examined the overall effectiveness of published behavioral lifestyle interventions or identified potential strategies to promote PA, healthy diets, or weight loss/management for Asian Americans.

Therefore, the goal of this paper was to systematically review, summarize, and synthesize the characteristics, quality, and key factors related to efficacy of the lifestyle intervention literature that incorporate strategies promoting PA, diet, and/or weight management targeting Asian Americans. Evaluation of overall study quality was based on the Cochrane Collaboration risk of bias criteria. Evaluation of intervention design quality was based in part on the cultural adaptation strategies used to achieve cultural appropriateness. Culturally tailored interventions that are appropriate for racial/ethnic populations are shown to increase the effectiveness and adherence for health behavior change, and support the internal reliability of results (Elder et al., 2009; World Health Organization, 2009). It may be difficult to culturally adapt an intervention if it includes multiple racial/ethnic population samples. Although overlooked by many major systematic reviews, interventions focused on specific racial/ethnic populations should be assessed for cultural appropriateness (Bender and Clark, 2011). Findings from this review will help identify knowledge gaps and aid future lifestyle intervention designs for Asian Americans.

Methods

Search strategy

In collaboration with a professional librarian, a comprehensive literature search was performed on controlled studies involving lifestyle intervention targeting Asian Americans. Five electronic databases were searched including: PubMed, EMBASE, CINAHL, PsycINFO®, and Web of Science®. Three specific lifestyle health behaviors were of interest: physical activity, diet/nutrition, and weight loss/management. For this review, the term “Asian”, per the US Census Bureau (2010) definition refers to individuals, “... having origins in any of the original peoples of the Far East, Southeast Asia, or the Indian subcontinent” (Hoeffle et al., 2012). Search terms include all Asian groups from these regions. The term “American” was used to distinguish Asian groups residing in (versus outside) the United States. The search included various combinations of the following key words: Asian, American, Chinese, Vietnamese, Filipino, Korean, Japanese, Thai, Malaysian, Taiwanese, Cambodian, Burmese, Indonesian, Laotian, Mongolian, Bhutanese, South Asian, Indian, Bangladeshis, Pakistani, Pacific Islander, physical activity, exercise, leisure activity, diet, nutrition, weight, weight loss/reduction, weight management, intervention, lifestyle behaviors, health promotion, and behavior change. Online Google searches were employed and reference sections of included articles were searched to identify additional articles. See Appendix 1 for detailed search terms and step-by-step procedures.

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