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Review

Smoking cessation interventions for ethnic minority groups—A systematic review of adapted interventions

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ABSTRACT

Objective. Existing smoking cessation interventions tend to be under utilized by ethnic minority groups. We sought to identify smoking cessation interventions that have been adapted to meet the needs of African-, Chinese- and South Asian-origin populations, to increase understanding of the approaches used to promote behavior change, to assess their acceptability to the target populations, and to evaluate their effectiveness.

Methods. Two reviewers independently searched for, identified, critically appraised and extracted data from studies identified from 11 databases (January 1950–April 2013). Study quality was assessed using validated instruments (EPHPP and STROBE). Adaptations were independently coded using an established typology, and findings descriptively summarized and thematically synthesized.

Results. 23 studies described interventions adapted for African-Americans, and five for Chinese-origin populations. No intervention adapted for South-Asian populations was identified. Six studies directly compared a culturally adapted versus a non-adapted intervention. Adapted interventions were more acceptable to ethnic minority groups, but this did not translate into improvements in smoking cessation outcomes.

Conclusions. Given the evidence of greater acceptability of adapted interventions, it may be ethically preferable to use these. There is, however, no clear evidence of the effectiveness of adapted interventions in promoting smoking cessation in ethnic minority groups.

Contents

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Introduction

Morbidity and mortality from chronic diseases continues to disproportionately affect ethnic minority populations (Acheson Report, 1998; Johnson, 2006; Johnson et al., 2000; Nazroo, 1997; Sproston and Mindell, 2004). Smoking is the main preventable risk factor for many of these conditions, in particular, respiratory and cardiovascular diseases, and cancers (Ford et al., 2012). The health consequences of smoking are magnified for certain ethnic minority groups (Centers for Disease Control, Prevention, 2009): African Americans in the United States (US) have, for instance, a significantly higher smoking-attributable mortality and double the years of potential life lost when compared to the White European-origin population (Schorling et al., 1997).

Smoking cessation has substantial health benefits (Bala et al., 2008; Department of Health and Human Services, 1990), for example, a two-fold reduction in the risk of lung cancer (McBride et al., 2002), and a 50% reduction of the excess risk for a cardiovascular event within the first two years after stopping smoking (Lightwood and Glantz, 1997). Preventive medicine, either to avoid disease (primary prevention), or to prevent complications and improve prognosis in those with an established diagnosis (secondary prevention), has been identified as the best approach to reduce morbidity and mortality from chronic diseases (Sallis, 2012; United Nations General Assembly, 2011). Due to the higher smoking rates exhibited by some ethnic minority groups (Fagan et al., 2004) and consequently higher associated morbidity and mortality, there is an urgent public health need to find effective ways of promoting smoking cessation in these groups (Lawrence et al., 2003).

Smoking, however, is a risk factor intimately connected with everyday life—which, in turn, is influenced by ethnicity and its relationship with health understandings, living conditions, social patterns, and behaviors (Singer, 2012). Diverse ethnic groups therefore respond differently to smoking cessation interventions (Fu et al., 2007). Despite reporting greater desires to quit and higher rates of attempted quits, African-American smokers have lower rates of successful quit attempts when compared to the general population (Ahluwalia et al., 1998a, 2002; Giovino, 2002). Chinese-American smokers are also found to be less likely to seek assistance to quit smoking compared to the general population (Wong et al., 2008). Different patterns of tobacco use have also been observed: for example, African Americans smoke fewer cigarettes per day, but are more likely to smoke mentholated or higher tar and nicotine cigarettes than the general population (Ahluwalia et al., 1998a). Interventions for smoking cessation in ethnic minority groups should thus be adapted accordingly to take into account these unique patterns of risk and protective factors (Fiore, 2000), as well as other culturally relevant dimensions such as values, beliefs and practices. In this

This work represents an in-depth analysis of studies of smoking cessation programs that have been adapted to account for these unique patterns in African-, Chinese- and South Asian-origin populations, residing in 'Western' countries where they constitute a minority population. The full report to funders, which includes two additional adapted health promotion streams, namely, physical activity and healthy eating, has been published by the Health Technology Assessment (Liu et al., 2012), and an overview paper of guidelines and systematic reviews promoting lifestyle interventions has been published by the European Journal of Public Health (Davidson et al., 2013). In this paper, we focus specifically on smoking cessation interventions that have been adapted for these ethnic groups of interest to provide a detailed account of their acceptability, effectiveness as well as the approaches used for adaptation.

Methods

This work represents an integral component of a larger multi-phased program of work commissioned by the UK's Medical RESEARCH Council, the details of which have been reported elsewhere (Liu et al., 2012). The search strategy is detailed in Appendix A. Studies were identified from 11 databases (Jan 1950–April 2013): Applied Social Sciences Index and Abstracts (ASSIA); BIOSIS; Campbell Collaboration; Cumulative Index to Nursing and Allied Health Literature (CINAHL); Cochrane Central Register of Controlled Trials (CENTRAL); Embase; Latin American and Caribbean Health Sciences Literature (LILACS); Medline; PsychInfo; NHS Evidence Specialist Collection for Ethnicity and Health (SCEH); and Web of Science (WoS), and were subsequently assessed against the nclusion and exclusion criteria listed in Table 1. Two reviewers then independently extracted data from these studies (Appendix B), with select data summarized in Table 2. Study quality was assessed with the Effective Public Health Practice Project (EPHPP) tool for experimental studies, and using relevant criteria in the Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) tool (von Elm et al., 2007) for observational studies.

A 46-item typology of adaptations, developed in an earlier phase of work from this program of research (Liu et al., 2012), and later refined (Davidson et al., in press) was used to code the approaches used to modify each intervention to meet the needs of the specific ethnic minority group. The 46 adaptations are further divided into six categories: collaborative working, team, sponsorship (building ownership), materials, messages and delivery. The heterogeneity of studies did not allow for meta-analysis, and thus findings were descriptively summarized and then thematically synthesized.

Results

Eligible studies

In total, 28 studies, described in 40 papers, satisfied our inclusion criteria (Fig. 1). All 28 of these studies were US-based, and interventions were, in the majority of studies, adapted for African Americans (23 stud-

Table 1
Inclusion criteria.

Population	Children and non-pregnant adults of African-, Chinese- or South Asian-origin.
Intervention	Any health promotion interventions (individual, community, population, policy-level) promoting smoking cessation. Primary or secondary health promotion interventions were included. Only studies which clearly described the adaptations that were undertaken (rather than merely stating the intervention was adapted without any further elaboration) were included.
Outcomes	Any effective outcomes related to smoking cessation (e.g. quit attempts, quit rates, abstinence, number of cigarettes smoked—both validated and self-reported measures).
Date	Published between January 1950–April 2013.
Language	No language restriction.
Study design	No restrictions (thus including experimental studies e.g. randomized controlled trials (RCTs), controlled clinical trials (CCTs), controlled before-and-after (CBA) studies, interrupted time series (ITS), before-and-after, and pilot intervention studies; and also qualitative studies).