LIFESTYLE THERAPY CHANGES AND HYPERCHOLESTEROLEMIA: IDENTIFYING RISK GROUPS IN A COMMUNITY SAMPLE OF BLACKS AND WHITES

Objective: To examine diet and exercise lifestyle therapy change (LTC), behaviors and their relation to hypercholesterolemia in a community sample of Blacks and Whites.

Design: Latent class analysis (LCA) was employed to identify homogeneous subgroups of community dwelling Blacks and Whites related to LTC for hypercholesterolemia. LCA is a statistical technique used to identify subgroups of individuals who share a similar pattern of responses to a set of observations. The relation between hypercholesterolemia and latent class membership was assessed.

Participants: Adults age 18 and over who participated in a county-level adaptation of the Behavioral Risk Factor Surveillance System.

Main Outcome Measure: Hypercholesterolemia (absence or presence).

Results: Eleven unique latent classes of LTC behavior emerged from LCA models. Exercisers and Fat Reducers represented between 19% and 29% of each race-sex group. Latent class membership probabilities varied substantially across race and sex. Only Black women had a class of Contemplators (21.5%). Overall, men and Blacks with self reported hypercholesterolemia were more likely to engage only in fat reduction but not increase in vegetable consumption, reduction of fat or regular exercise (odds ratios range from 1.8–3.5).

Conclusions: The distribution of diet and exercise related LTC behaviors in relation to self-reported hypercholesterolemia can help to identify, understand and tailor culturally and sex specific interventions based on the proportions of men and women in different latent classes. (Ethn Dis. 2009;19:142–147)

Key Words: Hypercholesterolemia, Latent Class Analysis, Lifestyle Therapy Changes

INTRODUCTION

Hypercholesterolemia is a major risk factor for heart disease. Maintaining low levels of cholesterol, specifically low-density lipoprotein cholesterol, has been linked to a reduction in cardiovascular complications such as hypertension, atherosclerosis, and coronary death. In addition to cholesterol-lowering pharmacologic therapy, lifestyle changes such as eating less fat, eating more fruits and vegetables, and exercising more are important for moderating cholesterol levels.

Although no racial and ethnic disparities have been documented in the prevalence or incidence of hypercholesterolemia, African Americans are more likely to have poor cardiovascular outcomes than are Whites. Furthermore, African Americans do not necessarily differ from Whites in their receipt of medical management of high cholesterol. However, African Americans as a group are less likely to engage in the recommended lifestyle changes for reducing cholesterol levels than are Whites and are more likely to report barriers to those changes.

By examining behaviors such as fruit and vegetable intake, dietary fat intake, and exercise behavior simultaneously, a more complete assessment of an individual’s cardiovascular risk-related behaviors can be obtained. However, this is a complex set of behaviors; individuals may adhere to some lifestyle behaviors and not to others. This complexity can make it difficult to summarize cardiovascular risk-related behaviors in a population, and to examine the relation between hypercholesterolemia and this set of behaviors. Capturing this can assist in the creation of comprehensive interventions that are patient-specific.

Interventions that target multiple lifestyle changes are ideal but are challenging for patients to implement and maintain. Therefore, better understanding the effect of multiple lifestyle behaviors on the management of hypercholesterolemia can help inform more effective intervention strategies. We examine participation in dietary and exercise behavior associated with the management of cholesterol in a community-based sample of Blacks and Whites.

METHOD

Participants

The data used for this study are from a county-level adaptation of the Behavioral Risk Factor Surveillance System (BRFSS) developed by the Centers for Disease Control and Prevention (CDC). In the first 7 months of 2001, the Metropolitan Public Health Department of Davidson County, Tennessee, conducted a local adaptation of the BRFSS. Adults aged ≥18 years who were not institutionalized were eligible to participate in the telephone interview. The survey contained items from the CDC’s BRFSS survey, including questions on participant demographics such as age, sex, and race and indicators of lifestyle behaviors, including exercise, fruit and vegetable intake, and fat intake. The sample used for analysis consisted of 7014 respondents who returned fully completed surveys and reported their race as either Black or White. The response rate was 40%, which is within the typical range of response rates for CDC BRFSS state surveys.