

Harvard School of Public Health

Project Name ...

Reducing Disease Risk in Low-income, Postpartum Women

Principal Investigator ...

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Background / Significance of Problem ...

Substantial research documents benefits of a low-saturated fat, high fruit and vegetable diet, and increased activity on risk for chronic, preventable conditions, including obesity, type 2 diabetes, coronary heart disease, stroke and certain cancers. Recent data suggest an intervention design addressing interrelated behavioral risk factors, though challenging to design and implement, may maximize its impact on an individual's health and substantially reduce incidence of chronic diseases in the long term. Disparities in diet and activity behaviors and their sequelae further underscore the need for effective interventions in low-income, multi-ethnic women, yet influences at different levels may act as barriers to changing risk behaviors. Following the birth of a child, childrearing and social isolation can exacerbate these influences. The social ecological framework integrates behavior change strategies at different levels, providing a strong theoretical base for developing interventions in this high-risk population. Our intervention model fosters institutional change to support behavior changes influenced at intra- and interpersonal levels, through collaboration with institutional partners, e.g., USDA's Special Supplemental Food Program for Women, Infants and Children (WIC) and the Expanded Food and Nutrition Education Program (EFNEP). If shown to be efficacious, this program will be readily sustainable through existing federal agencies.

Research Question ...

This intervention trial evaluates the efficacy of an educational model delivered by community-based paraprofessionals addressing multiple levels of influence on diet and activity patterns of low-income, postpartum, multi-ethnic women in the first 12 months following the birth of a child. Specifically, will improvements in primary outcomes (fruit and vegetable intake, saturated fat consumption, total moderate-to-vigorous activity) and in secondary outcomes (pregnancy-related weight retention, BMI and indicators of fat mass and distribution) be significantly larger among those assigned to treatment group when compared with those assigned to control? To what extent do various mediating and modifying factors play a role?

Findings To-Date ...

We were successful in recruiting a diverse, multi-ethnic baseline sample, employing a range of strategies involving institutional partners that included adding several additional high-volume community recruitment sites and motivating staff support for recruitment by implementing incentive programs for referrals. Intervention tracking forms and monthly 'grand rounds' conducted by project staff in collaboration with EFNEP paraprofessionals provided a venue for review of individual participants in order to ensure fidelity and dose of the intervention. Among 660 women comprising the baseline analytic sample, mean age at recruitment was 27 years (inclusion criteria were 18-44 years). Three-quarters are Latina/Hispanic, 8% African American, 15% white. Almost two-thirds (64%) report Spanish as their native language as well as the language typically spoken at home (60%). The majority (54%) of Latinas are immigrants with an average time in U.S. of eight years. More than two-thirds (69%) of participants at baseline have 12 or fewer years of education; 34% did not graduate high school. At baseline, 88% (n=577) reported consuming fewer than five servings of fruits and vegetables per day. Of these, 68% planned to increase fruit and vegetable consumption to this level within the next six months. Intervention messages to reduce saturated fat intake emphasize three or fewer servings red meat per week; 52% of the sample were very sure they could limit red meat, 30% were somewhat sure. At baseline, the women were very inactive, but many were open to behavior change. Only 20% reported regular physical activity at baseline. Mean level of moderate activity estimated from the 7-Day PAR was 1.4 hrs./week, and mean vigorous activity level was .06 hrs/wk. Of those who reported no regular physical activity, 78% planned to engage in regular physical activity within the next 6 months.

Implications ...

[for multibehavioral and multi-theoretical approaches to behavior change]

We are currently completing post-intervention follow-up data collection on the sample. Pending an efficacious outcome of the trial, we anticipate we will demonstrate that the feasibility of multi-behavior change in low-income, immigrant new mothers will depend not only on receiving an intervention operationalizing behavioral theories at the intra- and interpersonal levels, but also on evidence of organizational change in programs serving the target population. Process implementation data will provide a useful adjunct to more formal RCT evaluation data.

Future Research Directions ...

We have received supplemental funding from non-governmental sources to build upon quantitative baseline analyses of dietary carbohydrate and whole grain consumption. We will utilize qualitative measures in a mixed-methods approach to investigate social and economic predictors in order to inform development of nutrition education curricula for low literacy audiences. Pending proposals include examination of the role of food security and program participation on primary study outcomes, and formative research using mixed methods to examine maternal beliefs, practices and behaviors in the cohort that may be related to child feeding and their relationship to infant diet and growth.