

Use of Focus Groups to Inform a Youth Diabetes Prevention Model

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ABSTRACT

Objective: To explore minority adolescents' perceptions of their diabetes risk, barriers and facilitators to adopting lifestyle changes, and ideas for adapting a youth diabetes prevention model.

Methods: The study was conducted at collaborating community sites in East Harlem, NY. Trained moderators facilitated focus groups, which were audio taped and transcribed. Participants were 21 Latino and African American adolescents aged 14–18 years with a family history of diabetes and no reported personal history of diabetes. The phenomenon of interest was youth input in adapting a diabetes prevention model. Two researchers independently coded transcripts, identified major themes, compared findings, and resolved differences through discussion and consensus.

Results: Dominant themes included (1) the impact of diabetes on quality of life within adolescents' personal networks; (2) conflict between changing diet and activity and their current lifestyle; (3) lifestyle choices being dictated by cost, mood, body image, and environment, not health; and (4) family, social, and environmental pressures reinforcing sedentary behaviors and unhealthy diets.

Conclusions and Implications: Themes from youth focus groups were framed in the context of an existing youth diabetes prevention conceptual model, with results informing expansion of the model and identification and organization of potential intervention components.

Key Words: youth, diabetes prevention, diet, physical activity, focus groups (*J Nutr Educ Behav.* 2015;47:532-539.)

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INTRODUCTION

The combined prevalence of diabetes and prediabetes in youth has increased from 9% to 23% in the past decade.¹ Prediabetes prevalence increases with weight (12% in normal weight, 18% in overweight, and 30% in obese adolescents).² If prediabetes incidence remains constant, the proportion of US youth with type 2 diabetes is projected to increase by 49% by 2050, with the greatest increase in racial/ethnic minority youth.³

Weight loss and to a lesser extent increased physical activity have been proven to prevent or delay diabetes among overweight or obese adults with prediabetes.⁴ Surprisingly, there are no similar proven interventions to prevent or delay diabetes in youth, in part because few lifestyle modification interventions have focused on diabetes prevention in youth. There is a compelling need for such interventions, particularly those that could be sustained in the low-income, minority communities

whose youth are at highest risk of diabetes.⁵

Peer-led education programs that promote lifestyle changes and weight loss represent an effective low-resource diabetes prevention strategy for adults in high-risk communities.^{6,7} Research suggests that, like adults, young people are more likely to hear and personalize messages, and thus to change their attitudes and behaviors, if they believe the messenger is similar to them and faces the same concerns and pressures. Youth peer-led interventions have been shown to be effective in other behavioral interventions, such as sexual health and substance abuse prevention programs.⁸⁻¹⁰ Peers also influence important weight-related behaviors in adolescents including participation in sports and other exercise, screen time, and fast food and sugar-sweetened beverage consumption.¹¹⁻¹⁴ However, no studies have explored the use of youth peer leaders to deliver programs for diabetes prevention.

To the authors' knowledge, the *Practical Model* is the only theoretical model published to date that focuses

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specifically on diabetes prevention in ethnic minority youth.¹⁵ This model draws from several theoretical frameworks for behavior change, and empirical evidence from youth behavioral weight-loss interventions supports this model.¹⁵ To translate the model successfully into an effective youth diabetes prevention program requires formative research to understand health and disease beliefs, current practices, sources of support, social norms, and perceived barriers to healthy lifestyles in specific target populations. Thus, the authors conducted focus groups with minority adolescents at risk for developing diabetes to explore their perceptions of disease risk, barriers and facilitators to adopting lifestyle changes, and ideas for program design (including identification of desired program leaders, preferred format for program delivery, and issues to be addressed in the program). This report presents the major themes from these focus groups framed in the context of the *Practical Model*. An expansion of the model is then presented with a description of how the expanded model may help identify and organize components of a youth diabetes prevention program for diverse communities.

METHODS

Participants/Recruitment

The study was conducted in East Harlem, a predominantly low-income, non-white neighborhood in New York City. Program directors at 4 community-based after-school programs provided basic information about the study and identified interested adolescents, and eligibility was then assessed (aged 14–18 years, no personal history of diabetes, positive family history of diabetes in a parent or grandparent, residence in East Harlem, and no current pregnancy). Eligibility criteria were chosen to select adolescents at high risk for developing diabetes. Participants were recruited as per an Icahn School of Medicine at Mount Sinai Institutional Review Board–approved protocol including caregiver consent and participant assent. The researchers recruited 21 teens and held 4 focus groups at the collaborating community sites, with each group including a mix of

younger and older, male and female, and black and Latino adolescents, representing the diversity of East Harlem. Ongoing data analysis indicated that theoretical saturation was achieved after completing 4 focus groups, so no further groups were conducted.

Data Collection

The research team began by informally interviewing 10 adult community leaders who work with youth to identify topics for exploration in the focus groups, including the feasibility of employing the peer model for adolescents, perceptions of diabetes risk, identification of community assets that could be incorporated, and the appropriate context for the intervention. By using this feedback, literature review, and consultation with national experts in youth behavior change, and guided by the *Practical Model*, a draft moderator's guide was developed. The researchers pilot-tested questions with 5 adolescent volunteers from the collaborating community sites, assessing for understanding by having them rephrase the questions in their own words, and then made minor modifications to finalize the guide. The moderators used a semistructured format with open-ended questions initially, followed by probes. Each group was 60–90 minutes long and moderated by 2 trained staff, audio-taped and transcribed verbatim.

Data Analysis

Two coders (JC and NV) developed a list of inductive and deductive codes using *Grounded Theory*¹⁶ and open coding techniques. Preliminary codes were refined through consensus until coders agreed on specified definitions for each code. Final codes were applied to all 4 focus groups, with an interrater reliability of 92%. Codes, quotations, and field notes were used to identify 4 dominant themes based on comments made by multiple participants within and across focus groups.

RESULTS

Twenty-one adolescents (8 boys and 13 girls, aged 14–18 years; 60%

Hispanic and 40% African American) participated in 4 focus groups with 3–8 adolescents/group. One group was composed of 3 boys; the remaining groups were of mixed gender.

Themes centered on understanding diabetes and its impact, typical lifestyle behaviors, motivations for diet choices and physical activity, and social influences on lifestyle.

Theme 1: Adolescents Have a Limited Understanding of Diabetes But Do Recognize Some of Its Consequences

Participants demonstrated limited knowledge of the definition, causes, prevention, treatment, and complications of diabetes. Most did not understand the difference between type 1 and type 2 diabetes and were only aware that diabetes has something to do with how much sugar is in the body. Although they recognized the importance of preventing diabetes, ideas about how to prevent it were limited to vague dietary actions (*I watch what I eat*), with no mention of weight loss or increasing physical activity as ways to prevent or control diabetes.

Participants characterized consequences of diabetes primarily as tasks that negatively affect lifestyle rather than as physical illness or disability. In fact, activities many adults would equate with self-management (checking sugars, taking medications, and seeing doctors) were labeled by the adolescents as burdensome consequences of the disease. One girl stated,

Like, if you eat a lot you'll get scared ... because you're going to have diabetes. That's a responsibility, 'cause you have to take your blood pressure, your sugar, and everything. So, personally, I wouldn't want to go through that. That's just too much work.

In all 4 groups, adolescents identified dietary change as the most salient negative consequence of having diabetes. One adolescent said,

Like, my friend, before she got diabetes they told her that she was on the verge of getting it and she still went out and started eating McDonald's, getting chocolate 24/7. And

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