

**PuBH206: Health Behavior and Health Education  
George Washington University**

**Health Education Intervention for Latinas with  
Gestational Diabetes and Their Families in Langley  
Park, Prince George's County, Maryland**

---

Jackie Donaldson  
Candidate, Master of Applied Anthropology  
University of Maryland, College Park

# **PuBH206**

## **Health Education Intervention for Latinas with Gestational Diabetes and Their Families in Langley Park, Prince George’s County, Maryland**

### **Table of Contents**

<b>I. Introduction .....</b>	<b>1</b>
<b>II. Literature Review .....</b>	<b>3</b>
<b>A. Health Beliefs and Behaviors .....</b>	<b>3</b>
<b>B. Range of Interventions.....</b>	<b>3</b>
<b>III. Intervention .....</b>	<b>7</b>
<b>A. Community at Risk .....</b>	<b>7</b>
<b>B. Community-Based Participatory Research .....</b>	<b>8</b>
<b>C. Assessment.....</b>	<b>9</b>
<b>D. Development .....</b>	<b>11</b>
<b>E. Implementation.....</b>	<b>11</b>
<b>F. Monitoring .....</b>	<b>15</b>
<b>G. Evaluation .....</b>	<b>16</b>
<b>VI. References .....</b>	<b>19</b>

## I. Introduction

The Center for Disease Control and Prevention estimates that 20.8 million Americans—7 percent of the U.S. population—have diabetes, up from 18.2 million in 2003. Nearly a third of these Americans are undiagnosed. Findings from the latest report show that nearly ten percent of Mexican Americans aged 20 and older have diabetes. Mexican-Americans and Puerto Ricans, the largest Latino groups in the U.S., are nearly twice as likely to have diabetes than white Americans.<sup>1</sup>

In 2001, diabetes was listed as the fifth leading cause of death among the U.S. Latino population.<sup>2</sup> Within this population, diabetes is more prevalent in women than it is in men. Latinas with diabetes are nearly eight times more likely to develop peripheral vascular disease than non-diabetic women, and nearly four times more likely to be diagnosed with heart disease or a stroke.<sup>1</sup>

Diabetes, including Type 2 and Gestational Diabetes Mellitus (GDM), is more common in Latinas than in Whites<sup>1</sup>. Nationwide, GDM occurs in four to seven percent of all prenatal women, which accounts for approximately 135,000 to 200,000 diagnosed cases each year. The prevalence rate of Latinas with GDM averages at five percent.<sup>3-5</sup> However, in 2003, 12 percent of Latinas living in Washington, DC were diagnosed with GDM.<sup>6</sup> Research does not indicate why the rate of GDM in Washington, DC is more than twice as high as the nationwide rate for Latinas, although studies show that Type 2 diabetes is associated with low socioeconomic status, obesity, inactivity, and stress.<sup>7,8</sup>

Gestational diabetics are at risk for strokes and heart attacks, and their fetuses and newborns are at risk for developing life threatening heart defects, fetal growth problems, spina bifida, premature birth, low birth weight, respiratory distress syndrome, among other serious health issues.<sup>4,9</sup> In addition, research shows that 50 to 70 percent of Latinas with GDM may develop Type 2 diabetes within five to ten years after giving birth.<sup>4,10,11</sup>

Children exposed to GDM are twice as likely to develop impaired glucose tolerance, or prediabetes, and Type 2 diabetes, than children not exposed to GDM.<sup>12-14</sup>

Risk factors for GDM, like Type 2 diabetes, include obesity, high carbohydrate intake, high blood pressure, high cholesterol levels, lack of physical activity, and family history of diabetes.<sup>15</sup> Also, women at risk for GDM may have given birth to at least one baby weighing nine pounds or more. Research shows that GDM and Type 2 diabetes may be prevented through regular exercise, maintaining a healthy weight, reducing carbohydrate intake, and monitoring blood sugar levels.<sup>16</sup>

## II. Literature Review

### A. Health Beliefs and Behaviors

With the exception of two studies,<sup>17, 18</sup> public health experts have conducted much research on the explanatory models that Mexican and Mexican Americans use,<sup>8, 19-25</sup> which may or may not be used to describe the health beliefs of the Latinas from diverse cultures in Central and South America who make up the majority of community members in Langley Park, as described in Section III below.

Several factors play a role in Latinas' health beliefs and behaviors, including personal, family, and community beliefs. Mexican and Mexican-American women perceive that heredity, diet, exercise, and strong emotions [*susto*, (scare or fright) and *coraje*, (anger or rage)] play a role in diabetes.<sup>8, 17, 20, 23, 26, 27</sup> One study found that Latinas mentioned specific dietary practices, such as “frequent intake of sweet foods and drinks and fats” as integral part to their culture.<sup>28</sup>

Attitudes about physical activity and its relationship to health and disease may influence Latinas participation in physical activity.<sup>29</sup> One study found that some Latinas do not believe a relationship exists between physical activity and the risk of diabetes as the researchers determined that Latinas believe dietary factors to be the primary cause. Other studies show that Latinas believe inactivity as part of their culture that increases diabetes risk.<sup>8, 17, 20, 23, 26-29</sup>

### B. Range of Interventions

Active participation by community members, including patients, in planning, designing, implementing, and evaluating a culturally-relevant intervention to build awareness about preventing GDM and Type 2 diabetes is

integral to its success.<sup>30</sup>

## **Community Level**

To provide a successful outreach program, community health clinic staff, including medical directors, physicians and mid-level providers, need to work with community leaders and members, including patients, to recommend culturally-based diet and lifestyle changes.<sup>21</sup>

In addition to community members collaborating together, the physical locale of the community is integral to a successful intervention. Community safety helps make regular physical activity possible. Latinas, in discussing aspects of the community that would help motivate them to increase their physical activity levels, described neighborhoods where women felt free to walk, even at night, and where there were places for children to play. Community center-based group activities also provide help motivate intervention participants and provide social support for physical activity while addressing safety and other environmental concerns.<sup>28</sup>

## **Family Level**

Research shows that successful interventions for Latina/os provide diabetes education to the entire family and address prevention and treatment.<sup>31</sup> One study focusing on Puerto Rican and Mexican immigrants in the U.S. and Mexicans and Guatemalans in their own countries shows that family support serves as a key variable in assuring compliance with dietary and other aspects of diabetes management.<sup>18, 32</sup>

By targeting the family social behaviors to change health behaviors, a successful intervention's objectives include improving nutrient intake, activity levels, and diabetes management or prevention for all family members.<sup>31</sup> Mexicans in Guadalajara with HbA1c level between four and seven percent are reported to have more likely to have family support than Mexicans with HbA1c levels above seven percent.<sup>20</sup>

Implemented along the U.S.-Mexican border in southern Arizona, *La Diabetes y La Unión Familiar* intervention focused on enhancing family member' social support of diabetic patients and increasing the range of primary prevention behaviors associated with diabetes in family members of patients with diabetes. Using local lay health outreach workers, or *promotoras*, *La Diabetes y La Unión Familiar* program reached 72 patients and 177 family members, including children and grandchildren. Based on approaches described in Social Cognitive Theory, the intervention included teaching team building and communication skills to build and reinforce family communication and collective esteem and efficacy.<sup>31</sup>

### **Individual Level**

Latinas' beliefs about physical activity and diabetes risk factors are an aspect of health belief and behavior that needs addresses in order to develop and implement a successful diabetes education intervention. Engaging Latinas who are at risk of developing or have GDM in a discussion of how their health beliefs and behaviors related to diabetes help develop realistic and appropriate strategies for improving pregnant and postpartum Latinas' health. Discussions may include their perceptions of diabetes risk and impact; their nutrition and physical activity-related beliefs, attitudes, and practices; and factors influencing their nutritional meal intake and participation in physical activity during and after pregnancy.<sup>28</sup>

Conducted Guadalajara, Mexico, one study found that diabetics with HbA1c level between four and seven percent continue to eat traditional food, such as corn tortillas, but have modified their behavior to eat these traditional foods in lesser quantities. Instead of eating three meals daily, they eat two meals a day and snack on fruits, they drink low-calorie beverages like unsweetened tea and coffee, and they have eliminated food prepared with a high degree of saturated fats. In addition, they have integrated exercise into their lives.<sup>20</sup>

Studies have provided several recommendations from Latinas in developing a diabetes health education program. These Latinas have recommended that an intervention address barriers such as communication

---

(increasing English literacy), transportation (learning how to drive), nutrition (learning how to select and prepare healthy meals), and exercising safely (dance lessons for pre-natal women) would provide opportunities for women to expand their social networks.<sup>28, 32</sup>

In an intervention targeted at low literacy level Latino immigrants, researchers and participants developed soap operas, or *telenovelas*, to convey key diabetes-related messages. In addition, the participants helped create posters depicting graphic symbols of food color-coded by category based on traffic lights. Foods shown in the red category were high calorie, laden with carbohydrates and saturated fats.<sup>16</sup>

### III. Intervention

#### *A. Community at Risk*

This intervention specifically addresses the community of Langley Park. A community that is officially located in Prince George's County but straddles the Montgomery County border, Langley Park is a culturally diverse area, the majority of Latino residents having immigrated from El Salvador, Mexico, Guatemala, Peru, and Bolivia.<sup>33</sup>

Of the nearly 320,000 (5.7 percent) of documented Latinos who live in Maryland as of 2005, nearly 100,000 (10.7 percent) documented Latinos live in Prince George's County<sup>34</sup> and approximately 126,000 documented Latinos live in Montgomery County (13.6 percent)<sup>35</sup>, comprising over 24 percent of the Latinos living in Maryland. Several community health clinics service Langley Park community members, including the Spanish Catholic Center and the Pregnancy Aid Center. Providers at the Spanish Catholic Center currently see 300 patients who are diabetic,<sup>36</sup> while the Pregnancy Aid Center has over 100 gestational diabetic patients.<sup>37</sup>

### *B. Community-Based Participatory Research*

As the intervention benefits not only the gestational diabetics and their families in Langley Park community, this intervention must be community-based in all aspects. In developing the diabetes education intervention, Chrisman's Community Partnership Research Approach<sup>38</sup> will be a helpful framework. This approach describes a five-step process that is constantly negotiated and cycles through a health, stakeholder, and resources assessment; a joint effort involving the community planning and prioritizing the intervention; implementing the intervention using community experts; ensuring sustainability through community experts and outreach for new participants; and evaluating and providing feedback to the community through developing an understandable analysis and integrating the evaluation with the assessment data.

Throughout the course of the intervention, many people will be needed to fulfill important roles so that strategies can be implemented. In order to maintain the community-based participatory research approach, each project team member will reside or have constant interactions within the Langley Park community. (If willing team members are not found within the Langley Park community, an effort will be made to find the most qualified and credible personnel.)

In the best situation, community members will be trained in some of the areas discussed below and will want to contribute to the program. Recruiting people within the CHCs is important because these people have established credibility among their patients and community members.

For the assessment, monitoring and evaluation phases of the intervention, a team of five ethnographers will be needed to assess the community. This team will be qualified anthropologists or applied anthropology graduate students from neighboring University of Maryland, College Park. This team will assess the resources and assets of the Langley Park community, while working with the CHCs. The team will study the physical environment

so that they can create the strategies that are most applicable to the environment. They will also survey the attitudes and behaviors of community members. The ethnography team will conduct the monitoring of the program throughout its duration and will conduct the post-intervention assessment. This team will conduct ethnographic research using participant observation, interviews, focus groups, and surveys. The team will be adept in qualitative and quantitative research methods.

For the first phase of the intervention, the campaign on health awareness, the focus will be on a health education and behavior team. A health educator and health communications expert, possibly from the Prince George's County Department of Health or the University of Maryland, College Park, will be two integral team members and will collaborate to create the campaign and health information tactics. This expert will need the help of health education workers, or *promotoras*, who are bilingual in Spanish and English. These team members, as part of the Health Action Team, would give ideas and help develop creative strategies used in the campaign. Additionally, the communications expert would need the scientific expertise of a nutritionist and physiologist.

Before the implementation of the dietary and exercise interventions, health care practitioners will be needed at the health kickoff event. CHC staff, including physicians, mid-level providers, diabetes coordinators, medical assistants, and phlebotomists, would be the ideal professionals to perform health examinations.

### *C. Assessment*

Using the PRECEDE/PROCEED model, assessing the needs and resources of the community is a vital first step. Although a month-long assessment would be preferred, considering the timelines most funders expect, a rapid needs assessment could happen within two weeks. The investigating team will evaluate the physical environment in Langley Park for features that could prove to be assets or barriers in working with the community health clinics to implement a successful intervention to reduce gestational diabetes and its attendant

health risks. It is important to understand the context in which dietary and exercise programs will be launched. The type and number of supermarkets and *mercados*, the availability of quality produce, the distance involved, the pricing of healthy items, the type and number of restaurants all can have an impact on food shopping and dietary habits.<sup>39</sup> In addition, exercise can be affected by safety issues.<sup>28</sup> Therefore, the investigative team will explore whether the community has parks with adequate lighting, sidewalks in good condition, and exercise facilities such as gyms or YMCA/YWCAs.

### **Working with the Community Health Clinics in Langley Park**

Identifying and recruiting community health clinics (CHC) is one of the most important steps needed to prepare for a successful intervention. In order to assess which CHCs would be most accepting and prepared for an intervention program of this nature, the investigative team ethnographers will conduct one-on-one interviews with CHC directors to gain knowledge in three areas. First, a general assessment of the directors' own knowledge, attitudes, and behaviors regarding the leading health indicators and complications of gestational diabetes will be carried out. Second, information on the frequency with which CHC providers, including physicians, mid-level providers, diabetes program coordinators and *promotoras* (if any), discuss diabetes health issues with patients. Third, the team will conduct an assessment of the CHCs' organizational readiness to implement the intervention.

Once the team has developed a working relationship with CHC directors, it is critical to evaluate the elements of the proposed interventions with CHC medical staff and patients and assess the study population's health beliefs and behaviors. Kleinman's framework, an approach that has proved successful in previous research<sup>8</sup> and comprises an explanatory model that recommends eliciting a patient's views about their illness, cause, and treatment so that to health care practitioners treat patients effectively within the patient's own cultural sphere,<sup>40</sup>

will be incorporated into the focus group and interview discussions. Focus groups with CHC staff and Latina patients with GDM will be used to test the appropriateness and appeal of specific features of the health awareness segment, the dietary intervention segment, and the exercise intervention segment.

#### *D. Development*

Based on the assessments conducted, the health action team would collaborate on designing nutrition and physical education modules. Instruction materials and programs from the National Diabetes Education Program's *Prevenamos la diabetes tipo 2: Paso a Paso*<sup>41</sup> or *Si Tiene Diabetes, Cuide Su Corazón*<sup>42</sup> may be modified and used. The health action team would review the instructional materials and translate the curriculum. The health educator and communications expert would set up a day-long training session with the *promotoras* to introduce the overall flow and format of the curriculum and provide instruction in the final educational materials. The *promotoras* would gain familiarity and comfort with the curriculum during the training through role playing, practicing delivery, and having their colleagues critique their delivery.

#### *E. Implementation*

##### **Phase I: Communicating the health awareness campaign and recruiting participants**

**Communication.** Although a small percentage of the Latina population in Langley Park is illiterate, especially within the recently immigrated,<sup>36, 37</sup> targeting the Latina population that reads Spanish will help build awareness of the intervention's diabetes health awareness campaign. Collaborating with a health communications expert, CHC directors, and grocery store managers, announcements, flyers, and other graphically enticing educational material in Spanish and English would be posted in the CHC waiting and exam rooms, articles in newsletters, bulletin boards in supermarkets and *mercados* to communicate the diabetes health awareness campaign over the period of the intervention.

In order not to inundate CHC patients and Langley Park community members with too much information at one time, we propose using the “Drip, Drip, Drip” communications theory<sup>43</sup> by which the team would disseminate one piece of educational material weekly. This way, the information and exposure would incrementally build awareness among the patients and Langley Park community.

**Recruitment.** In order to recruit participants among Latinas with GDM and their families, when the patient comes in for a prenatal exam or is diagnosed with prediabetes or gestational diabetes, the healthcare provider introduces the diabetes education program. The *promotoras* would then contact the patients who express interest in the program and discuss the program’s length and activities. Recruitment would also occur during the next phase.

### **Phase II: Community health fair, *feria de la salud***

Working with the CHC directors and community sponsors, the project team will host a health fair, *feria de la salud*, at the Langley Park Community Center to kick off the next intervention phases and build awareness among community members and family members of gestational diabetics.

At this one-day event, CHC health professionals will provide free health screenings of blood sugar level, blood pressure, body mass index, and the project team will obtain their personal and family medical histories, including diabetes, known heart disease, smoking, etc.. A licensed phlebotomist will be present to draw blood so the attendees can have their HbA1c level checked. The laboratory will test the blood and send results to the attendee with a recommendation, if the HbA1c level is above seven percent, that the attendee sees a CHC provider for a follow up.

In an effort to gain more sponsors and provide education to the diabetic community, a glucometer company may

---

be on hand to display its glucometers and provide demonstrations on how to use glucometers to monitor their blood sugar levels.

In an effort to increase attendance, expensive door prizes such as flat screen TVs, mp3 players and DVD players, would be raffled. Also, free giveaways like glucometers and healthy, low-fat, low sugar snacks would be provided throughout the fair.

If the resources are available, local community markets or Maryland farmers would provide fresh fruits and vegetables. Popular Latino foods would be prepared with low fat, low sugar ingredients and made available for free tastings. The health fair would also offer fun fitness activities for the whole family including Latin dance competitions. This would also be an excellent opportunity for local dance groups and musicians to showcase their Latin American dance and music skills to build up anticipation for the Phase IV exercise intervention.

In addition, this would be an excellent opportunity for organizations that provide driver's education and English as a second language classes to exhibit their programs, as Latinas have addressed these as barriers to living healthily.<sup>28</sup>

### **Phase III: Nutrition Component**

After one month of the diabetes awareness campaign, the health action team would begin a nutrition intervention. Based on approaches described in Social Cognitive Theory, the intervention includes teaching team building and communication skills to build and reinforce family communication and collective esteem and efficacy.<sup>31</sup> With health educators or *promotoras* and a certified nutritionist, the team will host two-hour nutrition workshops for gestational diabetic patients and their families on three consecutive Saturday mornings or afternoons at the Langley Park Community Center. To avoid potential barriers with childcare, all children, including infants, are welcome to attend. Childcare for young children would be provided at the community

center.

The nutrition classes would address overeating, long-term consequences of a poor diet, menu selection, and food shopping. These classes would show the participants and their families how to reduce carbohydrate intake and monitor their blood sugar levels.

In addition to watching nutrition videos and *telenovelas* depicting key diabetes-related messages, playing educational games, and discussing how to lower carbohydrate intake, balance meals, and maintain portion control, the participants will bring in their own and/or their family's favorite recipe for the nutritionist to work with them in creating a low fat version. Provided the community center has a kitchen, the participants will spend at least one class creating tasty low fat dishes. The participants will have the chance to sample different and new foods, share ways to make healthy food choices, and learn how to modify their meals.

At the last day of the nutrition workshop, the health action team will host a graduation ceremony. A potluck comprised of the best tasting low fat food the participants have learned to make themselves, the participants will have the chance to share their low-fat food with their family members. Each participant will receive a copy of handout materials, recipes, and photographs from the workshops, as well as a graduation certificate.

#### **Phase IV: Exercise Component**

After the completion of first nutrition workshop, the health action team would commence a three-week exercise intervention with the help of Latin dance and aerobics instructors. The health action team would start a walking club for members who would like to increase their activity levels. The health action team would provide free pedometers to those members who attend the first meeting and instruct the participants on how to use them. The objective will be to raise awareness that daily activity may not provide much cardiovascular benefit. The pedometers would show the participants just how many steps each takes per day with the goal of increasing

activity to a healthy and active 6,000 to 10,000 steps per day.

If started in the summer months, the walking club could gather weekday evenings to walk together around a local school track. The initial assessment of community resources would provide other suggestions for walking together in groups, such as local parks, as discussed above.

The dance and aerobics instructors would provide classes for the pre- and post- natal Latinas and their children. Classes would incorporate Latin American dance movement, such as salsa, meringue, and lambada and use methods from popular programs created by Latinas such as *SALSArobics*, *Latin American Workout*, and *Fiesta Latina*.<sup>44-47</sup> Using popular Latin music, these low impact cardio workouts provide an unlimited range of tempos and techniques build self confidence and allow the participant to express herself sensually and creatively.

The classes would be held three times a week in a large room at the Langley Park Community Center, with the objective of participants attending at least six times in the three-month period. The classes would be at convenient times, such as weekday evenings or weekend afternoons. Like the nutrition component, all family members, including children, are invited to attend, and the health action team would organize childcare if needed.

### *F. Monitoring*

Monitoring, or continuous evaluation, is essential in order to determine which aspects of the community-based diabetes intervention are proving to be successful and should be continued, and which aspects are failures and should be discontinued or reformed.

Participant observation involves an ethnographer or health educator gaining an intimate familiarity with the

group of participants and their behavior through intensive involvement with the group in their natural environment. This research method will be used throughout the nutrition component. This may involve participating in the healthy eating classes as students themselves, actually bringing their favorite low-fat dish to the *Feria de la salud*, the graduation ceremony, taste-testing contests, and more. Participant observation will also be used throughout the exercise portion. The ethnographer may join the 10,000-Steps Club, walking groups, Afrobics, dance classes, etc. Throughout the ethnographer's involvement, they will record their detailed observations and try to draw conclusions based on them.

The project team will distribute questionnaires before and after the nutrition and exercise phases to assess and evaluate the participants' knowledge, beliefs, and behaviors. Informal interviews may be conducted with fellow participants to learn about the participants' opinions of the programs, their progress (or lack of), attendance rates, etc. These informal interviews may be conducted before the classes begin and after they have been completed. In addition, the project team will conduct focus groups after the first three months of both the dietary and exercise interventions.

### *G. Evaluation*

Because our plan is to focus on health risks, this program will use a combination of risk factors that are commonly used to evaluate diabetes risk. Although glycemic levels, weight and BMI alone would be easier to measure, those numbers do not tell the whole story. Researchers have found that body image among Latinas is not perceived to be problematic until a Latina is already overweight by Western standards, so achieving normal weight as medically defined may become a daunting task.<sup>48</sup> Adding to the intense focus on weight alone which has become part of our society may prove counter-productive. A more global approach in using glycemic levels and BMI, along with cholesterol levels, blood pressure readings, and age, sex, and history of known diabetes, to arrive at a more accurate and nuanced picture of diabetes risk level. Using validated risk calculators such as the

Diabetes Risk Calculator<sup>49</sup> and Framingham Risk Calculator will prove helpful.<sup>50</sup> These are clear indicators of the impact of this intervention that can be compared across studies.

Many interventional studies fail to include follow-up data. No intervention of this nature can truly be judged successful unless positive results can be sustained for at least six months, preferably one year. By evaluating immediately post-intervention, again at the six months post-intervention and one year post-intervention, as well as following up every two years until ten years with the Latinas and their children will further the research efforts to craft community-based programs.

## IV. References

1. Office of Minority Health. Health Status of Hispanic/Latina Women.  
<http://www.omhrc.gov/templates/content.aspx?ID=3722>. Accessed April 7, 2007.
2. Anderson RN, Smith BL. Deaths: Leading Causes for 2001. *National Vital Statistics Reports*. 2002;52(9).
3. American Diabetes Association. Gestational Diabetes. <http://www.diabetes.org/gestational-diabetes.jsp>. Accessed April 7, 2007.
4. Umar KB. *Diabetes During Pregnancy: Women of Color at Increased Risk*. Bethesda, MD: Office of Minority Health, U.S. Department of Health and Human Services; 2002.
5. Fassett E. *Type 2 Diabetes Risk After Gestational Diabetes*. Bethesda, MD: U.S. Department of Health and Human Services' National Diabetes Education Program; 2006.
6. McClure H, Jerger K. *The State of Latinos in the District of Columbia: Trends, Consequences and Recommendations*. Washington, DC: Council of Latino Agencies; 2005.
7. Reichenbach L, Maish AMY. Larger Than Life: Bodily and Social Transitions within Type 2 Diabetes. *Ethnographic Praxis in Industry Conference Proceedings*. 2006(1):4-18.
8. Schoenberg NE, Drew EM, Stoller EP, Kart CS. Situating Stress: Lessons from Lay Discourses on Diabetes. *Medical Anthropology Quarterly*. 2005;19(2):171-193.
9. Kieffer EC, Tabaei BP, Carman WJ, Nolan GH, Guzman JR, Herman, WH. The Influence of Maternal Weight and Glucose Tolerance on Infant Birthweight in Latino Mother-Infant Pairs. *American Journal of Public Health*. 2006;96(12):2201-2208.
10. Kjos SL, Peters RK. Predicting Future Diabetes in Latino Women with Gestational Diabetes: Utility of early postpartum glucose tolerance testing. *Diabetes*. 1995;44(5):586-591.
11. Tucker ME. Prescribe Diet, Exercise after Gestational Diabetes: Many will develop Type 2 diabetes. *OB/GYN News*; 2003.

12. Kim C, Newton KM, Knopp RH. Gestational Diabetes and the Incidence of Type 2 Diabetes: A systematic review. *Diabetes Care*. 2002;25(10):1862-1868.
13. Carr DB, Utzschneider KM, Hull RL, et al. Gestational Diabetes Mellitus Increases the Risk of Cardiovascular Disease in Women With a Family History of Type 2 Diabetes. *Diabetes Care*. 2006;29(9):2078-2083.
14. Goran MI, Bergman RN, Avila Q, et al. Impaired Glucose Tolerance and Reduced  $\beta$ -Cell Function in Overweight Latino Children with a Positive Family History for Type 2 Diabetes. *The Journal of Clinical Endocrinology & Metabolism*. 2004;89(1):207-212.
15. Gallivan J, Kelly J. *Diabetes Prevention Program Fact Sheet*. 2004.
16. Rosal MC, Olendzki B, Reed GW, Gumieniak O, Scavron J, Ockene I. Diabetes Self-Management Among Low-Income Spanish-Speaking Patients: A Pilot Study. *Annals of Behavioral Medicine*. 2005;29(3):225-235.
17. Arcury TA, Skelly AH, Gesler WM, Dougherty MC. Diabetes Meanings Among Those Without Diabetes: Explanatory models of immigrant Latinos in rural North Carolina. *Social Science & Medicine*. 2004;59(11):2183-2193.
18. Weller SC, Baer RD, Pachter LM, et al. Latino Beliefs about Diabetes. *Diabetes Care*. 1999;22(5):722-728.
19. Brown SA, Hanis CL. Culturally Competent Diabetes Education for Mexican Americans: The Starr County Study. *The Diabetes Educator*. 1999;25(2):226-236.
20. de Alba Garcia JG, Rocha ALS, Lopez I, Baer RD, Dressler W, Weller SC. "Diabetes is my companion": Lifestyle and self-management among good and poor control Mexican diabetic patients. *Social Science & Medicine*. 2007;In Press, Corrected Proof.
21. Valenzuela GA, Mata JE, Mata AS, et al. Knowledge and Beliefs Regarding Type 2 Diabetes Mellitus in Rural Mexico. *Ethnicity & Health*. 2003;8(4):353-360.

22. Brown SA, Becker HA, Garcia AA, Barton SA, Hanis CL. Measuring Health Beliefs in Spanish-speaking Mexican Americans with Type 2 Diabetes: Adapting an existing instrument. *Research in Nursing & Health*. 2002;25(2):145-158.
23. Hunt LM, Valenzuela MA, Pugh JA. Porque me tocó a mi? Mexican American diabetes patients' causal stories and their relationship to treatment behaviors. *Social Science & Medicine*. 1998;46(8):959-969.
24. Poss J, Jezewski MA. The Role and Meaning of Susto in Mexican Americans' Explanatory Model of Type 2 Diabetes. *Medical Anthropology Quarterly*. 2002;16(3):360-377.
25. Finch BK, Hummer RA, Kol B, Vega WA. The Role of Discrimination and Acculturative Stress in the Physical Health of Mexican-Origin Adults. *Hispanic Journal of Behavioral Sciences*. 2001;23(4):399-429.
26. Keiffer EC, Willis SK, Arellano N, Guzman JR. Perspectives of Pregnant and Postpartum Latino Women on Diabetes, Physical Activity, and Health. *Health Education and Behavior*. 2002;29(5).
27. Daniulaityte R. Making Sense of Diabetes: Cultural models, gender and individual adjustment to Type 2 diabetes in a Mexican community. *Social Science & Medicine*. 2004;59(9):1899-1912.
28. Kieffer EC, Willis SK, Arellano N, Guzman JR. Perspectives of Pregnant and Postpartum Latino Women on Diabetes, Physical Activity, and Health. *Health Education and Behavior*. 2002;29(5).
29. Janz NK, Champion VL, Strecher VJ. The Health Belief Model. In: Glanz K, Rimer BK, Lewis FM, eds. *Health Behavior and Health Education: Theory, research, and practice*. 3rd ed. San Francisco: Jossey-Bass; 2002.
30. Doyle E, Ward S. *The Process of Community Health Education and Promotion*. Long Grove, IL: Waveland Press; 2001.
31. Teufel-Shone NI, Drummond R, Rawiel U. Developing and Adapting a Family-based Diabetes Program at the U.S.-Mexico Border. *Preventing Chronic Disease*. 2005;2(1):A20.
32. Mauldon M, Melkus GDE, Cagganello M. Tomando Control: A Culturally Appropriate Diabetes

- Education Program for Spanish-Speaking Individuals With Type 2 Diabetes Mellitus--Evaluation of a Pilot Project. *The Diabetes Educator*. 2006 2006;32(5):751-760.
33. Schifferes S. Washington DC: A city of immigrants. *BBC News Online*; 2003.
  34. Census Bureau. MapStats: Prince George's County, Maryland.  
<http://www.fedstats.gov/qf/states/24/24033.html>. Accessed April 7, 2007.
  35. Census Bureau. MapStats: Montgomery County, Maryland.  
<http://www.fedstats.gov/qf/states/24/24031.html>. Accessed April 7, 2007.
  36. Izquierdo-Porreda AM, Renteria Weitzman R. Personal communication; 2007.
  37. Jelacic M. Personal communication; 2006.
  38. *Health, Culture, and Community*. [PowerPoint presentation]; 2005.
  39. Sloane DS, Nascimento LM, Flynn G. Assessing Resource Environments to Target Prevention Interventions in Community Chronic Disease Control  
*Journal of Health Care for the Poor and Underserved*. 2006;17.2 Supplement (2006):146-158.
  40. Kleinman A, Eisenberg L, Good B. Culture, Illness, and Care: Clinical Lessons From Anthropologic and Cross-Cultural Research. *Annals of Internal Medicine*. 1978;88(2):251-258.
  41. National Diabetes Education Program. Prevengamos la diabetes tipo 2: Paso a Paso.  
[http://ndep.nih.gov/campaigns/Tipo2/Tipo2\\_index.htm](http://ndep.nih.gov/campaigns/Tipo2/Tipo2_index.htm). Accessed April 10, 2007.
  42. National Diabetes Education Program. Si Tiene Diabetes, Cuide su Corazón (If You Have Diabetes, Take Care of Your Heart). [http://ndep.nih.gov/campaigns/CuideCorazon/Cuide\\_materials.htm](http://ndep.nih.gov/campaigns/CuideCorazon/Cuide_materials.htm). Accessed April 10, 2007.
  43. Bandura A. Social Cognitive Theory of Mass Communication. *Media Psychology*. 2001;3(3):265-299.
  44. SALSArObics. November 26, 2002; <http://www.salsarobics.com/>. Accessed April 10, 2007.
  45. Lee B. Christi Idavoy. *American Fitness*. 2006;24(6):68-68.
  46. Martinez JA. Twist and Shout. *American Fitness*. 1992;10(4):20.

47. Siegler B. Meet Luly. *American Fitness*. 2005;23(4):48-49.
48. Sánchez-Johnsen LAP, Fitzgibbon ML, Martinovich Z, Stolley MR, Dyer AR, Van Horn L. Ethnic Differences in Correlates of Obesity between Latin-American and Black Women. *Obesity Research* 2004;12:652-660.
49. Herman W, Smith PJ, Thompson, TJ, Engelgau,MM and Aubert, RE. A new and simple questionnaire to identify people at increased risk for undiagnosed diabetes, *Diabetes Care*.1995;18(3):382-387.
50. Wilson P, D'Agostino, RB, Levy, D, Belanger, AM, silbershatz, H, Kannel, WB Prediction of coronary heart disease using risk factor categories. *Circulation*. 1998;97:1837-1847.