

Group Prenatal Education for Combating Obesity and Gestational Diabetes In Hispanic Women

Maria Cruz, RN BSN

University of Utah, College of Nursing

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Executive Summary

With the prevalence of overweight and obesity continuing to grow in the United States, the condition has begun to reach epidemic proportions. The rise of overweight and obesity has brought with it several other weight related health conditions. These conditions include hypertension, diabetes, hyperlipidemia and coronary artery disease among others. These conditions often come with grave consequences to the patients, their families, healthcare providers, and to our healthcare system. One of the many burdens includes the cost involved to treat these conditions on a long-term basis. These health and financial burdens have led to a growing interest in treating not only the conditions related to overweight and obesity, but finding a way to treat the weight problem as well.

Weight related conditions affect everyone directly or indirectly. Hispanics are becoming overweight and obese at an alarming rate. They are losing the health benefits they may have immigrated to the U.S. with due to acculturation and what some theorists have called the Hispanic Health Paradox. There are a multitude of weight loss beliefs, diets, medications and ideas that claim to be the best way to lose weight. Many areas pertaining to weight loss have been addressed and incorporated into weight loss plans, however cultural diversity is not always taken into consideration when creating a weight loss plan.

The objectives of this project were met by creating an educational thread to incorporate into an already existing group prenatal care setting being implemented at Ellis Shipp Clinic. The educational component consists of 12 sessions beginning in the first trimester of prenatal care with a general DM2 screening and a screening for risk factors. It continues to follow the woman throughout her pregnancy, providing culturally sensitive content tailored specifically for the Latina woman during her entire pregnancy and through the postpartum period. The final two sessions involve 2 postpartum visits (at 2 weeks and 6 weeks) with the final one involving another screening for DM2. The sessions involve group education, advice, and group interaction with the participants, journaling, sharing of ideas and recipes, and moral support. The sessions are provided in English and in Spanish to facilitate interaction between the provider and the client.

Future recommendations for this project are for the educational sessions to be used for group prenatal settings throughout the valley and evaluate the effectiveness of the program and the satisfaction of the participants involved. Other future plans for this project include collaborating with other similar projects and possible incorporation into web based programs with similar goals.

Obesity and Gestational Diabetes

According to the Centers for Disease Control and Prevention (CDC), the prevalence of obesity in adults and children has increased in the United States in the last decades of the 20th century (National Center for Health Statistic, 2009-2010). The increase in the rate of obesity coupled with the subsequent increase in the risk of a many health conditions such as hypertension, hyperlipidemia, and diabetes mellitus have made finding a solution to the problem a more pressing issue.

There are many conditions in pregnancy that may be associated with obesity, and can be avoided by maintaining a healthy weight before and during pregnancy. These conditions associated with obesity encompass the period prior to becoming pregnant (preconception), the antepartum period, the intrapartum period, and the postpartum period (Nuthalapaty & Rouse, 2012).

Gestation diabetes has been progressively increasing in pregnancy. In fact, according to Chase-Taber et al., diabetes has reached epidemic proportions in the U.S. with rates consistently being higher in Hispanics when compared to non-Hispanic white women. Hispanic women have a two to four times higher risk of developing gestational diabetes than non-Hispanic white women. It has become apparent that more aggressive measures need to be taken to develop educational programs, resources, and support to assist these women in identifying and changing the modifiable risk factors that have been shown to increase their risk of obesity and the development of diabetes mellitus (Chasan-Taber et al., 2010).

The following will focus on gestation diabetes resulting from obesity in Hispanic women. It will propose an idea for a group educational program specifically for overweight and obese Hispanic women who are identified as high-moderate risk for gestational diabetes.

Problem Statement

Hispanic women in the United States have a higher prevalence of obesity than their non-Hispanic counterparts (National Center for Health Statistic, 2009-2010). This creates a healthcare disparity for Hispanic women throughout their reproductive years and beyond. Theorists have proposed what they call the Hispanic Health Paradox (Yeh, Viladrick, Brunning, & Rye, 2009). This paradox refers to a phenomenon that occurs when new Hispanics, that are generally healthier and have a lower rate of obesity than their non-Hispanic counterparts, begin to acculturate to the behaviors of women in the U.S. Not only do they lose the health benefits they arrived with, but generation after generation of Hispanic women end up having a higher rate of obesity and diabetes than non-Hispanic (white) women (Yen et al. 2009). This type of acculturation may be a contributing factor for many health problems for women throughout their pregnancies as well.

Overweight and obese women are at higher risk for developing gestational diabetes. This type of diabetes (occurring in pregnancy) has significant short term and long-term effects on the pregnant woman and the developing fetus. The problems don't just affect the mother and fetus during pregnancy, but also well into their future and throughout their lives (Nuthalapathy & Rouse, 2012).

Significance

Obesity Epidemic

The rate of overweight and obesity in the United States is continuing to grow. The rates differ according to race and ethnicity as well. Hispanic residents of the U.S. are currently at a rate of 69.1% overweight or obese, while whites are at 62.8% overweight or obese, according to The Henry Kaiser Family Foundation (statehealthfacts.org, 2010). Data from the 2007-2008

National Health and Nutrition Examination Survey (NHANES) showed that 34 percent of women of reproductive age (20-39 years old) were obese ($BMI \geq 30 \text{ kg/m}^2$) (Nuthalapaty & Rouse, 2012).

The incidence of obesity in pregnancy is associated with many different maternal and perinatal problems beginning with preconception and extending into the post partum period and beyond. Obesity is shown to have an impact on fertility and fertility treatments including invitro-fertilization (IVF). It has also shown to have a significant impact on the antepartum period, the intrapartum period, and the post partum period as well as an impact on the perinatal outcome (Nuthalapaty & Rouse, 2012). Additionally, women with gestational diabetes associated with obesity are at increased risk of developing type II diabetes mellitus in the future (Gabbe, Neibyl, & Simpson, 2007).

It is not clearly stated in the research whether obesity and diabetes are directly the causes for adverse outcomes in pregnancy, or if the factors associated with both conditions contribute to the adverse outcomes. Although according to Nuthalapaty & Rouse (2012) there is some evidence showing that glucose tolerant obese women are at greater risk of adverse outcomes in pregnancy. It is also stated that adverse outcomes are often attributed to obesity and diabetes. (Nuthalapaty & Rouse, 2012)

Preconception

According to Nuthalapaty & Rouse, 2012 some studies have shown that obesity has a significant effect on female fertility. There appears to be an association between subfertility and BMI and an increase in fertility when there is weight loss in an obese woman. It is also noted that obesity has a negative impact in IVF and infertility treatments.

Antepartum

Obesity has been associated to gestational diabetes (GDM). The incidence of GDM is increased above that of the general pregnant population (6-12 percent versus 2 to 4 percent) (Nuthalapaty & Rouse, 2012). This increases the risk of delivering a large for gestation age baby. Other antepartum risks include pregnancy associated hypertension and preeclampsia, preterm birth, post-term pregnancy, multi-fetal pregnancy, urinary tract infection, obstructive sleep apnea, and placental abnormalities (Nuthalapaty & Rouse, 2012).

Intrapartum: There appears to be an association with between obesity and longer labor. Obese women are shown to have longer first stage of labor than women of average age (Nuthalapaty & Rouse, 2012). Labor induction is more common in obese women as well. Other labor associated problems include a lower success rate of vaginal birth after cesarean delivery, an increased rate of cesarean delivery, a higher initial epidural failure rate, an increased risk of shoulder dystocia, macrosomia, malpresentation, hemorrhage and fourth degree lacerations with obesity (Nuthalapaty & Rouse, 2012).

Postpartum

Postpartum issues include spending more time in the hospital following delivery than their leaner counterparts, increased risk of infection, postpartum hemorrhage, difficulty initiating breastfeeding and decreased duration of lactation (Nuthalapaty & Rouse, 2012).

Perinatal outcomes

There appears to be a small association between the increase of congenital anomalies and maternal obesity. There also seems to be an increase in perinatal mortality, neonatal death due to complications and disorders leading to preterm birth, macrosomia and infant birth weight.

Additionally, infants that are large for gestational age and born to obese mothers are predisposed to obesity later in life (Nuthalapaty & Rouse, 2012).

Programs specifically tailored to incorporate Hispanic culture are necessary for success in the Latin community. A study by Agne et al. (2011) showed that participants expressed interest in weight loss but expressed a need for programs that incorporate culturally sensitive behaviors, traditional foods, and included family. Programs designed this way seemed to have a higher success rate of compliance (Agne, Daubert, Munoz, Scarinci, & Cherrington, 2011)

Clinical Implications

Group prenatal care is a method of providing prenatal care to a group of women that are of similar gestational age. The initial visit and intake is done in a private setting with the patient and the midwife. After the initial visit, the woman is invited to attend group prenatal classes with other women. The visits begin at approximately 12 to 16 weeks gestation and continue through the early postpartum period. Each session focuses on different common pregnancy issues such as common complaints, performing fetal kick counts, breastfeeding, and issues in labor (Reid, 2007). This method of prenatal care helps providers disseminate educational information in a more productive manner.

Although there is no significant benefit noted in the research that indicated that group meetings have more of an impact on the woman's ability to learn and apply the life modification when compared to individual therapy some studies show that group sessions are more cost effective and productive for the provider (Murphy, Guilar, & Donat, 2004). The current group prenatal care model (CenteringPregnancy®) has been well received in the clinics that have implemented the program. They show that women tend to be more interactive, and discussion is facilitated by each of the women. It is a way to get important prenatal information to a group of

women in a minimum amount of time without compromising the quality of care. Group meetings are also known to encourage socialization of the women in the group and allow the leader of the group or the provider to become part of the group to facilitate learning and participation of the women involved (Reid, 2007).

Purpose and Objectives

This project proposes that an educational component to group prenatal care (or an educational thread) be created to include modification of risk factors to decrease overweight/obesity thus decreasing the incidence of gestational diabetes mellitus in Latinas. This program would focus on diabetes education for women who are at risk for developing gestational diabetes. The program would be entitled Diabetes Understanding for Latinas with a Cultural Emphasis (D.U.L.C.E.) The educational thread would be added to an already existing group prenatal care program with the sole purpose of benefiting the previously mentioned ethnic group. The objectives for this project are as follows: The first objective is to create a nutritional education component for use throughout group prenatal care designed specifically for Latinas at risk for overweight, obesity and to help combat gestation diabetes. The second objective is to introduce the program to the staff of providers in a clinic that has a large Latina population (Ellis R. Shipp).

Literature Review

Obesity in General and Obesity in Latinas

The rate of overweight and obesity in the United States is continuing to increase. With the increased rate of obesity comes an increase in weight related diseases such as hypertension, type II diabetes, and hyperlipidemia. More than one-third of adults and almost 17% of youth were obese in 2009-2010 (National Center of Health Statistics, 2012). Hispanic women in the

United States have a higher prevalence of obesity than their non-Hispanic counterparts (National Center for Health Statistic, 2009-2010). This creates a healthcare disparity for Hispanic women throughout their reproductive years and beyond. Theorists have proposed what they call the Hispanic Health Paradox (Yen, Viladrick, Brunning, & Rye, 2009). This paradox refers to a phenomenon that occurs when new Hispanics, that are generally healthier and have a lower rate of obesity than their non-Hispanic counterparts, begin to acculturate to the behaviors of women in the U.S. Not only do they lose the health benefits they arrived with, but generation after generation of Hispanic women end up having a higher rate of obesity and diabetes than non-Hispanic (white) women (Yen et al. 2009). This type of acculturation may be a contributing factor for many health problems for women throughout their pregnancies as well.

Gestational Diabetes

Gestational diabetes mellitus affects 4-7% of pregnancies in the United States, and the incidence of the disease is progressively increasing. The condition has been shown to have significant impact on the morbidity of the infant and the mother. (Dempsey et al., 2004)

Some of the effects gestational diabetes has are as follows: Infants have a higher incidence of macrosomia, hypoglycemia, erythemia, hypocalcemia, jaundice, and birth trauma. It can also have effects on the baby later in life. Children born to mothers with gestational diabetes mellitus have an increased risk of obesity in their adolescent years. They also have a higher risk of abnormal glucose tolerance. Another problem children of mothers with gestational diabetes mellitus are faced with in their adolescent and early adult age is the increased risk of developing type 2 diabetes mellitus. Mothers diagnosed with gestational diabetes mellitus are also faced with the increased risk of developing other complications such as preeclampsia,

infection, post partum hemorrhage, and overt type 2 diabetes mellitus after pregnancy.

(Dempsey et al., 2004)

Risk Factors

Studies by Chasan-Taber et al. (2010) address modifiable risks factors for gestational diabetes mellitus in Hispanic women. These studies that have been done usually include white women, African-American women, and other. This could potentially be a problem when attempting to deal with the population that is most at risk. Hispanics will be the largest minority group in the U.S. by the year 2030 with the rate of increase in the population of Hispanics in the United States. There are also studies suggesting that if a Hispanic woman is diagnosed with gestational diabetes mellitus, she has a 17-63% increased risk of developing type 2 diabetes mellitus 5-16 years after giving birth. Therefore, this isn't just a problem that women are face with during pregnancy; it is a problem that can affect their future and the future of their offspring. Obesity leading to diabetes mellitus will continue to increase in numbers unless we can help change these women's behaviors, change their modifiable risk factors, and decrease their risk of developing the disease in pregnancy and in the future. (Chasan-Taber et al., 2010)

Xiang et al., 2010 listed a few other modifiable risk factors in an article. They listed weight gain, additional pregnancies, and progestin only contraception. They also stated that in Hispanic women "gestational diabetes mellitus represents detection of a chronic disease process characterized by a decrease in beta cell compensation for chronic insulin resistance" (Xiang, Kjos, Takayanagi, Trigo, & Buchanan, 2010)

Another study by Rosenberg et al. 2005, showed a significantly higher rate of obesity, gestational diabetes, pregnancy induced hypertension, preeclampsia and preterm birth in

Hispanic women when compared to non-Hispanic white women. The rate was more than double in some cases and almost double in other cases (Rosenberg et al., 2005).

Studies done with subjects that are predominantly non-Hispanic white women show that modifiable risk factors with the biggest impact in the development of gestational diabetes mellitus include physical activity, pre-pregnancy weight, and psychological stress. When these women participated in physical activity in the first 20 weeks of pregnancy, there was a 48% decrease in the risk of developing gestational diabetes mellitus than those who were sedentary. Throughout the pregnancy, moderate recreational activity resulted in a 37% risk reduction of developing GDM. Vigorous recreational activity resulted in a 66% risk reduction of developing GDM. (Dempsey et al., 2004)

Although Hispanic women report increased levels of depression, anxiety and perceived stress, and a decrease in socio-economic status, there was no significant difference noted in the effects of physical activity of more than 30 minutes/day on GDM when compared to non-Hispanic white women. (Chasan-Taber et al., 2008) Therefore, ACOG recommends 30 minutes of moderate physical activity in pregnant women without any pregnancy related contraindication. This amount of physical activity has shown to be the most effective for decreasing the risk of GDM. With greater time on physical activity than noted, the benefits seem to plateau. (Chasan-Taber et al., 2010)

Group Prenatal Care

A study by Murphy et al. (2004) showed that there is no significant benefit noted in the research that indicated that group meetings have more of an impact on the woman's ability to learn and apply the life modification when compared to individual therapy (Murphy, Guilar, & Donat, 2004). A study by Reid (2007) showed that group sessions are more cost effective and

productive for the providers. Providers use these group sessions as a way to get important information to a large group of women in a minimum amount of time. These studies also show that women tend to be more interactive, with the discussions in the group. The women tend to facilitate the discussions, sharing tips, ideas and stories. The group prenatal model that is currently in use in clinics throughout the country has been very well received. (Reid, 2007)

The Cultural Context of Obesity

A study by Agne et al. (2011), discussed the perception of overweight, obesity, and weight management in the Latina community. The study showed that perceptions regarding weight differed in the Latina community when compared to the Caucasian community. It also showed that the women are aware of the growing problem of obesity and some of the consequences of being obese. These women expressed an interest in weight management but expressed a need for programs that were tailored for Latina immigrants. They expressed a need for a program that was sensitive to their cultural beliefs, traditional foods and inclusion of family. The conclusion showed that a program tailored to Latina women would be better accepted by the community if they were able to address issues pertinent to the particular group of women including access to foods, physical activity, and high levels of isolation and depression due to their immigrant status in a new community (Agne et al. 2011).

The Hispanic Health Paradox

In a study by Yen, et al. (2009), it is noted that a phenomenon known as the Hispanic Health Paradox is noted in Hispanic women immigrating to the U.S. This paradox creates a notable disparity in their health after their acculturation to the American diet and way of life. This occurs because Hispanic women immigrating to the U.S. arrive with a better health status, lower rates of obesity and lower mortality rates than the general population. However, after a

period of several years, their health advantage disappears. Not only do Hispanic women catch up to their white counterparts in obesity and health problems, but they also surpass them. This puts them at an even greater disadvantage.

Due to this acculturation and subsequent health disadvantage, it is noted to be beneficial to these women to develop programs that preserve their healthy lifestyles and eating habits and include ways to maintain their traditional foods, needs for family involvement and language (Yen, et al., 2009). It is also necessary to improve access to healthy food, physical activity, and health education that is tailored to their needs.

Problem

As obesity, over-weight and gestational diabetes mellitus continues to become more prevalent in the United States, we are faced with needing to aggressively and actively find solutions for the problem. Although the focus of this project is on diabetes mellitus that affects a woman during pregnancy, it is important to note that this is not just a Hispanic woman's problem or a pregnant woman's problem. This is a national health issue that needs to be addressed. It is affecting the future of women and their babies. Studies have repeatedly shown that increasing physical activity is one of the most effective ways to reduce the risk of becoming obese or over weight and developing diabetes mellitus during pregnancy, as an adult, or even as an adolescent.

Another study by Crowther et al., 2005 stated that aggressive treatment of gestational diabetes mellitus may not only reduce serious prenatal morbidity, but it may also improve the health-related quality of the woman's life. It showed that reducing the risk factors and improving one's health would also lead to an improvement in the woman's mood, depression symptoms, and over all improved health status. (Crowther et al., 2005)

Theoretical Model

Orem's Theory of Self Care Deficit

The theoretical framework that will be used for selecting participants for the nutritional program is Orem's theory of self-care deficit. This theory is made up of three separate components: The theory of self-care, the theory of self-care deficit, and the theory of nursing systems. Self-care is defined as an activity a person does for the sake of maintaining their individual health. If there is an inadequacy of self-care, the patient is defined as having a self-care deficit. The participants are assessed to determine whether there is a deficit in self-care and what the cause of the deficit is. Once this information is obtained, the provider will select interventions to provide care for the participants (currentnursing.com, 2011).

Initially, the women will receive their first exam and intake in a private setting with the provider. They will then be invited to attend the group prenatal classes according to specific identifiers that put them at risk for being over-weight/obese, gestational diabetes, and subsequent medical problems resulting from their diagnosis. The educational thread to the group prenatal program will implement behavioral changes, provide support and incorporate traditional and culturally sensitive content according to the participants' needs. If the program is successful at Ellis R. Shipp clinic, the participants will be asked to evaluate the program and offer feedback from positive and negative aspects of the program and suggestions for change/improvement. The information obtained will assist in improving the program for future use.

| Nursing Process | Orem's Nursing Process |
|--|---|
| <ul style="list-style-type: none"> • Assessment | <ul style="list-style-type: none"> • Diagnosis and prescription; determine why nursing is needed, analyze and interpret-make judgment regarding care • Design of a nursing system and plan for delivery of care • Production and management of nursing systems. <p>Step1-Collect data in 6 areas</p> <ul style="list-style-type: none"> • The person's health status • The physician's perspective of the person's health status • The person's perspective of his or her health • The person's requirements for self-care |
| <ul style="list-style-type: none"> • Nursing diagnosis • Plans with scientific rationale | <p>Step 2</p> <ul style="list-style-type: none"> • Nurse designs a system that is wholly and partly compensatory or supportive-educative • The 2 actions are: • Bring out the good organization of the components of patients' therapeutic self care demands • Selections of combination of ways of helping that will be effective and efficient in compensating for/overcoming patient's self care deficits |
| <ul style="list-style-type: none"> • Implementation • Evaluation | <p>Step 3</p> <ul style="list-style-type: none"> • Nurse assists the patient or family in self care matters to achieve identified and described health and health related results, collecting evidence in evaluating results achieved against results specified in the nursing system design • Actions are directed by etiology component of nursing diagnosis • Evaluation |

Figure 1: Dorthea Orem's Self-Care Deficit Theory. adapted from currentnursing.com. 2012

Roy’s Adaptation Model

Roy’s adaptation model focuses on the idea that a system is a set of parts connected to function as a whole for some purpose and it does so by the interdependence of its parts (Tomey & Alligood, 1998). The participants are said to have a level of adaptation that is also always changing, problems with adaptation that arise due to need deficits, stimuli that are present in the situation and some that are unclear, and coping mechanisms. (Tomey & Alligood, 1998).

In using this model, the participant is looked at as a constantly changing individual that is affected by its environment. Some of the stimuli that will be taken into effect will be the group environment (in clinic), the home environment, the family unit, the culture, individual differences in perceptions, socio-economic status and previous health status (currentnursing.com 2011).

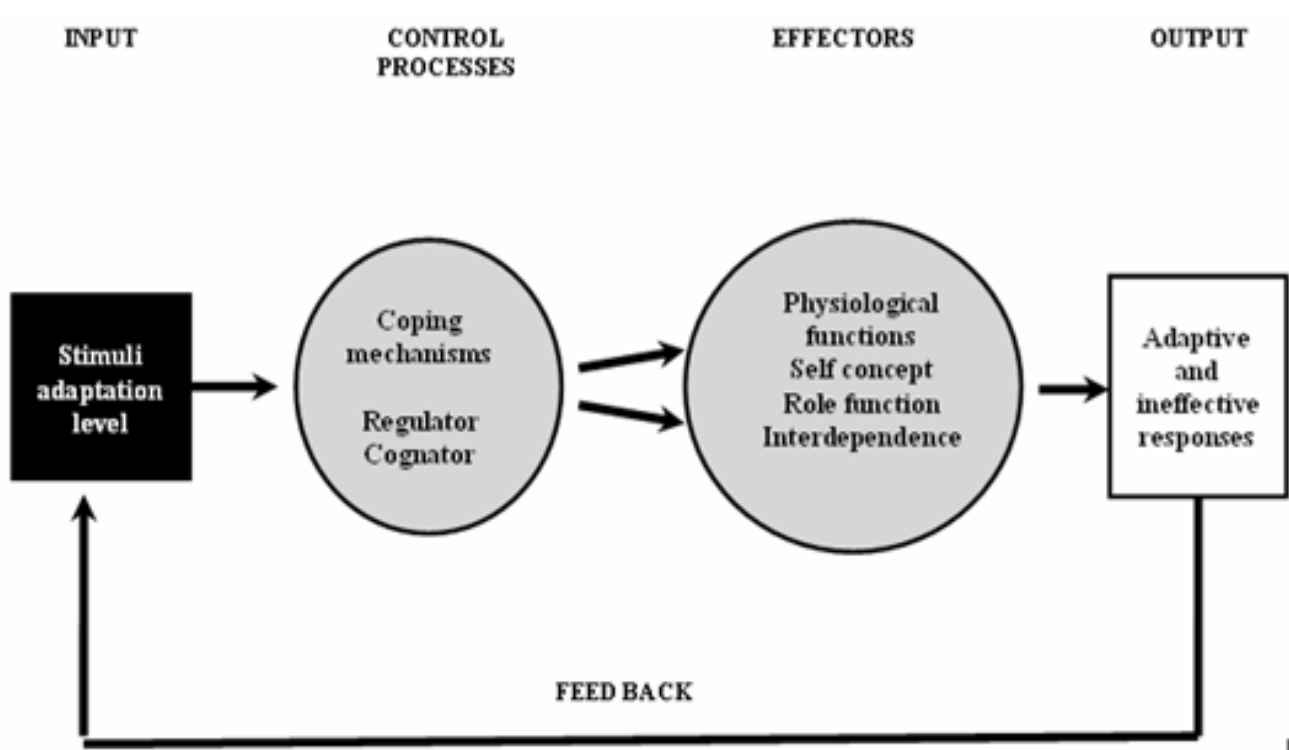


Figure 2: Roy’s Adaptation Model, retrieved from www.schoolworkhelper.net

Leininger’s Transcultural Nursing Theory

According to Leininger’s Theory, culture refers to the values, beliefs, norms, patterns and practices of an individual or a group of similar individuals (Oulu University Library, 2000). The culture is described as said to be learned behaviors by group members of any specific culture and transmitted to other group members inter-generationally. Using this theory, we are able to incorporate the specific needs of the Latin culture, behaviors, food preferences, beliefs, and preconceived ideas about nutrition and pregnancy as well as the importance of family involvement and other cultural ideas. It is important to be able to bring the education to the women and their culture in order for them to accept it and fully embrace the concepts being taught.

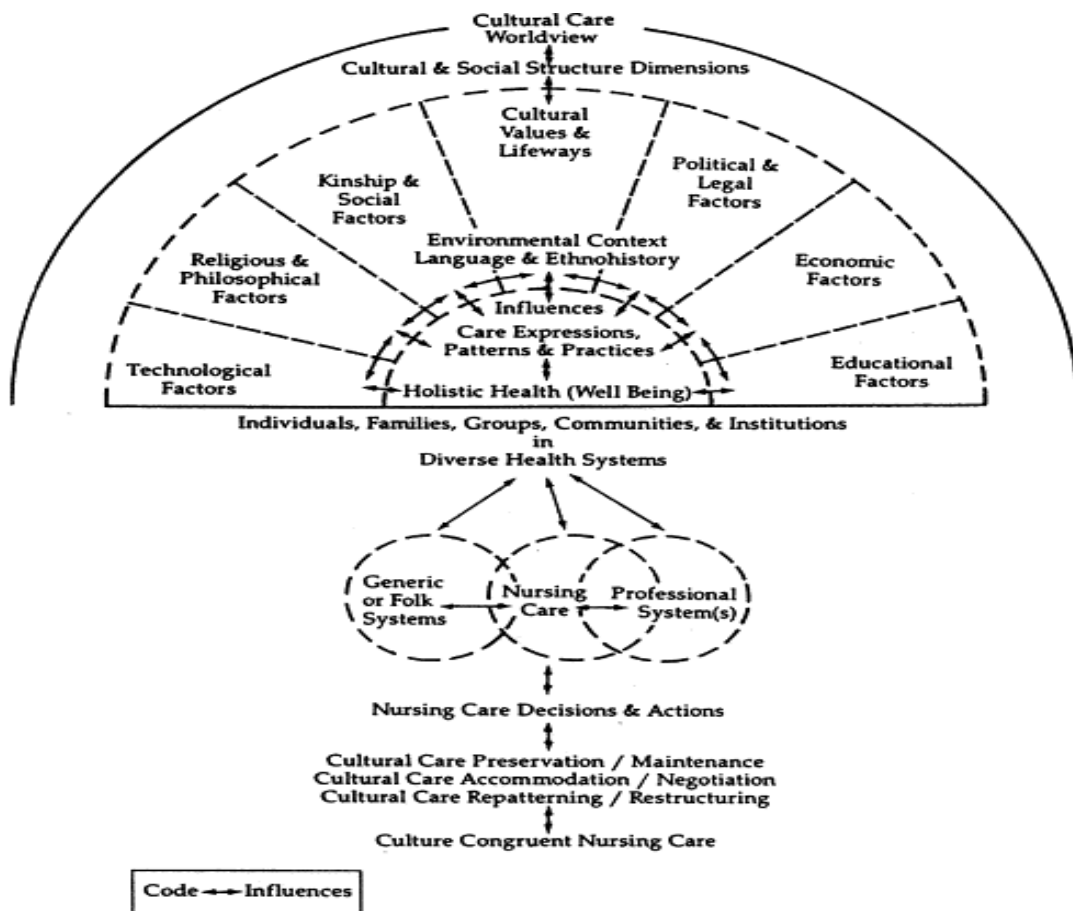


Figure 3: Leininger’s Transcultural Nursing Model retrieved from sciencedirect.com

Implementation

1. Obtain input from content expert Jane Dyer, CNM and Ellis R. Shipp clinic providers involved in the committee supporting this project to provide input for educational thread content by January 2013.
2. Use group prenatal care model for the development of program by March 2013.
3. Utilize second content expert from Utah Diabetes Association for input on Educational thread content by January 2013.
4. Give completed educational thread to Jane Dyer, CNM and Ellis R. Shipp clinic providers for possible use in future group prenatal care settings by April 2013.

Conclusion

According to 2006 vital statistic records, 93.3% of Hispanic women begin prenatal care by the second trimester. Therefore, these women could be introduced to the program early in their pregnancy, resulting in a better outcome for the mother and the baby. As obesity and GDM continues to increase in prevalence, these measures are just a few of the ones that can be taken to improve the health of mothers and babies in the Hispanic population.

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