

Gestational diabetes: Barriers in screening and management and their effects on patient outcomes in Hispanic women

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Gestational diabetes mellitus (GDM) is a condition that affects pregnant women worldwide, with a higher rate among Hispanic women. Hispanic women who face barriers to the screening and management of GDM are at risk of worse health outcomes, including subsequent development of type 2 diabetes both in the mother and in the infant. This systematic review evaluated the barriers Hispanic women face with regard to self-management and education about GDM, and how these barriers can be overcome. It is imperative to address these barriers with Hispanic women to help them to self-manage their condition and improve their outcomes for the future.

Gestational diabetes (GDM) is a form of diabetes that occurs only during pregnancy. In the past two decades, GDM rates have increased dramatically (Carolan et al, 2012). In the US, Hispanic women from disadvantaged backgrounds are most at risk of developing this condition and having it mismanaged. This can have an effect on the health of both the mother and the infant.

Problem statement

The Centers for Disease Control and Prevention (2021) state that every year 2–10% of pregnant women will develop GDM within the US. If left untreated, women who have GDM are at increased risk of developing high blood pressure and pre-eclampsia during pregnancy (Carolan et al, 2012). Furthermore, women who develop GDM have a 50% greater risk of developing type 2 diabetes than those who do not, and Hispanic women have a more than doubled risk of developing type 2 diabetes compared with non-Hispanic white women (Bower et al, 2019).

The US Preventive Services Task Force (2021) recommends that pregnant women be screened

for GDM between 24 and 28 weeks' gestation. To help manage GDM, patients should be instructed on appropriate diet, exercise/staying active, blood glucose monitoring and monitoring of the baby's development. Some women will have to treat their GDM with medications such as metformin or insulin. In one study, exercise and dietary modifications led to an improvement in glycaemic control (Mpondo et al, 2015). Individuals who were not able to manage their condition with diet and exercise required pharmacological management.

Some pregnant women are not able to participate in this comprehensive care plan for GDM due to barriers and lack of access to care. Therefore, the purpose of this systematic review was to explore barriers to GDM screening and management, and their effects on patient outcomes in Hispanic women.

Methods

Eligibility criteria

Studies on screening, management and barriers to treatment for GDM were included. Studies were included if any women reported factors that facilitate or inhibit GDM management. Additional

Citation: Hill S (2022) Gestational diabetes: Barriers in screening and management and their effects on patient outcomes in Hispanic women. *Journal of Diabetes Nursing* 26: [Early view publication]

Article points

1. Three themes emerged within this systematic review: barriers; lack of knowledge; and responsibility/support.
2. Within the barriers theme, three subthemes emerged: time pressure; social constraints; and physical constraints.
3. In the lack of knowledge theme, Hispanic women felt they did not understand what gestational diabetes was, or how to self-manage the condition.
4. In the responsibility/support theme, Hispanic women knew they were responsible for the self-management of GDM, and support from their family was a motivating factor.

Key words

- At-risk groups
- Barriers to therapy
- Gestational diabetes
- Self-management

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inclusion criteria included studies conducted within the US or Australia, written in English, between the years of 2010 and 2020. Qualitative studies were considered and different research designs were utilised.

Search strategy

The electronic resource databases used were CINAHL, Medline, PubMed, EBSCOhost, and Google Scholar. The following key search terms were used: gestational diabetes, screening, management and barriers. BOOLEAN search included: gestational diabetes OR gdm OR diabetes in pregnancy, AND barriers OR obstacles OR challenges OR difficulties OR issues OR problems OR limitations, AND women OR females, AND Hispanic OR Latino OR Latina OR Mexican OR Central American OR South American OR Hispanics OR Latinos.

Selection process

The selection process was according to PRISMA guidelines. The author read each article's title and abstract and applied the inclusion criteria. Once reviewed, the author retrieved the full-text article and the final decision was based on the inclusion criteria, analysis of Hispanic women and the purpose of the systematic review.

Quality assessment

Levels of evidence were determined according to American Association of Critical Care Nurses (AACN) criteria. The AACN evaluates research on two levels, to include grading the evidence using a system of levels and individually critiquing the research (Peterson et al, 2014). The purpose of determining the levels of evidence and grading of the evidence is to help with evaluating the credibility, reliability and validity of the research.

Another appraisal tool used for quality assessment was the Joanna Briggs Institute (JBI, 2021) Critical Appraisal Tool for Qualitative Research.

Data extraction and synthesis

Data were extracted from each study using the subheadings: author (year), study aim, design of study, participant demographics and concluding points. Data were extracted to depict the sample representation of Hispanic women with GDM

along with findings related to the objective of this systematic review.

Results

Search results

In total, 38 articles were identified through Medline, 37 through CINAHL and 37 through PubMed. After exclusion of fifteen duplicates, 97 articles were identified and reviewed based on their title, abstract and eligibility criteria. This yielded four studies to be used within this systematic review.

Study characteristics

All four articles were qualitative studies and all were published between 2012 and 2020. All four studies performed small focus groups with peer-to-peer interviews; one study also allowed participants to do telephone interviews. All four groups were audio recorded. The study participants were Hispanic women aged 18–45 years with a diagnosis of GDM. Two studies were conducted in Ohio, one in Chicago and one in Melbourne.

Quality assessment

The quality assessment for each article was evaluated using the JBI tool for qualitative studies. Quality assessment for each study is described within *Table 1*. Oza-Frank et al (2018), Ingol et al (2020) and Tang et al (2015) scored 8 out of 10 on the tool and Carolan et al (2012) scored 9 out of 10; these high scores indicate that the articles were effective to use within a systematic review. The level of evidence for each study, according to AACN criteria, was ranked as C, which indicates there is not enough evidence to recommend for or against the inclusion of the condition in a periodic health examination.

There was low risk of bias due to the satisfactory selection of the target group to include Hispanic women aged 18–45 years with a diagnosis of GDM. Each study also had English- and Spanish-speaking participants. However, one study recruited women with a history of GDM within the past ten years, which may have introduced recall bias if the participants found it difficult to recall their experience, as well as potentially making the study less relevant to current practice. In another study, there was potential bias because most of the participants were highly educated and

Table 1. Main findings of the four qualitative studies reviewed (Click to view a larger version).

Author (year)	Purpose	Participant demographics and study setting	Key findings (grouped into themes)	Quality assessment
Carolan et al (2012)	To understand the factors that facilitate or inhibit women's understanding and adherence to GDM dietary self-management principles	15 pregnant women with GDM, who spoke English and with no known serious abnormalities US	<p>Barriers <i>Time pressure:</i> Participants felt they had limited time to understand their diagnosis and had to urgently adopt new dietary changes. <i>Physical constraints:</i> Participants did not feel they were able to exercise regularly. The most common reasons why they did not meet exercise requirements were pelvic pain and back ache. <i>Social constraints:</i> Participants found it difficult to self-manage their GDM. It disrupted their family life due to having to make separate meals, as well as affecting their ability to eat how they would like at certain festivities or social functions.</p> <p>Lack of knowledge <i>Limited comprehension:</i> Participants did not understand what GDM was and did not understand self-management requirements. <i>Insulin is an easier option:</i> Participants felt it was easier to just take insulin versus changing their diet and exercising.</p> <p>Responsibility/support <i>Psychological support:</i> Participants identified psychological support as being very important and encouraging in helping them master the daily tasks of GDM self-management. <i>Realisation:</i> Participants came to the realisation that they were responsible for their own health and they had to do the work for self-management of GDM. <i>The baby:</i> Participants had a powerful interest in maximising fetal health and had motivation to avoid foods they were not supposed to eat and adhere to the self-management regimen.</p>	Level of evidence: C JBI score: 9/10
Oza-Frank et al (2018)	To examine healthcare experiences of a diverse sample of low-income women with a history of GDM	12 women (African-American, Hispanic or Appalachian), age 18–45 years, with a diagnosis of GDM within the past 10 years Ohio	<p>Lack of knowledge: Healthcare providers affected the quality and quantity of care received, the women's knowledge, management of GDM and follow-up of GDM. Hispanic women felt they were given little information on GDM by their providers, and what information they did receive was found to be lost with other information provided. They also felt they would have breastfed for longer if they had been notified of the connection between breastfeeding and type 2 diabetes after pregnancy; they did not understand the risk to their children from GDM. Lastly, they felt the high risk of developing type 2 diabetes after the postpartum period was not communicated.</p> <p>Barriers: Hispanic women found it very overwhelming to change their diet and craved foods they were told to avoid. Cost and transportation were also barriers to seeking healthcare and managing their GDM. Hispanic women without health insurance tended not to schedule follow-up office visits and felt they needed Emergency Medicaid extended after pregnancy. The cost of healthier foods was also a barrier. They felt the need to care for their family and home first before follow-up office visits.</p>	Level of evidence: C JBI score: 8/10
Ingol et al (2020)	To examine perceived barriers to adoption of lifestyle changes for type 2 diabetes prevention among diverse, low-income women with a history of GDM	64 women aged 18–45 years with a diagnosis of GDM within the past 10 years who spoke English or Spanish. An interpreter was used for Spanish-speaking participants Appalachian communities throughout the state of Ohio	<p>Lack of knowledge: Knowledge of healthy eating, physical activity and other behaviours for the prevention of type 2 diabetes had similarities and variations among different racial/ethnic groups. Hispanic women expressed a need for more information and resources on nutrition. A common misconception within this group was that they could eat any vegetable without a negative impact on their blood glucose; they were surprised when told to limit their intake of vegetables such as corn or potatoes due to their high carbohydrate content. Hispanic women also believed healthcare providers underestimated the level of exercise they engaged in every day; they were not accounting for the amount of walking the women did at work and around the home in tasks such as cooking.</p> <p>Barriers: Hispanic women felt it was hard to eat healthily due to having to cook and being unable to afford the food. They were unable to afford a gym membership to work out and would also have to pay for childcare whilst at the gym, which they could not afford. Participants reported personal and environmental barriers to accessing community resources. Some were not aware of the resources within their community and others felt they were not welcomed when trying to go. Within the Hispanic population, resources were available at church; however, the meetings always involved potluck meals with unhealthy food options.</p> <p>Responsibility/support: Support was identified as an important motivator for engaging in lifestyle approaches known to improve GDM and reduce the risk of type 2 diabetes. Social support from family and friends helped empower the women. Hispanic women reported successful breastfeeding experiences because of the encouragement from family and friends.</p>	Level of evidence: C JBI score: 8/10
Tang et al (2014)	To explore the perspective of Hispanic, African-American and White women affected by GDM	23 women diagnosed with GDM, stratified into three racial/ethnic groups: African-American, Hispanic and non-Hispanic white. The participants spoke English or Spanish. Women's hospital in Chicago	<p>Lack of knowledge: Participants believed type 2 diabetes was a more severe condition which could lead to blindness or amputation and reduce both their lifespan and quality of life. Women were familiar with type 2 diabetes but had little understanding of GDM prior to diagnosis. As time progressed within the women's pregnancy, they began to minimise the diagnosis of GDM due to perceiving it as common, mild, easy to control and/or temporary.</p> <p>Responsibility/support <i>Perceived benefits of engaging in healthy behaviours:</i> There were several motivations to improving health behaviours, including avoiding type 2 diabetes, staying healthy to care for their children and serving as a role model to their children. Participants were motivated to change in order to avoid type 2 diabetes; however, they were less motivated about preventing GDM in future pregnancies.</p> <p>Barriers <i>Perceived barriers to engaging in healthy behaviours after delivery:</i> Although their children were a motivator for behaviour change, they were also a barrier to implementing it. The participants found it to be more important to take care of their newborn or other children than to spend that time on exercise or meal planning.</p>	Level of evidence: C JBI score: 8/10

GDM=gestational diabetes; JBI= Joanna Briggs Institute Critical Appraisal Tool for Qualitative Research.

were self-selected; those who opted out may have had greater knowledge about GDM and more motivation to improve their health, in addition to facing fewer barriers to behaviour change and healthcare access.

Findings

The principal findings of the four studies are presented in *Table 1*. The studies identified a number of factors that either assisted or made it difficult for Hispanic women to screen and manage

their GDM. Three themes were identified: barriers; lack of knowledge; and responsibility and support. Within the theme of barriers, three subthemes also emerged: (1) time pressure, (2) social constraints and (3) physical constraints.

Barriers: Time pressures

Hispanic women found time pressure to be a barrier due to not having enough time in the day to manage their GDM alongside their work and their families. They found it more important to take care of their



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family and homes: tasks such as working, cooking, cleaning and taking care of their children. Another time pressure that was discussed in one study was insufficient time to understand their diagnosis and urgently adopt new dietary changes (Carolan et al, 2012).

Barriers: Social constraints

The second subtheme explores social constraints. Hispanic women found it difficult to afford certain food options and found themselves cooking two different meals for their family and themselves. They also had transportation issues and were sometimes unable to come to follow-up office visits. Participants in one study did not have health insurance and were not able to follow up in the office (Oza-Frank et al, 2018). They felt they needed Emergency Medicaid extended after their pregnancy to continue to follow up on their management and make sure they had not developed type 2 diabetes.

Participants were also unable to afford a gym membership to work out and would not be able to pay for childcare whilst at the gym (Ingol et al, 2020). Some participants were not aware of resources available within their community, and those who were did not feel welcome when trying to attend.

Barriers: Physical constraints

The third subtheme explores physical constraints. Participants did not feel they were able to exercise regularly as advised by their healthcare provider or diabetes educator. The most common reason for this was pain: most participants stated they had pain in their pelvis or back and were unable to exercise or move a great extent due to this (Carolan et al, 2012).

Lack of knowledge

Lack of knowledge was a barrier to the screening and management of GDM. In all four studies, Hispanic women felt they did not fully understand what GDM was, nor did they understand the requirements for self-management with diet, exercise and blood glucose checks. They also felt they were given little information on GDM by their healthcare provider. In one study, they were unaware of the high risk of developing type 2 diabetes postpartum (Oza-Frank et al, 2018). However, in another study, participants believed type 2 diabetes was a more

severe condition which could lead to blindness, amputation and reductions in life span and quality of life (Tang et al, 2014). This lack of understanding of GDM led participants to minimise their diagnosis and perceive it as common, mild, easy to control and temporary.

In one study, there was a misconception of what foods participants should eat, and they were not given examples of what to eat (Ingol et al, 2020). There was also a misconception on exercise; participants felt as though healthcare providers underestimated the level of exercise they engaged in every day, and that the walking done at home and at work was not counted as exercise (Ingol et al, 2020). In another study, participants felt it was easier to take insulin than to change their diet and exercise (Carolan et al, 2012).

Responsibility and support

Participants identified support as being an important motivator to help them engage in lifestyle changes such as diet and exercise. Support from family and friends also helped to empower them. Through the support of family and friends, participants engaged in lifestyle changes and stayed motivated for their children and family, and this helped them to avoid developing type 2 diabetes postpartum (Tang et al, 2014). With support from family and friends, participants also realised they were responsible for their own health and had to do the work to self-manage their GDM (Carolan et al, 2012).

**Implications for practice
and future research**

This study has important implications for practice because every year 2–10% of pregnant women will develop GDM. If left untreated, these women have a higher risk of developing type 2 diabetes after delivery. Therefore, it is important to address the three themes that were identified within this study. It is imperative to provide Hispanic women with education, resources and the tools they need to self-manage their GDM. These women should be given information on GDM and examples of how to manage it through diet, exercise and potentially medication. Resources such as diabetes education classes should be provided to these individuals.

Successful self-management of GDM is associated

with lower rates of serious pregnancy complications, infant morbidity and risk of developing type 2 diabetes later in life (Carolan et al, 2012). It is also important to continue to encourage Hispanic women to utilise their support system of family and friends, who can motivate and encourage them with their lifestyle changes, as well as help them recognise that they are ultimately responsible for their own health.

Study limitations

One limitation of this systematic review is that the research yielded only four studies for analysis, all qualitative studies. Other study designs with statistical analysis could have been used to explore the data further and make the systematic review more in-depth. Even though all of the studies used in this analysis were qualitative studies, they all ranked either an eight or nine out of ten on the JBI Critical Appraisal Tool, which helps evaluate the credibility, reliability and validity of research (Peterson et al, 2014).

Conclusions

In conclusion, this study indicates that Hispanic women aged 18–45 years with a diagnosis of GDM

often have barriers, lack of knowledge and need for support/responsibility in the self-management of the condition. They require supportive services to help with the self-management of GDM and improve their outcomes. ■

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