Implementation of a Food Diary Tool in Latina Women with Gestational Diabetes

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Introduction

► Excessive weight gain during their pregnancy affects mom & baby

► Obesity→3x the risk of developing gestational diabetes (GDM)

► Increased prevalence of obesity in women of reproductive age
   — 32.4 % of women are obese
   — 60% of overweight and 45% of obese women

Dennedy & Dunne, 2010

Problem Statement

► Inadequate nutritional education and dietary counseling
  — Excessive weight gain in Latinas with GDM
  — Adverse pregnancy outcomes (i.e GDM, preeclampsia, c-section)

► Increased incidence of GDM in Latina women

► Current practice is a one-time GDM class & blood sugar monitoring

► Focus on nutrition

Carolan-Olah et al., 2017; Anderson et al., 2015

Purpose

► To increase provider led initiative to utilize the food diary tool at each prenatal visit thereby increase patient compliance in newly diagnosed Latinas with GDM by way of utilizing a food diary at least 3x/week over a four-week period.

► To educate pregnant patients on the importance of monitoring their food intake during their 2nd and 3rd trimesters in pregnancy.

Objectives

1. Modify ACOG's food diary tool and provider instructions to health care providers by May 2021.

2. Educate pregnant Latinas with GDM on the use of the food diary at their prenatal visit after diagnosis of gestational diabetes by the end of May 2021.

3. Implement GDM teaching including nutritional content and food diary use to identify newly diagnosed GDM pregnant Latina patients by the end of May 2021.

4. Collect food diary tool use by gathering patient data via paper documentation by June 2021.

5. Collect the frequency data of how often patients used the food diary tool by the end of June 2021.

6. Analyze frequency data of patients using the food diary tool in July 2021.

Background

► **Focus on nutrition**
  - Latina women likely to have risk factors

► **Why this QI project?**
  - APRNs can provide patient education about lifestyle changes
  - Impact on clinical outcomes

Kieffer et al., 2014; Anderson, 2015; Sedaghat et al., 2017

Setting

► **Georgia Highlands OBGYN Clinic**

— A nonprofit outpatient practice

— Services: PNC, GYN, family planning and contraceptive management

— 44% of pregnant patients are obese at pre-pregnancy

— 81% of obese women are Latinas

— 6 providers: 3 (CNMs) and 3 OBGYNs

— Support staff: 2 medical assistants, 2 front-desk representatives, and an office manager.

Sedaghat et al., 2017

Concepts

- **Gestational Diabetes (GDM)**
  - Any degree of glucose intolerance during pregnancy that is mostly detected in the third trimester.

- **Obesity**
  - Having a body mass index (BMI) greater than $30kg/m^2$
  - Modifiable risk factor

- **Weight gain**
  - An excess of subcutaneous fat in proportion to lean body mass

Sedadghat etl al., 2017; Dennedy & Dunne, 2010

Conceptual Framework

► The Donabedian Model: healthcare quality is measured by structure, process, and outcomes.

► This model of care applied to this QI project by measuring the overall quality improvement and clinical outcomes for Latina women with GDM.

► Relationship between organizational systems, clinical interventions, patient's underlying characteristics, and outcomes.

► Clinicians to commit to providing quality care that is patient-centered and to understand the multifactorial influences of clinical outcomes.

Bucci et al., 2014; Sword et al., 2012

PICOT QUESTION

► Does the implementation of a food diary tool impact eating behaviors in Latina women diagnosed with gestational diabetes (GDM) for the first time over the time of their initial diagnosis until four- weeks post-diagnosis?

Synthesis of the Evidence: Evidence Search

► A total of 13 research articles

► 3 articles excluded

► *Inclusion criteria*
  — Minority women with GDM
  — Interventions that include dietary counseling or exercise
  — Nursing and health-related databases

► *Exclusion criteria*
  — Studies that did not include minority women
  — Women with other risk factors other than obesity

Synthesis of the Evidence: Themes

► **TRAINED HEALTCARE PROVIDERS**
  — Delivery of comprehensive nutritional education
  — Patient empowerment
  — More trusted by patients
  — Increase in self-efficacy and self-management skills
  — Contradictory: most physicians felt uneasy in counseling patients

Anderson et al., 2015; Gianfrancesco et al., 2018; & Kieffer et al., 2014

Synthesis of the Evidence: Themes

► **BARRIERS**
  – Cultural influences
  – Intrapersonal barriers
  – Institutional barriers
  – More trusted by patients
  – Increase in self-efficacy and self-management skills
  – Contradictory: most physicians felt uneasy in counseling patients

Anderson et al., 2015; Carolan-Olah, et al., 2017, & Sedaghat et al., 2017

Synthesis of the Evidence: Themes

► **PHYSICAL ACTIVITY**
 — Prevents risk of GDM

 — Aids in managing GDM

 — Possibly impact maternal and perinatal outcome

 — Contradictory: no significance difference in pregnancy outcomes

Carolan-Olah et al., 2018; Chasen-Taber et al., 2008 & Oteng-Ntim et al., 2012

Methods

► **Project Design**

– The aim of this project was to educate Latina women diagnosed with GDM on the importance of dietary changes and monitoring their food intake during their 2nd and 3rd trimesters in pregnancy.

– A quantitative measurement was used to observe the frequency of food diary tool utilization

Methods

► **Setting**
  - Georgia Highlands Medical Services
  - 6 providers: 3 CNMs and 3 OBGYNs
  - 2 MAs, 2 front desk workers and an office manager

► **Participants**
  - Latina women between 16-40 y/o
  - Inclusion criteria: primigravida and multigravida, newly diagnosed with GDM.
  - Exclusion criteria: prior history of GDM/T2DM

Methods

► **Intervention**
- Create food diary tool
- Train CNMs
- Front desk confirms appointments
- CNMs Educate participants
- Weekly Data collection

Methods

- **Data Collection: Concepts**
    1. Gestational Diabetes (GDM)
    2. Obesity
    3. Weight gain
- Data collection tool: a food diary written in both English and Spanish
- Data collected: frequency of the food diary tool
- Table format
- Modified ACOG's current blood glucose log.

ACOG'S GLUCOSE LOG

Date	Pre-breakfast	Insulin	Post-breakfast	Insulin	Post-lunch	Insulin	Post-dinner	Insulin
Example: Oct 25	82		140		127		94	20 u NPH at 10 PM

Food Diary & Glucose Log

Date	Breakfast	Snack	Lunch	Snack	Dinner	Snack	Blood Sugar
							Fasting= 2hrs after breakfast= 2hrs after lunch= 2hrs after dinner= Bedtime=
							Fasting= 2hrs after breakfast= 2hrs after lunch= 2hrs after dinner= Bedtime=
							Fasting= 2hrs after breakfast= 2hrs after lunch= 2hrs after dinner= Bedtime=
							Fasting= 2hrs after breakfast= 2hrs after lunch= 2hrs after dinner= Bedtime=
							Fasting= 2hrs after breakfast= 2hrs after lunch= 2hrs after dinner= Bedtime=

Diario de Alimentos y Registro de Glucosa

Fecha	Desayuno	Merienda	Almuerzo	Merienda	Cena	Merienda	Azúcar en sangre
							En ayunas= 2hrs despues de desayuno= 2hrs despues de almuzerzo = 2hrs despues de cena= Antes de dormir=
							En ayunas= 2hrs despues de desayuno= 2hrs despues de almuzerzo = 2hrs despues de cena= Antes de dormir=
							En ayunas= 2hrs despues de desayuno= 2hrs despues de almuzerzo = 2hrs despues de cena= Antes de dormir=
							En ayunas= 2hrs despues de desayuno= 2hrs despues de almuzerzo = 2hrs despues de cena= Antes de dormir= Bedtime=

Methods: Data Collection

► Organized and reported in a table format

► Food diaries stored in a locked cabinet

► Final data stored in a locked office storage

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Data Collection

Patient's Account #	Date	Yes, brought in food diary	No, did not bring diary

Analysis

► Descriptive statistics on Microsoft Excel.

► Total # of PNV + # of PNV participants had the food diary tool were collected.

► Common themes compiled from CNMs

Results

- ***Participant's Demographics***
  - 31-40 years of age
  - Spanish as Primary language
  - Multigravida

- ***Variations in utilizing the food diary tool***
  - Lower level of education→less likely to use tool
  - Pre-pregnancy obesity →more likely to use tool
  - Compliant with diet→more likely to use tool

Table 2

Characteristics of participants in a quantitative study in Latina women with GDM

Characteristic	n=3
Maternal Age (years)	
≤20	0
21-30	0
31-40	3
Primary Language	
English	0
Spanish	3
Gravidity/Parity	
Primigravida	0
Multigravida	3

Table 2

Characteristics of participants in a quantitative study in Latina women with GDM

Characteristic	n=3
Pre-pregnancy BMI	
Normal	1
Overweight	1
Obese	1
Dietary Pattern	
3 meals, 3 snacks	1
3 meals, ≤1 snack	2
Highest Level of Education	
Primary	1
Secondary	1
University	1
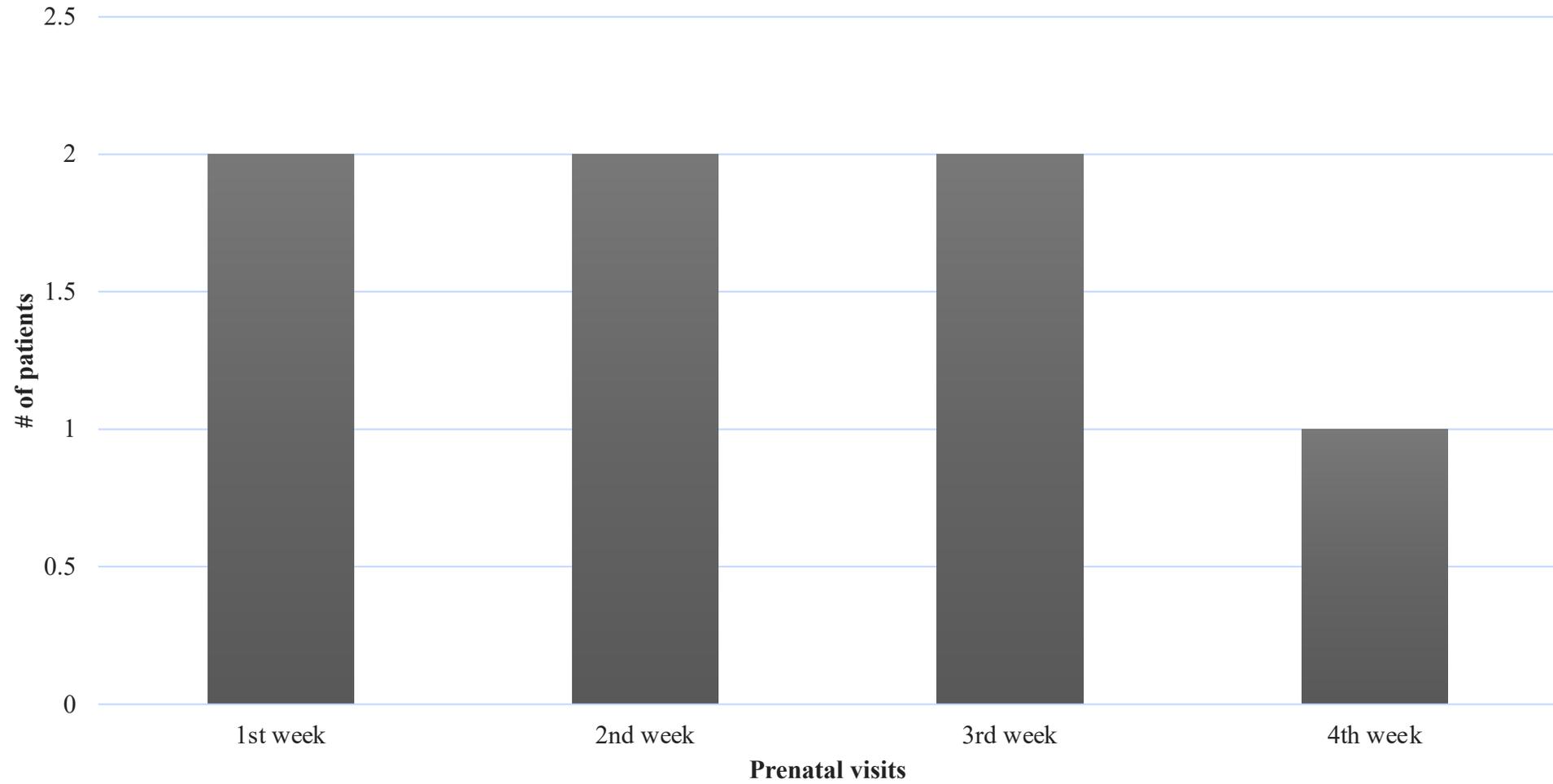
Discussion

► Increased awareness in food choices

► Improvement in eating behaviors

► Variation in participant's compliance based on educational attainment

Discussion

► *Themes on Implementation*
  ─ Cultural variations in food choices

  ─ Organizational cultural factors

  ─ Participant's attitude

Discussion

► *Strengths*
  — Small sample size
  — Easy recruitment
  — Supportive staff
  — Feasible weekly visits

► *Limitations*
  — Small sample size
  — Self-reported data
  — Time constraints
  — Language barrier

Discussion

► *Implications of findings*
- — Importance of dietary education

- — Comprehensive nutritional care

- — Culturally sensitive prenatal care

Conclusion

- ➤ It is vital to provide comprehensive patient education that is consistent, individualized, and culturally appropriate.

- ➤ Adequate patient education can lead to increased compliance and better clinical outcomes.

- ➤ Language barriers: future research may consider how to eliminate these to improve health outcomes.

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QUESTIONS