Pregnant Women with Diabetes: Health Problems, APN Interventions in 2 Models of APN Transitional Care

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Florida International University
Dorothy Brooten, PhD, RN, FAAN, Professor of Nursing
Florida International University

JoAnne Youngblut, PhD, RN, FAAN, Professor of Nursing
Florida International University

Jean Hannan, PhD, Assistant Professor of Nursing
Florida International University

Frank Guido-Sanz, MSN, PhD Student, FIU

Donna Felber Neff, PhD, RN, Associate Professor
University of Florida
Literature lacks empirical data providing profiles of common problems women encounter during or following pregnancy complicated by diabetes from the women’s perspectives.

Data important for delivery of health care services & education of health care providers.
Women who develop gestational diabetes must learn about both diabetes and how to manage it for the remainder of their pregnancy.

Literature heavily focused on provider directives on adherence to specific medical treatment plans.

Limited data on provider responses to common problems women encounter.
Study Purpose

The purpose of this study in women with diabetes in pregnancy, was to examine differences in type and frequency of health care problems and APN interventions between 2 models of APN provided care.
Model 1- Additive

- APN care added to physician prenatal care.
- Received APN home visits, telephone outreach.
- APN availability: Antenatal hospitalization to 8 weeks post delivery.
- APN intervention: Teaching, counseling, diabetes management.
- Backup by the women’s physicians

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Model 2- APN Substitution

- Half of physician-provided prenatal care was substituted with APN-provided prenatal care in the women’s homes.

- Postpartum: APNs provided one home visit.

- APN Intervention: Teaching, counseling, diabetes management, telephone availability & physician backup.
Research Questions

In examining the 2 models of APN care for pregnant women with diabetes are there differences in:

- type and frequency of women’s health care problems
- type and frequency APN interventions
Design

- Content analysis of 41 interaction logs
  - Generated by APNs during each RCT to document care
  - Captured verbatim discussion with women, health care providers
- Log data classified using Omaha System’s Problem Scheme & Intervention Scheme.

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Sample N = 41 Women

- APN interaction logs
- 19 women from substitution model
- 22 women from additive model
- Women’s mean age 30
- Predominantly African American 83%
- High school graduates 64%
- Public insurance 73%

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Measures

Women's Problems:

Omaha System’s Problem Scheme was used to identify and classify health care problems identified by the women and/or the APNs.
Measures

- Each problem assigned to one of system’s 4 Domains
  - 1. Environmental
  - 2. Psychosocial;
  - 3. Physiological;
  - 4. Health-related behaviors.

- Each domains has 5-16 subcategories of problems.
Measures
APN Interventions

- Omaha System’s Intervention Scheme
- 4 broad categories:
  - 1. Health teaching, guidance, counseling
  - 2. Treatments and procedures
  - 3. Case management
  - 4. Surveillance
- 63 nursing practice activities “targets”
Measures

Contacts

- Home visits, telephone calls, clinic visits, and hospital visits.
- Each contact numbered.
- Classified as antenatal or postpartum.
- Type and duration recorded.
Procedure

- Study approved by IRB
- Text of interaction logs between APN and women divided into smallest word or phrase
- Contained single idea “units.”
- Each unit classified using Omaha System
Procedure

- Data units assigned to:
  - Domains.
    - Subcategories for health care problems
  - Intervention categories
    - Targets for APN interventions
Procedure

- Work sheets used to record each contact:
  - Contact number, type, duration, health care problem (domain and subcategory), APN intervention (category and target).
  - Inter-rater reliability maintained > 85%.

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Results
Women’s Problems  N = 41

- Total of 61,004 women’s health problems.
- Problem means:
  - Substitution group: 2642 (SD = 1062)
  - Additive group: 491 (SD = 366)

\[ t(21.69) = 8.41, \ p < .001 \]
Results

Antepartum period

Mean number of problems:

- Substitution group 1883 (SD = 1075)
- Additive group: 326 (SD = 321)

\[ t(20.77) = 6.09, \ p < .001 \]
Results
Antenatal Problems

- Most prevalent for APN Additive & APN Substitution
- Health-related behaviors
  - (3548, 49.5% vs. 16,976, 47.5%)
  Nutritional & health care supervision
- Physiologic (3498, 48.9% vs. 16,279, 45.5%)
  Difficulty coping with body changes

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Results

Antenatally Health care Problems

Psychosocial problem:
- Substitution: Interpersonal relationships (1483)
- Additive: Caretaking/parenting (22)

Environmental Problem
- Substitution: Residence (343)
- Additive: Income (49)
Results
Postpartum

Mean number of problems:
- Substitution group 759 (SD = 302)
- Additive group: 165 (SD = 206)

$t(39) = 7.45, \ p < .001$. 
Results
Postpartum Health Care Problems

▶ Most common in both groups:
▶ Physiologic (1783, 49.0% vs. 6357, 44.1%)
▶ Psychosocial (964, 26.5% vs. 4384, 30.4%)

growth and development (488 & 2772)

▶ Health-related behavior
▶ Substitution: Health care supervision (2622)
▶ Additive: Nutritional problems (447)

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Results

APN Interventions

- Total number of APN interventions 61,007
  - 70.3% provided antenatally
  - 29.7% postpartum
- Provided more interventions to Substitution group antenatally, postpartum, and in total
- \( p < .001 \)
Results
APN Interventions

- Predominate interventions antenatally and postpartum were:

- Surveillance
  Target: Signs/symptoms of physical problems

- Health teaching/guidance/counseling
  Target: Signs/symptoms of physical problems
Significance

- Provided important information about:
  - APN practice in caring for women with diabetes in pregnancy.
  - Differences in APN functioning in 2 care models
Discussion

- Profile of health care problems was similar in both groups.

- Substitution group: more women’s problems identified; more APN interventions & contacts.

- Greater shared APN physician prenatal/postpartum care (Substitution group) resulted in more women’s health problems being identified and more APN interventions being provided
Conclusion

Many approaches tested to improve maternal and infant outcomes in high risk women.

Study provides an overview of women’s problems.

Captured the range of APN interventions.

Surveillance, teaching, guidance & counseling predominant APN functions.

Improved patient outcomes in both models of transitional care.

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Thank you