The Impact of CenteringPregnancy Implementation

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Abstract

Evaluation of 6 **CenteringPregnancy Group Prenatal Care** cycles showed the logic models supported implementation and expansion of Centering Groups at 2 federally qualified health centers. There was adequate progress toward site approval with favorable method fidelity scores in addition to patient and staff satisfaction ratings using the **CenteringCounts data collection system**. Outcomes in 33 participants demonstrated beneficial effects on key indicators.

Problem

Preterm birth, low birthweight, and increased rates of cesarean section are the source of a large burden of infant, neonatal, and childhood morbidity and mortality. African Americans are disproportionally affected.

The monetary cost to the health system, as well as emotional, psychosocial and educational costs, impact caregivers, families, and communities.

The incidence and prevalence of preterm birth and low birthweight in The Bronx, New York City exceeds regional state, national, and local averages despite years of borough-wide, targeted educational programs and cutting edge perinatal technologies.

The lack of a defined, effective intervention dictated a need to implement an evidence-based model to address the needs of this vulnerable population at both medical and psychosocial risk.

Purpose

CenteringPregnancy Group Prenatal Care was implemented at two federally qualified health centers in a large, multisite, urban hospital system.

Use of the **plan-do-check-act model, Lewin's field analysis and disruptive design** guided the planning, implementation, and expansion of CenteringPregnancy and an evaluation of quality improvement, satisfaction, and financial impact in this marginalized socially at risk population at both high medical and psychosocial risk.

Relevant Literature

CenteringPregnancy Group Prenatal Care is a midwifery-designed model delivered by multidisciplinary teams.

Tenets of **Self Care Theory** and **Social Cognitive Theory** may explain beneficial effects in participants including lower rates of preterm birth, low birthweight, and cesarean section.

Centering ameliorates health disparities and increases the rate of breastfeeding. The mechanism of action remains unknown but it is postulated that enhanced education and psychosocial support reduces the barriers to prenatal care attendance.

Empowering women enables them to seek medical attention earlier when experiencing problems, better compliance with treatment regimens, healthier behavior choice, and a more positive, relationship with care providers.

Enhanced levels of social support, might ameliorate stress and increase coping. Stress reduction decreases inflammatory mediators that contribute to the cascade of preterm labor.

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Research Questions

Will low income, racial and ethnic minority women at high medical and psychosocial risk who receive support and education using the CenteringPregnancy Group Prenatal Care Model have lower rates of cesarean section and give birth to fewer preterm and low birthweight infants than those receiving traditional prenatal care services?

Will more low income, racial and ethnic minority women at high medical and psychosocial risk who receive support and education using the Centering Pregnancy Group Prenatal Care Model be breastfeeding on hospital discharge than a cohort of women receiving traditional prenatal care services?

Procedures

Logic models to guide the process, coordinate, and customize the process of Centering implementation to each site's needs were created.

Outcome data from 6 cycles, representing 33 participants, were tracked using CenteringCounts to monitor attendance, prenatal care adequacy, method fidelity, patient, and staff satisfaction.

Comparison was made to non participants with similar due dates, and parity using standard quality improvement monitoring.

Data Analysis

CenteringCounts data for participants who completed a complete group cycle were compared with institutional baseline rates to asses progress toward meeting quality improvement targets.

Outcomes of selected Centering participants who delivered preterm were paired with estimated date of confinement cohort controls in traditional care, matched for risk status, parity and gestational age at delivery for comparison.

Findings

The **preterm birth rate (PTB)** for the 33 women who completed four group cycles was 12.1%. The current institutional average rate of PTB is 13.8%.

Twenty-seven out of 33 women (91%) for whom infant feeding data was available were **breastfeeding** at hospital discharge. The institutional average is 89%.

Eight out of 33 women (24%) delivered by **cesarean section.** The institutional average is 33%.

Centering participants who delivered preterm had babies with **higher birthweights and less neonatal intensive care unit (NICU) admission** than matched controls in traditional care.

Eight out of 33 women (23%) with medical risk factors did not experience any unexpected complications.

Limitations

The small amount of clinical outcome data precluded statistical analysis given the nature of the project as a quality improvement endeavor.

The numbers of women who completed full Centering group cycles of are too small and the demographic data too sparse to be generalizable.

The racial and ethnic make up of the patients and the effect on racial and ethnic disparities in this sample cannot be assessed.

Conclusions

This program has the potential to impact the high rate of preterm birth, low birthweight, cesarean section, and increase rates of breastfeeding initiation.

Findings corroborate those of previous studies that found increased birthweights in Centering participants who delivered preterm, less NICU admissions, a potential for significant financial, emotional and social cost savings, increased satisfaction, and care quality.

Social Change Implications

This program may offer a **significant source of potential savings to the United States healthcare system** as well as emotional and physical pain and disability to affected families and children.

Centering **addresses health disparities** in racial and ethnic minorities and decreases levels of maternal stress and increases self-efficacy amongst Centering participants.

Momentum behind a proposal to expand the midwifery service along with the CenteringPregnancy program has **demonstrated the role of the DNP in advancing the role of advanced practice nurses in an institution-wide public heath initiative to implement evidence-based practice change in maternity care.**

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