

CenteringPregnancy Group Prenatal Care: Promoting Relationship-Centered Care

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CenteringPregnancy is an innovative model of group prenatal care that has been implemented at more than 100 prenatal care sites since 1995. CenteringPregnancy provides group prenatal care that is relationship centered, nurturing and transforming relationships among women, their families, and health care professionals. Complete prenatal care is provided in a group setting. Prenatal assessment, education, and support occur in a facilitative environment. The model offers effective and efficient care that is sustainable and can enhance the health of women, their families, health care providers, and communities. *JOGNN*, 35, 286-294; 2006. DOI: 10.1111/J.1552-6909.2006.00040.x

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Within the usual parameters of prenatal care, it is challenging to fully address the complex psychosocial needs of the mother and her family as well as concerns for safe physical outcomes for the mother and infant. Health care providers continue to search for ways to optimize the delivery of prenatal care to provide for the best possible outcomes for mothers and babies. CenteringPregnancy group prenatal care is designed to address the recommended content for “optimal prenatal care” to improve the quality of care and consequently perinatal outcomes (U.S. Public Health Service, 1989). The objectives of this article are to review CenteringPregnancy and provide evidence to support it as an exemplary model of relationship-centered care.

CenteringPregnancy is a model for providing complete prenatal care to women within a group setting. Prenatal assessment, knowledge and skills development, and support occur in an atmosphere that facilitates learning, encourages free exchange, and develops mutual support. The model is built on the premise that prenatal care is most effectively and efficiently provided to women in groups, that learning and support are enhanced by group resources including the guidance of the professional care provider, and that this high quality of care can be difficult to achieve within the traditional structure of individual examination room visits (Rising, 1998).

Individual care provides limited contact with providers, typically does not provide support services, and is often too fragmented to respond to the complex needs of pregnant women. Group care permits substantially more time compared to traditional individual prenatal care (e.g., 120 hours vs. 15 minutes for each visit, or 20 hours vs. 1.5 hours throughout the prenatal period, respectively). This provides important opportunities to truly gain the experience, knowledge, and skills necessary for a healthy pregnancy and childbirth. It is based on the philosophy that pregnancy is a process of wellness, and a time when many women can be encouraged to take responsibility for their own health and learn self-care.

CenteringPregnancy care is quintessentially relationship centered. By taking health care out of the examination room, barriers between health care providers and patients are eliminated. Meeting in a group setting with other women of the same gestational age who are experiencing similar physiological and psychological changes of

pregnancy nurtures supportive relationships among patients.

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By actively including support people in group prenatal care, CenteringPregnancy strengthens the family bonds essential to nurture and raise a healthy child. By creating an integrated team of health care providers to serve women and their families throughout pregnancy and into the postpartum period, Centering promotes new ways of nonhierarchical interaction between health care providers. By strengthening women, their families, and health care professionals, Centering strengthens the communities in which they live and work. Finally, by fundamentally restructuring the way prenatal care is provided, Centering has the potential to revolutionize prenatal care for all women. Initial research results indicate that patients in public health clinics who received group prenatal care had better birth outcomes (e.g., longer gestation, significantly larger babies) than their counterparts receiving traditional individual care (Ickovics et al., 2003).

CenteringPregnancy: Structure and Process of Group Prenatal Care

The structure of CenteringPregnancy has been described in detail elsewhere (Rising, 1998; Rising, Kennedy, & Klima, 2004). It is based on the three essential components of prenatal care: assessment, education/skills building, and support. All prenatal care occurs within the group setting except for the initial assessment and medical or psychosocial concerns involving the need for privacy. Women begin prenatal care in the usual manner with history and physical examination in the office/clinic space. Then, they are invited to join 8 to 12 other women of similar gestational age (e.g., all with babies due in November) to meet together to obtain all future prenatal care, share support from other women, and obtain knowledge and skills related to pregnancy, childbirth, and parenting. Women are encouraged to bring the baby's father or another support person to their group sessions. Women are enrolled in groups between 12 and 16 weeks gestation and continue through their pregnancies, following the recommended schedule of prenatal visits from the American College of Obstetrics and Gynecology (i.e., monthly and then biweekly).

Women in public clinics who received CenteringPregnancy prenatal care had better birth outcomes than those who received traditional individual care.

CenteringPregnancy has 10 defined 2-hour sessions, each with the same format. A health care provider completes individual prenatal assessments during the first 30 minutes of each session. These are conducted in one corner of the room—providing some privacy but not totally shielded from others. With her provider, a woman listens to her baby's heartbeat, checks for uterine growth, and talks privately about specific issues. She is encouraged to bring general questions to the group, recognizing that all may benefit from a discussion on ways to reduce low back pain or considerations of breastfeeding. While others are being seen by the provider, a woman can read her Mom's Notebook (includes information on group sessions, prenatal care, fetal development, etc.) and complete the Self-Assessment Sheets for the session. Self-Assessment Sheets are designed to stimulate self-care/evaluation and provide the foundation for subsequent group discussion (e.g., My Goals for a Healthy Pregnancy or Common Discomforts of Pregnancy). Once each person has completed one-to-one assessments, it is time to "circle up." The circle begins with self-introductions, reminders of group guidelines (e.g., confidentiality, respect), and a brief relaxation/breathing exercise. Social support is interwoven with the more formal context of sessions (Table 1) and is also provided informally among participants.

TABLE 1
Topic Areas for Education in CenteringPregnancy Group Sessions

Nutrition
Exercise
Relaxation techniques
Understanding pregnancy problems
Infant care and feeding
Postpartum issues including contraception
Communication and self-esteem
Comfort measures in pregnancy
Sexuality and childbearing
Abuse issues
Parenting
Childbirth preparation

Centering recognizes that prenatal care is more than measuring weight and blood pressure and focusing on birth outcomes. Pregnancy is a time of intense self-reflection. Sometimes, doubts can surface about one's ability to deal with labor and develop a healthy relationship with the baby. As the group model of care evolved in response to the challenges for meaningful prenatal care, it was clear that certain components were essential to the model. All providers are trained in these Essential Elements (Table 2) that contribute to success with this model and foster relationship-centered care (Rising et al., 2004).

Providing Relationship-Centered Care Nurturing Self-Growth and Relationships Among Patients and Families

CenteringPregnancy provides many opportunities for nurturing individual growth and the relationships among women and their family members. First, it empowers women by valuing the knowledge and experience each woman brings to the circle, and increases this knowledge through skills building and education. Women are thus better able to take control of their bodies, their pregnancies, and their families. They gain confidence to conduct self-assessments, make decisions about all aspects of care, devise solutions to problems, validate and support each other in this process, and take responsibility for their own health during pregnancy and beyond. They are more confident and assured in their labors.

Second, Centering promotes the development of a social network of pregnant women for information and emotional support. In this exciting time of growth and development, sharing with other women provides support and confirmation. Respect and trust in the group are essential and provide foundations for strong relationships after the group has ended. Women who participated in CenteringPregnancy groups received more support from their significant others than did those receiving individual prenatal care (Baldwin, in press). In other samples, women with more social support and less stress were less likely to experience pregnancy complications, postpartum depression, and adverse neonatal outcomes (Beck et al., 1997; Goldenberg & Rouse, 1998; Rice & Slater, 1997; Sadur et al., 1999; Taylor, Davis, & Kemper, 1997). Prenatal social support has been associated with improved fetal growth and greater infant birthweight (Feldman, Dunkel-Schetter, Sandman, & Wadhwa, 2000; Rickheim, Weaver, Flader, & Kendall, 2002).

Third, family members are more actively engaged in Centering care than in the traditional individual care model. Partners and family members have the opportunity to be included in all aspects of prenatal care and to build relationships with providers and other expectant families. The group structure creates a relaxed, friendly, comfortable environment that promotes clear, open communication and respect. Having a chance to observe and get to know other pregnant women helps to normalize the

experience of family members who may not understand the changes that accompany pregnancy for most women (e.g., it is not just my wife who appears overly emotional). Group care provides a strong message that building healthy families must include more than the mother alone.

Building Trusted Relationships Between Patients and Prenatal Care Providers

Centering provides 20 hours to develop relationships between patients and providers, compared to the typical 1.5 hours delivered in interrupted 15-minute blocks in individual appointments. More important than the amount of time is the quality of the time together and the associated nurturing and support. The structural innovation of group care permits more time for provider-patient interaction and more opportunity to address clinical as well as psychological, social, and behavioral factors to promote healthy pregnancy. In CenteringPregnancy, groups start and end on time, so that patients don't think that their time is wasted by long waits. Instead, their time is spent communicating and building trust between patients and providers.

Centering reduces the paternalism so ingrained in our health care system and strengthens the provider-patient relationship by making them partners in care. Relationships between and among health care providers and the women in the group are founded on the belief that each brings mutual knowledge and power to the relationship. The group reduces the power differential between a woman and her health care providers, creating a more balanced relationship. Women have an opportunity to read their charts and to question terminology or laboratory results they may not understand. There is time to discuss fully the pros and cons of specific treatments, tests, and behaviors; each woman is then encouraged to make her own decision based on the information she has obtained. This shift may be an uncomfortable one as both provider and woman adjust. Trust of one another is required to respect individual points of view.

Promoting Professional Development Among Prenatal Care Providers

CenteringPregnancy promotes professional development by energizing health care providers who may be feeling burned out by traditional care. For the midwife, nurse, or obstetrician who is tired of discussing nutrition superficially again and again during the day (e.g., are you getting enough milk?), the group format provides time for an extended discussion with others in the group actively contributing. Providing care for women in groups also enhances a provider's assessment skills. Each group is different and each session is different, bringing new challenges and surprises for the leader. Health care providers must be active learners about their patients and the communities in which they live.

The facilitation process in CenteringPregnancy provides immediate access to in-depth understanding of the community and cultural norms of their patients. This is

TABLE 2***Correspondence of CenteringPregnancy Elements With the IOM's Rules for Health Care Redesign***

<i>IOM's Rules for Health Care Redesign</i>	<i>Essential Elements of CenteringPregnancy</i>	<i>Comments from CenteringPregnancy Providers and Participants^a</i>
Care is based on continuous healing relationships	Continuity and stability of group leadership Group composition stable but not rigid Facilitative leadership	"The other women in the group became another group of friends for me." "I'd say the community building has been the most satisfying thing to see among patients and it has been the most satisfying thing for me, personally, because you become included in that community as well."(Provider)
Care is customized according to patient needs and values	Session planned but emphasis varies with group needs Facilitative leadership Opportunity for socialization provided	"I'm learning that it doesn't matter what the group doesn't talk about because we're talking about what matters to the group."(Provider) "I'm so happy to be here in this group. I feel so comfortable, and it feels so good that everyone here speaks Spanish. I have felt so alone in this country" "I felt like I was in a family." "We are all on the same path doing it together."
The patient is the source of control	Women are involved in self-care activities Facilitative leadership	"I really liked checking my blood pressure, it's a great way of learning." "They [providers] didn't just give you medicine and not tell you what was wrong. Even if they tried to do that you had a chart there that told you what was wrong."
Knowledge is shared and information flows freely	Sessions planned but emphasis varies with group needs Facilitative leadership Group conducted in a circle	"You feel trust and you lose your embarrassment, because you speak your problems out loud and as they say, 'a bunch of brains think better than one.' "The group helped us so much ... others had the same concerns we had. Our discussions didn't follow the agenda ... we solved our own problems."
Decision making is evidence based	Ongoing evaluation of outcomes	"Centering will only move forward as a widely accepted model if empirical data document positive outcomes." (Administrator) "The women treasured what they learned, went home and taught their friends, and some now want to be nurses."(Provider)
Safety is a system property	Women are involved in self-care activities Group conducted in a circle Continuity and stability of group leadership Involvement of family support people is optional	"Although it was a group it seemed more intimate, more time was spent on specific issues that I'm not sure would have been brought up or discussed with a provider in a 10 minute session." "In the group you have the same two people check you every time. You know your care is being watched."
Transparency is necessary	Women are involved in self-care activities Ongoing evaluation of outcomes Group conducted in a circle	"We watched each other grow; everybody loved it. 'Oh, you're a lot bigger this week!'" "I liked how we were going through the same issues and discussed different methods or ways we approach them."

(continued)

TABLE 2 (CONTINUED)*Correspondence of CenteringPregnancy Elements With the IOM's Rules for Health Care Redesign*

<i>IOM's Rules for Health Care Redesign</i>	<i>Essential Elements of CenteringPregnancy</i>	<i>Comments from CenteringPregnancy Providers and Participants^a</i>
Needs are anticipated	Facilitative leadership Sessions planned but emphasis varies with group needs	"People would come to the group tired, anxious, worried and every single time, without fail, everyone left happy, laughing, lighter."
Waste is continuously decreased	Health assessment occurs within group space Continuity and stability of group leadership	"We came at the same time and left at the same time and something was happening the whole time we were there." "I enjoy the freedom, creativity, and common sense inherent in the Centering model of care. I feel like I've done meaningful and satisfying work after every group, that maybe I'm participating in something with a lasting impact."(Provider)
Cooperation among clinicians is a priority	Nonhierarchic cooperation between service providers	"We're able to do some preventive medicine ... it is impossible to present all of that content to women individually."(Physical therapist)

^aQuotes are from group evaluation data and pilot studies.

Note. IOM = Institute of Medicine.

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especially the case when the provider is not of the same cultural background as the patients, and is less familiar with beliefs and behaviors common in pregnancy for a particular cultural group. Facilitation allows patients to express their beliefs in ways that would be unlikely to surface during traditional care. Through this professional growth, the provider gains a deeper understanding and is better able to provide appropriate care.

Revolutionizing Health Care Design

CenteringPregnancy not only has a powerful effect on the women who participate but also provides benefits for the system. A scheduling pattern that provides for 8 to 12 women to receive their prenatal visits in a 2-hour time frame should be cost efficient, and cost comparisons are in progress. The group uses conference room space, freeing up examination room areas for other patients. In addition, because the model provides for extensive education, women may make fewer phone calls and emergency visits, and have greater confidence in labor and newborn care (Rising, 1998).

This is a revolutionary way to provide health care that energizes providers, is embraced by childbearing women, and benefits the system.

Furthermore, CenteringPregnancy responds directly to the challenges put forth in the recent Institute of Medicine (IOM) report *Crossing the Quality Chasm: A New Health Care for the 21st Century* (IOM, 2001). The IOM panel formulated a set of 10 general principles to guide redesign of the health system. CenteringPregnancy incorporates all these principles in its group care model and provides essential training to health care providers to meet these objectives (Table 2).

Through participation in CenteringPregnancy, women learn to advocate for themselves, their families, and their communities. For example, a woman may gain power through her active participation in prenatal care and the birth experience. This power may be extended as she supervises health care for her children, by asking questions about treatments, practicing healthy behaviors, and creating a safe environment for her family. These behaviors hold potential to influence her health and that of her family, now and in the future. In turn, it can strengthen the communities in which they live and work. Some health care sites have used the model as an opportunity to partner with community-based organizations, linking women to social services and more importantly integrating women more fully into their communities—to serve.

CenteringPregnancy may also have implications for design of sustainable prenatal services that reduce racial disparities in perinatal outcomes. Reducing the risks for low birthweight and preterm delivery is particularly important for African American women (Centers for Disease Control and Prevention, 1999; Iyasu, Tomashek, & Barfield, 2002).

Preterm birth and low birthweight account for the majority of neonatal and infant deaths as well as nearly half of all cases of neurologic disability, result in prolonged hospitalization including use of the neonatal intensive-care unit, and may have lifelong adverse consequences (Bernstein, Horbar, Badger, Ohlsson, & Golan, 2000). Milligan et al. (2002) explored barriers and motivators to prenatal care and suggested system changes that might attract and retain underserved populations to prenatal care. Focal points for change included the need for a hospitable and comfortable environment for prenatal care, inclusion of the baby's father in every aspect of prenatal care, and clear, nonjudgmental communication between providers and patients. Group care meets these criteria. If prenatal care provides a window of opportunity for health promotion and risk reduction, then group prenatal care may be a useful tool in the reduction of adverse perinatal outcomes and racial/ethnic disparities.

Centering Pregnancy: Evaluation to Date

Reducing Low Birthweight

A prospective matched cohort study was conducted at Yale and Emory Universities to examine the impact of CenteringPregnancy group versus individual prenatal care on birthweight and gestational age (Ickovics et al., 2003). The study included pregnant women ($N = 458$) entering prenatal care lesser than or equal to 24 weeks; one-half received group prenatal care with women of same gestational age. Women were matched by clinic, age, race, parity, and infant birth date. Women were predominantly Black and Hispanic of low socioeconomic status, served by one of three public clinics in New Haven, Connecticut, or Atlanta, Georgia. Birthweight was higher for infants of women in group versus individual prenatal care ($p < .01$) (Table 3).

Overall, group prenatal care resulted in lengthened gestation, which in turn resulted in higher birthweight. Preterm infants of mothers who obtained group prenatal care were of nearly "normal" birthweight (greater than or equal to 2500 g) (Figure 1). Group prenatal care also appeared to protect against *early* preterm delivery, low and very low birthweight, and neonatal mortality, although these results should be interpreted with caution due to the small number of these negative outcomes. However, even modest reductions in these rare events can be important, given the high rates of medical complications and associated costs of intensive medical care for preterm infants (Buescher, Roth, Williams, & Goforth, 1991).

Further research is needed to identify the precise mechanism(s) by which group prenatal care may have its salutary effects. The positive effects may be due to the content and intensiveness of prenatal care received in the group context. More time together with providers results in a better understanding of the physiology of a healthy pregnancy, more knowledge and skills, and more health-promoting behaviors and fewer health-damaging behaviors. For example, group patients likely spent substantially more time discussing the importance of adequate nutrition during pregnancy, which may have resulted in better weight gain and the choice of more nutritious foods, thus increasing infant birthweight (Hickey, 2000). Group care may have promoted changes in social norms to reduce high-risk behaviors during pregnancy (e.g., smoking cessation). Another potential mechanism is that group prenatal care patients mobilized more support and felt better prepared for labor, thus reducing stress that contributes to preterm birth (Dunkel-Schetter, Gurung, Lobel, & Wadhwa, 2001).

These results have been replicated in part by Grady and Bloom (2004), who compared birth outcomes from 124 teenagers who received group prenatal care to birth outcomes of all other teenagers who received individual

TABLE 3
Birth Outcomes Stratified by Treatment Group (Ickovics et al., 2003)

	Centering Group Prenatal Care (n = 229)	Individual Prenatal Care (n = 229)	p
Birthweight (g) M (SD)	3,228.2 (540.1)	3,159.1 (640.7)	<.01
Preterm n (%)	21 (9.2)	22 (9.6)	.83
Early (<33 week)	2 (0.9)	7 (3.1)	
Late (33-36.9 week)	19 (8.3)	15 (6.5)	
Low birthweight (<2500 g) n (%)	16 (7.0)	23 (10.0)	.38
Very low birthweight (<1500 g) n (%)	3 (1.3)	6 (2.6)	N/A ^a
Neonatal deaths n (%)	0 (0)	3 (1.3)	N/A ^a

Note. N/A = not applicable.

^aCell sizes too small to permit statistical testing.

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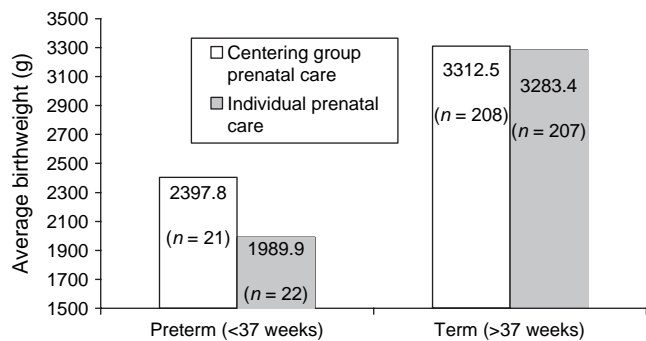


FIGURE 1
Average birthweight for preterm and term infants, stratified by group versus individual prenatal care.
Reprinted with permission from Ickovics et al, *Obstetrics & Gynecology*, 2003, 102 (5 part 1): 1051-1057, Ickovics, J., Kershaw, T., Westdahl, C., Rising, S.S, Klima, C., Reynolds, H., et al. Group prenatal care and preterm birth weight: results from a matched cohort study at public clinics.

prenatal care and delivered at the same St. Louis hospital in 1998 ($n = 233$) and 2001 ($n = 155$) (Table 4). The babies of teenage mothers who received Centering group prenatal care were significantly less likely to be preterm and low birthweight (less than 2500 g).

Patient Satisfaction and Attendance

CenteringPregnancy offers prenatal care that is well attended and well liked. Using a prospective randomized controlled trial following young women ages 14 to 25 from early pregnancy through 1 year postpartum, women entering prenatal care at large hospital-based public clinics in two U.S. cities were randomly assigned to group or individual prenatal care. Women randomly assigned to group care had greater overall satisfaction with prenatal care than those who received individual care ($F = 34.90$, $p < .001$).

Attendance at prenatal care was extremely high (76%, compared to clinic norms of 50%-60%). In St. Louis, Grady found that 79% of teenager mothers in Centering groups had identified a specific pediatric care provider prior to hospital discharge, compared to only 52% among those in individual care. Furthermore, 46% of group patients had initiated breastfeeding, compared to only 28% of those in individual care (Grady & Bloom, 2004).

Ongoing Evaluation Efforts

We are currently conducting a randomized controlled trial to examine the impact of Centering group prenatal care versus individual prenatal care among young women aged 14 to 25 in New Haven, Connecticut, and Atlanta, Georgia ($N = 1047$) (National Institute of Mental Health, R01MH/HD61175). A randomized controlled trial will permit the most unbiased estimates of effects of group prenatal care on perinatal risks as well as other reproductive health outcomes. More detailed measures will enable us to better understand how social and clinical factors translate into the biological mechanisms that can affect pregnancy outcomes. Enrollment was completed in April 2004; women and their babies will be followed for 1 year postpartum.

We hypothesize that Centering group care will reduce negative birth outcomes, enhance reproductive health (reduce risk for HIV/STDS and repeat pregnancy), change health and sexual risk behavior over time, and increase psychological well-being during and after pregnancy. Because women of all ages make numerous behavioral changes during pregnancy (e.g., improve diet; reduce/eliminate tobacco, alcohol, and illicit drug use), we believe that pregnancy may also present an important window of opportunity to promote more health-enhancing behaviors and reduce health-damaging behaviors.

Research on CenteringPregnancy has increased in the past years. Doctoral dissertations, pilot studies, and grant

TABLE 4
Demographic Characteristics and Outcomes of the Centering and Two Comparison Groups

	Centering (n = 124)	2001 Comparison Group (n = 144)	1998 Comparison Group (n = 233)
Age M (SD)	15.85 (1.2)	16.5 (0.9)*	16.3 (1.2)*
Race			
African American (%)	116 (93.6)	130 (90.3)	198 (85.0)*
Caucasian (%)	6 (6.3)	13 (9.0)	35 (15.0)*
Other (%)	1 (1.0)	1 (0.7)	0 (0.0)
Preterm deliveries <37 wk (%)	13 (10.5)	37 (25.7)**	54 (23.2)*
Low birthweight <2500 g (%)	11 (8.87)	33 (22.9)**	42 (18.3)*
Cesarean births (%)	17 (13.7)	21 (14.6)	37 (15.9)

* $p < .05$ compared to Centering group. ** $p < .02$ compared to Centering group.

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applications are currently underway at multiple sites including, but not limited to, New York, California, Illinois, Michigan, and Maryland. Many of these new studies are focusing on the role of social support and community building as a mechanism by which CenteringPregnancy may result in better birth outcomes.

Implications for Nursing Practice: Sustainability, Replication, and Dissemination

One of the greatest strengths of group prenatal care is its potential sustainability. The goal of prevention science is to improve prevention practice (Altman, 1995; Wandersman et al., 1998). Because prenatal care is reimbursable by public and private insurance, group prenatal care could be adopted and sustained in diverse health care settings. There is continued interest in establishing CenteringPregnancy at many domestic sites across the country, as well as interest from the international community. In the past 2 years, 49 training workshops have been conducted in 27 states and in two foreign countries.

The clinical interest in CenteringPregnancy reflects the intuitive appeal of the model to many nurses, midwives, and other health care providers, who understand that CenteringPregnancy can provide sustainable relationship-centered care. Those who have conducted CenteringPregnancy groups have found their clinical practice transformed. Providing care in the group setting has reduced time pressure by seeing patients more efficiently and enhanced the rewards of prenatal care by adding the opportunity to provide greater depth and scope of services. CenteringPregnancy is also being used as a model for education and training of future midwives, nurses, and doctors. As with established providers, this model provides the students much more time and much better quality time with patients.

Equally important is the continued research and evaluation of CenteringPregnancy. It will be important to replicate initial findings regarding improvements in birth-weight, gestational age, patient satisfaction, attendance, breastfeeding initiation, and other outcomes. Furthermore, it will be important to understand the mechanisms—social, psychological, and biological—by which CenteringPregnancy may have its salutary effects.

With a strong evidence base, CenteringPregnancy could be used as a best practices model, which would require major changes in perception and practice of prenatal care. Disseminating innovations in health care is challenging but ultimately rewarding (Berwick, 2003). The rewards of broader dissemination of CenteringPregnancy would include major advances in relationship-centered care: strengthening bonds between health care providers and their patients, nurturing supportive relationships among patients and between patients and their family members, deepening understanding of the skills and knowledge that different health care providers bring to the care setting,

and providing institutional changes that can result in greater patient satisfaction and ultimately better health outcomes for women and their families.

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