

A Randomized Control Trial of Continuous Support in Labor by a Lay Doula

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Objective: To compare labor outcomes in women accompanied by an additional support person (doula group) with outcomes in women who did not have this additional support person (control group).

Design: Randomized controlled trial.

Setting: A women's ambulatory care center at a tertiary perinatal care hospital in New Jersey.

Patients/participants: Six hundred nulliparous women carrying a singleton pregnancy who had a low-risk pregnancy at the time of enrollment and were able to identify a female friend or family member willing to act as their lay doula.

Interventions: The doula group was taught traditional doula supportive techniques in two 2-hour sessions.

Main Outcome Measures: Length of labor, type of delivery, type and timing of analgesia/anesthesia, and Apgar scores.

Results: Significantly shorter length of labor in the doula group, greater cervical dilation at the time of epidural anesthesia, and higher Apgar scores at both 1 and 5 minutes. Differences did not reach statistical significance in type of analgesia/anesthesia or cesarean delivery despite a trend toward lower cesarean delivery rates in the doula group.

Conclusion: Providing low-income pregnant women with the option to choose a female friend who has received lay doula training and will act as doula during labor, along with other family members, shortens the labor process. *JOGNN*, 35, 456-464; 2006. DOI: 10.1111/J.1552-6909.2006.00067.x

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Introduction

The beneficial effects of the supportive care of women in labor by another woman have been demonstrated and replicated by researchers over the past several decades. Meta-analyses of randomized clinical trials have demonstrated that women who have continuous support during labor have a reduction in the Cesarean delivery rate, length of labor, the need for analgesia, operative vaginal delivery, and 5-minute Apgar scores less than 7 (Hodnett, Gates, Hofmeyr, & Sakala, 2005; Scott, Berkowitz, & Klaus, 1999; Zhang, Bernasko, Leybovich, Fahs, & Hatch, 1996). Though the providers of support in these trials have varied from health care professionals to lay family members, the care provided is often modeled after the concept of a "doula," a word of Greek origin that roughly translates as a "woman caregiver." A doula is not a physician, nurse, or midwife; she does not provide any medical interventions in the labor room nor does she supplant the role of the male partner or other family members who may also be in attendance. However, she does provide continuous uninterrupted emotional and physical support throughout labor. This continuity of care, provision of human presence, and social support is unique to the role of the doula and sets her apart from any other model of support for the laboring woman (Gilliland, 2002; Hunter, 2002).

Most women in the United States are accompanied in labor by their spouse or male partner, and women value their partner's presence as extremely important and helpful (Klaus, Kennell, Robertson, & Sosa,

1986). The role of the female companion has been and is an additional support to the laboring couple. Her role is not to replace or usurp the father's role in the birth process. Research indicates that male partners and female companions provide different types of support to laboring women (Bertsch, Nagashima-Whalen, Dykeman, Kennell, & McGrath, 1990). Independent observers found that in the couples where a doula was present, the male partners were noted to be more affectionate and tender toward their partner when compared to couples who did not have a doula.

The services and benefits of a doula are not universally available to women in the United States. Gordon et al. (1999) noted that it was time to reassess what effect a labor companion may have on improving perinatal outcomes since the advances in technology have failed in that aspect. Occasionally, doula programs are available through hospital-based programs or through community service agencies. However, health care systems that serve low-income women may not have hospital-based programs in place through which the women they serve can receive continuous support in labor by a doula. It is the authors' opinion that developing and maintaining such a program may be costly and problematic for a health care agency in terms of a bottom line cost-benefit analysis.

The services of professional doulas are available in many parts of the country. The cost of the services of a professional doula in the authors' tristate region ranges from approximately \$300 to \$1800. Although grant funded programs may exist that offer subsidization of fees for doulas, in most cases doula services are paid for directly by the woman. The majority of underinsured low-income women cannot afford these services.

In previously reported investigations of continuous support in labor, the person providing the support was usually someone with a health care background (nurse, midwives, student midwives) or someone who had received training as a doula. A friend or family member of the parturient has not traditionally carried out the role of provider of continuous support in labor. Prior to the report by Madi, Sandall, Bennett, and MacLeod (1999), there had been no randomized controlled trial of continuous support in labor provided by a female friend or family member of the mother.

The current study was designed with the benefits of continuous labor support in mind as well as the need for a cost-effective affordable program to provide those services for low-income women.

Review of the Literature

Physiological Benefits of Labor Support

The physiological benefits on the outcome of support during labor (by a doula) are most likely derived from the role of catecholamines. The human response to stress has

been documented as the flight-or-fight response expressed through the sympathetic nervous system by production of epinephrine and norepinephrine (Cannon, 1932; Taylor et al., 2000). The opposite of this is the parasympathetic system regulated by the hormone oxytocin and endorphins (Klaus, Kennell, & Klaus, 2002; Lieberman, 1992; Simpkin & Ancheta, 2000). Endogenous catecholamines (epinephrine, norepinephrine, and dopamine) are released when a woman experiences pain, anxiety, and fear during labor (stress). The smooth muscle cells of the uterus contain both alpha and beta adrenergic receptors. Stimulation of alpha receptors result in uterine contraction, while stimulation of beta receptors cause the uterine muscle to relax (Lipshitz, Pierce, & Arntz, 1993). Epinephrine's predominant effect on uterine activity is through stimulation of these beta adrenergic receptors, with a resultant decrease in uterine activity (Klaus et al., 1986; Zuspan, Cibilis, & Pose, 1962). Norepinephrine is linked to alpha adrenergic receptor stimulation in uterine muscle resulting in increased contractility. By infusing various concentrations of both epinephrine and norepinephrine into gravid women who were either in "advanced prelabor" or spontaneous labor, Zuspan et al. (1962) were able to demonstrate this uterotonic effect of norepinephrine and tocolytic effect of epinephrine.

While it is clear that both norepinephrine and epinephrine increase as a result of the pain, anxiety, and physical exertion of labor, each neurotransmitter may be influenced by different factors (Dimsdale & Moss, 1980). By sampling subjects during periods of both physical activity and psychological stress, Dimsdale and Moss were able to demonstrate that while norepinephrine levels rose more dramatically during physical activity and less so during psychological stress, epinephrine levels rose significantly higher during periods of anxiety and less so during physical activity.

Further support of the relationship between epinephrine, emotional stress during labor, and its influence on labor progress is reported in work by Lederman, Lederman, Work, and McCann (1985). Plasma epinephrine and norepinephrine levels as well as self-reported anxiety and observed stress levels were collected from a group of 73 women at several points during labor. There was a positive correlation in phase 1 of labor (3-6 cm dilatation) between epinephrine levels and the level of stress, anxiety, and duration of labor; a negative correlation was seen between epinephrine levels and uterine activity as measured by Montevideo units (Lederman et al., 1985).

Both animal and human research has demonstrated that catecholamine levels increase during labor and that these rising levels reduce blood flow to the uterus and placenta and are associated with a decrease in uterine contractions, slower dilation rates, and longer labors (Adamsons, Mueller-Heubach, & Myers, 1971; Barton, Killam, & Meschia, 1974; Lederman et al., 1985; Lieberman, 1992;

Myers, 1975; Simpkin & Ancheta, 2000; Wuitchik, Bakal, & Lipshitz, 1989; Zuspan et al., 1962). The role of the doula or trained female companion is to soothe, praise, and encourage the laboring woman continuously allowing her to feel more self-assured, confident, and less fearful. Support during labor reduces the incidence of abnormally long labor patterns and improves neonatal well-being (Cogan & Spinnato, 1988; Klaus et al., 2002; Simpkin, 1986) and reduces the amount of hospitalized labor time (Hemminki et al., 1990). All of this research suggests that one of the primary positive effects of female companionship during labor is its influence on the cycle of maternal anxiety, catecholamine levels, and the progress of labor.

Researchers have recently hypothesized that the female response to stress is more “tend and befriend” than the classic flight-or-fight response. The female response is characterized by “tending” to offspring and protecting them from harm and “befriending” by affiliating with other females to manage stressful conditions (Taylor et al., 2000). Taylor et al. (2000) proposed that previous animal and human studies suggest that oxytocin and endogenous opioids may be the basis for this gender specific response to stress. Massage, stroking, and support provided by the doula (who is female) meets the pregnant woman’s need to befriend during this highly emotionally charged time of childbirth. The doula encourages the woman to relax, which reduces her stress response resulting in an increase in the release of oxytocin. This release strengthens the uterine contraction, improves the pattern of labor, and potentially decreases the total length of labor (Klaus et al., 2002). These studies contribute to the scientific rationale that female support in labor may result in improved obstetric outcomes.

Trials of Labor Support

The influence of supportive care during labor has had the benefit of investigation by a number of randomized clinical trials beginning in 1980. The studies have taken place in the United States, Europe, and in developing countries. Zhang et al. (1996) published the 1st meta-analysis of the then available five randomized clinical trials evaluating the effect of continuous labor support among primiparous women. Four of those five studies involved underinsured low-income women with otherwise uncomplicated pregnancies who delivered in hospitals that did not allow any companions in the labor room with the mother and were randomized to either a group who were accompanied by a labor attendant for most or all of her labor or to a control group whose members received “routine intrapartum care” (Hofmeyr, Nikodem, Wolman, Chalmers, & Kramer, 1991; Kennell, Klaus, McGrath, Robertson, & Hinkley, 1991; Klaus et al., 1986; Sosa, Kennell, Klaus, Robertson, & Urrutia, 1980). The training of the labor attendants was inconsistent, ranging from

being what the authors described as “well trained” to having no training. It was on the basis of those four studies that the authors noted continuous support by the labor attendant significantly shortened labor duration, doubled the rate of spontaneous vaginal birth, and reduced by half the rate of Cesarean delivery, forceps delivery, and oxytocin use (Zhang et al.).

An updated review of Caregiver Support for Women During Childbirth in 2005 (Hodnett et al., 2005). This review included published results from 15 randomized trials comparing continuous support during labor with usual care. The studies took place between 1986 and 2002 and involved over 12,000 women. Labor support in these trials was provided by a variety of individuals including student midwives, hospital employees, and lay women with and without training. Of note is one trial (Madi et al., 1999) in which the support was provided by an untrained close female relative. Madi et al. reported significance at a $p < .05$ for the following results: fewer cesarean sections (6% vs. 13%), less intrapartum analgesia (53% vs. 73%), and less use of synthetic oxytocin (13% vs. 30%) in the experimental group with female labor support (Madi et al.). Actual percentages noted in the other 14 studies vary, but overall continuous support in labor was associated with a reduced likelihood of cesarean birth, operative vaginal birth, regional anesthesia/analgesia, and receipt of any anesthesia/analgesia (Hodnett et al.).

In six of the 15 trials in the *Cochrane Database Review*, no additional support people or family members other than the person associated with the study were allowed to accompany the laboring woman. The positive effects of continuous support in labor were more robust in these settings where no other support person was allowed to attend the mother (Bréart et al., 1992; Hofmeyr et al., 1991; Kennell et al., 1991; Klaus et al., 1986; Langer, Campero, Garcia, & Reynoso, 1998; Madi et al., 1999).

The Listening to Mothers Survey (Sakala, Declercq, & Corry, 2002) states, “Although doulas and midwives were the best rated sources of supportive care in labor, they were the least-used sources of supportive care (5% and 11% respectively).” Early research had demonstrated a reduction in the cesarean delivery rate with the presence of a doula; yet, continuous support during labor by a registered nurse did not reduce the rate of cesarean delivery (Hodnett et al., 2002). This might have been due, as Sauls argues, to the benefits of support being “overpowered by the effects of birth environments characterized by high rates of routine medical interventions ... the technological, surveillance, and administrative aspects of nurses’ jobs leave little time for supportive care” (Sauls, 2002, p. 739). Coffman and Ray (2002) noted that even when there is supportive care by nurses, there is a difference between professional and personal support. They identify a goal of nursing as embracing and encouraging the parturient’s

natural support network especially during critical times, such as childbirth.

The objective of this study was to compare labor outcomes in nulliparous women accompanied by a personally chosen, additional support person (doula group) with outcomes in nulliparous women who received standard care (control group). The specific outcomes selected for this study were as follows: Length of labor defined as the time from the onset of regular contractions (either witnessed by the nurse or as reported by the patient to the nurse at the time of admission) to the delivery of the neonate and documented on the medical record as the length of the 1st stage of labor plus the length of the 2nd stage of labor; type of delivery as either spontaneous vaginal, forceps, vacuum assisted, or cesarean; type and timing of analgesia/anesthesia as either nonnarcotic, narcotic, epidural, or spinal; and Apgar scores at 1 and 5 minutes.

Methods

Design

This study was conducted using a randomized controlled design. It was approved by the Institutional Review Board of the hospital where the study took place. Neither the labor room staff nor the participant's caregivers were blinded to group assignment.

Setting

The setting for the study was a women's ambulatory care center located at a tertiary perinatal care hospital in New Jersey. Enrollment took place between 1998 and 2002 when approximately 1,000 underinsured low-income women received comprehensive prenatal care annually at the center. Certified nurse-midwives, nurse practitioners, and resident physicians provided obstetric care.

Procedures

The eligibility criteria were as follows: nulliparous, singleton pregnancy, low-risk pregnancy at the time of enrollment in the study, and able to identify a female friend or family member willing to act as their lay doula. Women with a contraindication to labor (e.g., placenta previa, planned cesarean delivery) were excluded from the study. Study subjects were recruited by the research assistant. The purpose of the study was explained to her and her written consent for participation was obtained. As part of the consent process, all study participants were told that this support person would be with her in labor along with any other support people the mother chose. It was stressed that the doula did not alter or substitute for any other person she had planned on being with her during her labor and birth process. The study hospital allowed laboring women to have multiple people in the birthing room. Some early studies restricted support from a friend or

family member and had women laboring alone if they were randomized to the control group (Klaus et al., 1986; Sosa et al., 1980). This study did not restrict other support for participants in the control group. Participants were prospectively, randomly assigned to either the doula (experimental) group or a control group. A computer generated randomization scheme was utilized. Papers identifying the group assignment were folded and placed in opaque envelopes. After obtaining consent, the research assistant opened the randomization envelope that held the participant's group assignment.

The study facility offered childbirth preparation classes to all clients in the form of a series that met weekly for 5 weeks and were attended primarily by married couples. Although offered free of charge to the clients of the ambulatory care center, historically this population of women rarely attended. This knowledge was kept in mind when developing the procedure for teaching the traditional doula supportive techniques to the parturients and their female companions in the doula group.

Lay doula core curriculum consisted of continual presence, knowledge of anatomic and physical changes, and skills in listening, anticipatory guidance, comfort measures, and coping strategies.

All teaching for the study participants was conducted by the research assistant who was a doula certified by Doulas of North America. She met with from one to two pairs of pregnant women and their doulas at each of the two 2-hour sessions. These sessions were semistructured and took place in a variety of locations from a hospital classroom, to a home, to a local diner. The training was done wherever the parturient desired in hopes of improving compliance with attendance. The curriculum for the program consisted of the following topics: discussions of a pregnant woman's anatomy and physical changes during childbirth, methods to use to assess the mother's progress in labor, as well as coping strategies during labor. In addition the doulas were taught how to provide anticipatory guidance and comfort measures as well as praise and reassurance to their partners. Regardless of where the training took place, the content was consistent for each class. The doulas received printed material to keep as a reference on the following subjects: comfort suggestions, body positions and movements for labor and birth, a skill sheet on listening, and a guide for assisting and supporting during the 1st and 2nd stage of labor.

After enrollment, members of the control group had no further interaction with any member of the study team. Outcome data were extracted by the authors from hospital records after delivery.

Sample

A convenience sample consisted of 600 subjects (300 in the doula group and 300 in the control group). The sample size was calculated on the hospital's primary cesarean delivery rate of 18%, with an alpha of .05 and 80% power. A total of 586 women completed the study (76% power). Twelve women were lost to data collection as they delivered at a different facility (7 in the doula group, 5 in the control group), and 2 participants in the doula group withdrew their consent. The demographic characteristics of the participants are described in Table 1. In general, the groups were non-Hispanic, White females in their early twenties.

Analysis

Data were analyzed using frequency distributions, *t* tests, and Cochran-Mantel-Haenszel statistics to identify differences between the two groups.

Results

Descriptive and outcome data were collected from the intrapartum period by a retrospective hospital record review. The intent to treat analysis of the 586 participants revealed that the doula group had statistically shorter total

lengths of labor, more cervical dilatation at the time of epidural analgesia/anesthesia, and higher Apgar Scores at 1 and 5 minutes. These results are described in Table 2. No significance was noted between the groups in the Cesarean delivery rate, length of the 2nd stage of labor, or epidural rate. Neonatal birthweights were analyzed to ensure that potential differences in the total length of labor or length of the 2nd stage of labor were not influenced by discordant birthweights in the two groups. (No significance noted with the doula group birthweight 3,341 g [\pm 546] and 3,302 g [\pm 553] in the control group.)

An additional analysis of 530 subjects was performed on participants who maintained eligibility for the study based on the inclusion criteria. A total of 56 were excluded from this analysis: 44 from the doula group and 12 from the control group. In the doula group, the reasons for exclusion included those who had incomplete doula training (18 did not attend the two sessions), and 10 who did not have their doula with them during the labor and birth. In the control group, three participants were inappropriately enrolled in a conflicting intrapartum study in which type of delivery was an independent variable. The remaining 25 exclusions included women from both groups who experienced either preterm birth, a medical complication making them a patient at high risk, or had a scheduled cesarean birth due to a breech presentation.

All outcome variables that were significantly different between the doula and the control group in the intent to treat analysis remained significantly different in this secondary analysis. The cesarean delivery rate in the doula group was 10.6% and in the control group was 15.5% ($p = .09$). The primary cesarean delivery rate for the study facility during the enrollment period averaged 17.9%.

Discussion

The beneficial findings of a shorter labor and improved neonatal Apgar scores demonstrated in this study are similar to those found in all the randomized trials of doula support in labor. The women in this study, who were accompanied in labor by a female friend who had focused education on labor support techniques, received measurable beneficial effects from the support, specifically significantly shorter labors (time greater than 1 hour), and higher 1- and 5-minute Apgar scores.

Women who received continuous support in labor by a female support person trained as a lay doula had significantly shorter labors.

TABLE 1
Participant Characteristics^a

| Demographic Descriptor | Doula Group (N = 298) | Control Group (N = 300) |
|--|-----------------------|-------------------------|
| Race | | |
| White | 56% | 56% |
| Black | 36% | 29% |
| Indian | .4% | .6% |
| Chinese | .7% | 2% |
| Filipino | .4% | .6% |
| Other | 6.4% | 12% |
| Ethnicity | | |
| Hispanic | 18% | 21% |
| Non-Hispanic | 78% | 72% |
| Other | 4% | 7% |
| Age at delivery (mean), range: 14-40 years | 22.2 years | 22.6 years |

^aNo statistical significance noted in any category.

TABLE 2
Intent to Treat Analysis of Study Variables

| <i>Variable</i> | <i>Doula Group Possible (N = 291)</i> | <i>Control Group Possible (N = 295)</i> | <i>p Value</i> |
|--|---|---|----------------|
| Cesarean birth rate ^a | 18.9% | 17.9% | .7 |
| Length of labor (in hr ± SD) ^b (Vaginal deliveries only) | 10.4 ± 4.3 | 11.7 ± 4.8 | .004 |
| Length of 2nd stage ^b (in min ± SD) | 58 ± 51 | 64 ± 57 | 0.2 |
| Epidural rate ^a | 85% | 88% | .4 |
| Centimeters dilated at epidural ^b (in cm ± SD) | 4.3 ± 1.3 | 3.9 ± 1.2 | .007 |
| 1-min Apgar >6 ^a | 95% | 90% | .04 |
| 5-min Apgar >6 ^a | 99.7% | 97% | .006 |

^aChi-square (χ^2).
^bt Test.

Unlike many of the previous trials of continuous support, there was no difference in the rate of cesarean birth or rate of epidural anesthesia between the doula and control groups in this study, neither in the intent to treat analysis nor the additional analysis. A careful review of this outcome is warranted. As Hodnett et al. (2005) noted, the previous randomized trials that showed the most powerful influence on cesarean birth rates took place in institutions where family members were not allowed to be with laboring women, and the rates of medical intervention were low.

This study institution is a university affiliated teaching hospital that is a Level III regional perinatal center with an annual delivery rate of over 6,000 during the study years. There is continuous in-house coverage by maternal-fetal medicine specialists and anesthesia. The doula and the control group had a similar rate of continuous labor epidural management (85% and 88%, respectively) and pitocin augmentation (46% and 49%, respectively) as a medical intervention. This study supports the hypothesis that the effects of the birth environment typified by high rates of medical intervention have the ability to overpower the benefits of continuous support in labor (Hodnett et al., 2002).

There were no restrictive visitation policies in place during the study. The laboring woman could be accompanied by people of her choosing. A criticism of the study may be that the health care professionals were not blinded to the study group assignment. In the study institution, it would have been unusual for the laboring woman to be identified as a study participant, as the presence of an additional support person(s) was a common practice. We did not place visiting restrictions on the control group or limit support to a male partner only. Due to this practice, this

study was closer to being “blinded” than any previously reported studies where visitor restrictions clearly identified the control from the experimental group.

Required in the nursing section of the hospital record of our facility was to identify who was in attendance with the mother during labor and birth. Over 44% of the control group had between one and three female companions with them during labor and birth. The authors propose that these participants may have been enlightened as to the potential benefits of a female companion after the informed consent process and chose to seek out and bring a female companion with them after they were randomized to the control group. This may in part explain the lower rate of cesarean birth in both the experimental and control group when compared to the overall hospital rate during the study period and may bear clinical if not statistical significance for perinatal nursing practice.

It has become apparent that the type of person who provides the support during labor is important (Bowers, 2002; Coffman & Ray, 2002; Rosen, 2004). In the recent North American trial evaluating the effectiveness of nurses as providers of labor support, continuous support by highly trained nurses had no impact on the cesarean birth rate (Hodnett et al., 2002). Similarly, the most recent *Cochrane Database Review* found that if the provider of continuous support was a member of the facility’s staff, the effects of the support were less pronounced (Hodnett et al., 2005). In this study, where a woman of the mother’s choosing, sometimes a friend or sometimes a relative, provided continuous support, there was a measurable beneficial effect from the support in the length of labor and Apgar Scores. These results are similar to those found by Hodnett and Osborn’s (1989a, 1989b) early work and the two trials in Finland that failed to demonstrate a

difference in the cesarean birth rate but did report fewer labor interruptions or abnormally long labors (Hemminki et al., 1990).

Suggestions for Future Research

The influence of catecholamines and oxytocin on the labor process has been described previously. This study, along with earlier studies, has demonstrated the beneficial effect of a female companion on the labor process. That effect is presumed brought about by helping to control fear and anxiety in the laboring mother and thus lower the influence of catecholamines and increase the production of oxytocin. A future study measuring these hormone levels at selected times during labor in both a doula and a nondoula group would provide further support to this prevailing theory.

In this study, one certified doula provided all of the education to the female companion. Although this ensured consistency in content and teaching style, her unique style or personality may have influenced the study outcome. Replicating this study with several different doula trainers using a standard teaching plan may help eliminate this potential bias. Additional research is needed to study more diverse populations and to explore cultural variations in the comfort of receiving nonsexual touch and stroking to elicit relaxation.

Implications for Practice

In the majority of randomized trials evaluating continuous support in labor, the person providing the support was either a health care professional, had a health care background or had specific doula education and training. The cost of maintaining a cadre of such women who would be available to provide continuous labor support to a hospital's obstetric population would likely be prohibitive, and Rosen (2004) suggested that hospital affiliated support may not be the best approach. Additionally, the services of professional doulas may not be available in all geographic areas nor will low-income women likely be able to afford the fees for the services of a professional doula. Yet, there is consistent evidence of the benefits of having continuous support in labor.

This study has demonstrated that a relatively low-cost method of providing this support has a beneficial effect for a population of underinsured low-income women. Hospitals, prenatal centers, and childbirth educators should consider the potential benefits of providing a labor preparation program for pregnant women and female companions along with husbands or partners. In less than 4 hours of semistructured teaching, the selected female was provided with knowledge to serve as a lay doula and demonstrate a powerful positive impact on the labor of her friend.

The female friend who served as a doula demonstrated a powerful positive impact on the labor of her friend.

The process of selecting a female friend to accompany the pregnant woman and providing education to become a lay doula should be considered as the standard of care during the prenatal period. This could be offered in a variety of settings in addition to the traditional health care delivery systems. Community agencies, local and state departments of health, and parish nurses could all become involved with offering this information and providing doula education. The financial outlay for such a program would be minimal and could potentially become standard of care for the antepartum client.

Perinatal nurses have an enormous opportunity to improve the emotional and physical well-being of their pregnant clients as they prepare for the birth of their child. All health care personnel participating in prenatal and intrapartum care should be knowledgeable about the current state of the science regarding continuous support in labor. Information about the benefit of a female support friend should be dispensed at the 1st prenatal encounter and reinforced at each visit. The empowerment a prenatal program such as this could provide may be especially important for low-income women. A secondary study was done with this population to examine maternal perceptions of infant, self, and support from others by performing a follow-up telephone interview within 8 weeks postpartum. The benefits of continuous female support may continue past the actual process of birth.

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