
Alternative Strategy to Decrease Cesarean Section: Support by Doulas During Labor

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Abstract

This research was conducted in a public general hospital in Mexico City, Mexico. The objective was to evaluate efficacy of the support given by a doula during labor to reduce cesarean rate. From March 1997 to February 1998, a group of 100 pregnant women were studied. These women were at term, engaged in an active phase of labor, exhibited 3 cm. or more cervical dilatation, were nuliparous, had no previous uterine incision, and possessed adequate pelvises. The group was randomly divided into two subgroups comprising 50 women, each: The first subgroup had the support of a childbirth educator trained as a doula, while the second subgroup did not have doula support. Measurements were recorded on the duration of labor, the use of pitocin, and whether or not the birth was a vaginal birth or cesarean section. Characteristics and gestational age were similar in both groups. Results confirmed that support by doulas during labor was associated with a significant reduction in cesarean birth and pitocin administration. There was a trend toward shorter labors and less use of epidurals. The results of this study showed, as in other trials measuring the impact of a doula's presence during labor and birth, that doula support during labor is associated with positive outcomes that have physical, emotional, and economic implications.

Journal of Perinatal Education, 9(2), 8-13; labor support, doula support, childbirth.

Resumen

Este estudio fue conducido en un hospital general en la Ciudad de México. El objetivo era evaluar la eficacia del apoyo brindado por la doula durante el trabajo de

parto para reducir el índice de cesáreas. De Marzo de 1997 a Febrero de 1998, un grupo de 100 mujeres fueron estudiadas. Todas estas mujeres se encontraban con un embarazo a término, en la fase activa del trabajo de parto, tenían más de 3 cm. de dilatación cervical, nulíparas, sin cicatriz uterina anterior y con pelvis útil según valoración médica. El grupo fue dividido al azar en dos sub-grupos conteniendo a 50 mujeres cada uno. El primer grupo tuvo el apoyo durante el parto de una educadora perinatal capacitada como doula, mientras que el otro grupo no tuvo apoyo de la doula. Se midieron y se registraron: la duración del trabajo de parto, el uso de oxitocina y si el nacimiento ocurrió por vía vaginal o mediante cesárea. Las características y edad gestacional fueron similares en ambos grupos. Los resultados confirmaron que el apoyo de la doula durante el trabajo de parto está asociado con una disminución significativa de cesáreas y de administración de oxitocina. Se observó una tendencia hacia trabajos de parto más cortos y a un menor uso de bloqueo epidural. Los resultados de este estudio muestran, como en otros estudios que han medido el impacto de la presencia de la doula durante el trabajo de parto y el nacimiento, que el apoyo que brinda la doula está asociado con resultados positivos que tienen implicaciones físicas, emocionales y económicas.

Journal of Perinatal Education, 9(2), 8–13; *apoyo en el parto, apoyo de la doula, nacimiento.*

Background

Two decades ago, pregnant women who wanted to have a natural birth in a private hospital in Mexico needed the support of their childbirth educator during labor. This was because the conditions in which women gave birth in private hospitals at that time were quite different from today: The presence of husbands was not accepted in labor rooms, except occasionally when they were allowed into the birthing room, and women in labor spent most of the time in bed. The childbirth educator was needed to help mothers with as many comfort strategies as possible, such as relaxation, massage, use of a focal point, and breathing techniques. Freedom for positioning, vocalization, and other spontaneous behaviors was not permitted. Women taking childbirth classes at that time were highly motivated to have a natural birth, known in Mexico as *psychoprophylactic childbirth*. Childbirth educators were experienced at supporting women in labor and, in turn, women had confidence in

their childbirth instructor's support skills to help them achieve their goal to accomplish a natural birth.

Over time, preparation for psychoprophylactic childbirth began to be more widely accepted in Mexico. With the influence of the North American school of thought, the role of the coach (usually the future father) during labor began to be considered very important (Simkin & Frederick, 2000). During classes in Mexico, childbirth educators prepared future fathers to help their wives during labor and birth; soon, the majority of childbirth educators no longer accompanied couples to hospitals. Childbirth educators in Mexico started to believe that the father was the best one to effectively support the wife in labor. It was even said that mothers developed a dependence on childbirth educators that should be avoided. Eventually, childbirth educators were advised to stay away from hospitals in order to allow couples to do their work. Some childbirth educators continued to give support during labor and birth; however, with the influence of the American idea of the coach, the majority prepared future fathers to apply all the required strategies and comfort measures to help their wives achieve an unmedicated birth. Once childbirth instructors abandoned their work of helping women in hospitals to give birth, epidurals and cesarean births increased while unmedicated births decreased.

When the Lamaze Certified Childbirth Educator program was brought to Mexico in 1991, coordinators of this program reconsidered the importance of a natural childbirth and the presence of the childbirth educator working with the couples in hospitals. One of the reasons for the increased number of medicated births, epidurals, and cesarean sections among prepared couples' birth experiences seemed to be the absence of experienced support such as childbirth instructors to help the couples in the hospital. At the same time, medical literature began to publish articles on the concept of the professional labor-support individual and research that studied the

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impact of support given by doulas (Kennell, Klaus, McGrath, Robertson, & Hinkley, 1991; Klaus, M., Kennell, Berkowitz, & Klaus, P., 1992; Klaus, Kennell, Robertson, & Sosa, 1986; and Sosa, Kennell, Klaus, Robertson, & Urrutia, 1980).

Doulas are experienced women helping laboring women. Their essential task is to give mothers continuous physical and emotional support throughout labor and birth (Doulas Of North America, 1992; Simkin & Way, 1998), although in some studies they have been given a less active role. Research has shown that the doula's support is associated with decreases in length of labor, incidence of cesarean birth, epidurals, and the need for pitocin and forceps. The presence of doulas during labor is also associated with decreases in pain and anxiety. Beyond birth, doulas have been associated with increasing the number of mothers who decide to breastfeed their babies longer and, in turn, experience fewer problems with their babies (such as vomiting, colds, coughing, lack of appetite, and diarrhea). Doulas have also helped to create better mother-infant interaction and bonding, as well as a reduction in health care costs. Women have also reported more satisfaction with childbirth experience when they had the benefit of a doula's presence (Hodnett, 1997; Kennell et al., 1991; Klaus et al., 1986; Klaus et al., 1992; Sosa et al., 1980).

The controlled trials conducted by Drs. Klaus and Kennell have been published in *New England Journal of Medicine*, *British Medical Journal*, *British Journal of Obstetrics and Gynaecology*, and *Journal of the American Medical Association*. Six trials were conducted: 2 in Guatemala (one trial included 136 women and the other trial included 464 women); one in Houston, Texas, (416 women); one in Johannesburg, South Africa, (192 women); one in Helsinki, Finland; and one in Canada. Considerable consistency exists in the evidence of all 6 trials, and all of them show clear benefits from intrapartum support. The combined results reported were as follows: 25% reduction in length of labor, 50% reduction in cesarean rate, 60% reduction in epidural anesthesia, and 40% reduction in pitocin administration and forceps delivery. Beyond birth, a direct relationship between the presence of a doula and some effects on mothers existed; such as, less bleeding, less postpartum pain, and more positive attitudes and behaviors related to affective interaction with newborns, which in turn resulted in longer breastfeeding and health of babies at 6

weeks after birth. Finally, there were also differences in the affective relationship with the couple (Kennell et al., 1991; Klaus, M. et al, 1992; Klaus et al., 1986; Sosa, 1980).

Impetus for the Study

During the last decade, the cesarean rate in Mexico increased disproportionately according to the recommendations of the World Health Organization (Suárez Ojeda, 1992). In 1992, it reached 40% in public hospitals and more than 70% in private hospitals (Suárez Ojeda, 1992). The health department in Mexico has published an official set of norms for health care during pregnancy, birth, postpartum, and newborn stages that should be observed by public and private hospitals throughout the country. These norms state that, in relation to the number of total births, the cesarean rate should not surpass 15% in second-level hospitals and 20% in third-level hospitals (Government Official Papers, 1995). As a result of these recommendations, the health department sought strategies to decrease the cesarean rate in the country.

In working to achieve the Mexican Health Department and WHO's cesarean rate recommendations, the Hospital General Manuel Gea González invited the Anahuac University Childbirth Education Program to participate in a research study to document whether or not doula support to women in labor in a Mexican hospital decreases the possibility for surgical birth. Therefore, the study's primary objective was to evaluate the efficacy of doula support provided during labor and birth to reduce cesarean rates.

Methods

From March 1997 to February 1998, a group of 100 pregnant women were studied. The participants were all women having their first baby, which generally happens below age 25 for clients attending this hospital. Typically, approximately 20% of the clientel are adolescents. Precise ages for this study group were not collected. Many were single mothers. Women who entered into the study were at term, engaged in an active phase of labor, exhibited 3 cm. or more cervical dilatation, were nuliparous, had no previous uterine incision, and were judged to possess adequate pelvises. They were randomly assigned into one of two subgroups comprising 50 women each:

The first subgroup had the support of a childbirth educator who was additionally trained as a doula, while the second subgroup had standard care and no doula support.

Setting

The setting for this study was the Hospital General Manuel Gea Gonzalez, a third-level health institution that assists a community of women with high-risk pregnancies and births. This health institution is a “Baby Friendly” hospital that promotes early and exclusive breastfeeding as well as rooming-in (see the “Ten Steps to Successful Breastfeeding,” as listed on The Baby Friendly Hospital Initiative web page link at www.promom.org/bfhi/html). The majority of women that come to this hospital to give birth have been transferred from first-level, low-risk clinics and hospitals. The labor room is very busy and crowded with patients. The available space is quite small and, thus, women must typically stay in bed during labor.

The Lamaze International Childbirth Educator Program at Anahuac University, located in Mexico City, now includes a doula training seminar to teach all candidates the art and science of labor support. During the seminar, which includes a hands-on portion, candidates learn the doula role, including nonpharmacological strategies for pain management, the application of numerous comfort measures to deal with labor pain, and emotional support strategies. Under doula trainers’ supervision, a group of such students supported women in labor in this study who were assigned to doula support. Data were recorded on the duration of labor, the use of pitocin, and whether or not the birth was a vaginal birth or cesarean section.

Due to the lack of beds, many women were kept on tiny stretchers until they were fully dilated. Litotomy position in the delivery room was the norm. Thus, the doulas who participated in this study had to work with limitations to offer adequate support during labor. It was sometimes impossible to help women get off the beds or the stretchers at all in order to try more comfortable positions that might be expected to speed up labor (Fenwick & Simkin, 1987). None of the laboring women in either group had received information or any professional preparation for their births; no health care providers had taught them anything about relaxation,

breathing techniques, expected sensations, or typical emotions.

Depending on the circumstances, doulas helped laboring women through different comfort measures such as touch relaxation, slow and modified pace breathing, focal point, and (when possible) walking and moving, which are activities that could be expected to facilitate the normal evolution of labor and birth (Simkin & Frederick, 2000; Perez & Snedeker, 1994; Simkin, 1989).

Results

The doulas in this study helped women unconditionally and reported a great deal of professional satisfaction. Mothers welcomed the doulas’ help and support. They reported that the doulas’ assistance was very helpful. Statistical evaluation was calculated using chi square for nominal variables and a student T-test for interval variables. Significance was set at $p = .05$.

The characteristics of the mothers and gestational age of the resulting infants were similar in both groups ($p = 1.0$). Twenty-one mothers (42%) from the doula-supported subgroup needed pitocin, while 48 mothers (96%) from the standard-care subgroup received pitocin ($p > 0.001$). Only 4 mothers (8%) from the doula-supported group received epidurals, while 16 mothers (32%) from the standard-care group received epidurals. The average length of labor was 14:51 (+/- 5:36 hours) in the doula-supported subgroup, compared to 19:38 (+/- 7:50 hours) in the standard-care subgroup. Only one woman (2%) in the doula-supported group needed a cesarean birth, while 12 women (24%) from the standard-care subgroup required cesarean births ($p > 0.003$). See Table 1.

Limitation

A limitation is that there was no substitute intervention for the group receiving standard care and, thus, the dif-

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Table 1 Outcome Differences Using a T-Test

	Doula Supported	Not Doula Supported	Percent Reduction	P Value
N	50	50		—
Age				NS
Pitocin Was Used	21 (42%)	48 (96%)	129%	.001
Epidurals Were Used	4 (8%)	16 (32%)	300%	NS
Mean Labor Length	14.5 hrs. (+/- 5.36)	19.38 (+/- 7.3)	34%	NS
Cesarean Birth	1 (2%)	12 (24%)	1100%	.003

ferences between groups could be potentiated by a Hawthorne effect on the part of the mothers. The physicians and nurses were not blind to the subject's group membership and, thus, they may have had a bias when they decided upon interventions. It is clear that the doula had a bias toward natural childbirth. Thus, their intervention was not mere presence as in some previous studies, but rather their intervention was active work to promote natural childbirth. Thus, the results cannot be generalized to settings where doulas are a less active presence.

Discussion

Given the limitations, it is interesting to compare the results of this study with the data obtained from Drs. Marshall Klaus and John Kennell's studies, in which general support was provided by either a familiar or unfamiliar professional such as a nurse, midwife, or lay person (Kennell et al., 1991; Klaus, M. et al., 1992; Klaus et al., 1986; Sosa et al., 1980). In this study, specific

support to laboring women was offered by childbirth educators doubly trained as doulas. These doulas believed and followed the Lamaze International's Philosophy of Birth (see Table 2) and had completed a Lamaze childbirth education curriculum (see Table 3). Just as Hodnett (1977) declared in her review on caregivers' childbirth support during labor and birth, the doulas' support in this study included three dimensions: (a) advice and information, (b) tangible assistance and emotional support (presence, reassurance, affirmation), and above all (c) confidence in the women's capacity to give birth naturally. The percentage reduction in cesarean

Table 2 Lamaze International's Philosophy of Birth

- Birth is normal, natural, and healthy.
- The experience of birth profoundly affects women and their families.
- Women's inner wisdom guides them through birth.
- Women's confidence and ability to give birth is either enhanced or diminished by the care provider and place of birth.
- Women have a right to give birth free from routine medical interventions.
- Birth can safely take place in birth centers and homes.
- Childbirth education empowers women to make informed choices in health care, to assume responsibility for their health, and to trust their inner wisdom.

Table 3 Lamaze Certified Childbirth Educators (LCCEs) complete a curriculum and international examination that:

- recognizes childbearing as a normal, natural, and healthy process;
- knows that birth is an experience that will stay in the memory of the mother for as long as she lives;
- understands both the physiology of labor and birth and the woman's physical and emotional needs;
- knows about birth complications and nonpharmacological strategies to deal with them;
- knows strategies to facilitate a normal, natural, and healthy birth, as well as breastfeeding and postpartum care;
- helps the mother and expectant couple to prepare and make informed decisions to accomplish their goals;
- facilitates the communication between the woman, the expectant couple, and health care providers;
- understands her nurturing role and knows how to protect the mother from an adverse environment; and
- understands and respects women's cultural diversities.

(Lamaze International, 1998; Lamaze International Certified Childbirth Educator's Study Guide, 1998).

. . . *childbirth educators appeared to benefit from participating as a doula.*

births and pitocin use looks to be greater than that found by previous studies. This may be because the intervention was stronger and the number of subjects were smaller, or it may be due to study limitations as previously noted.

Nonetheless, clear benefits with physical, emotional, and financial implications are repeatedly found in studies of doula support. No known risks are associated with intrapartum support given by trained doulas. Thus, it seems reasonable that every effort should be made to ensure that laboring women receive support from those close to them and, additionally, from doulas. Further studies are needed to compare the level of doula training that creates the best outcomes.

Anecdotically, childbirth educators appeared to benefit from participating as a doula. Such experience can help the educator to learn the art and science of support during labor and birth. The childbirth educator can then teach prenatal classes from an experiential basis that may improve her ability to help families experience a healthy, normal, and natural birth.

References

- Doulas of North America (1992). *Code of ethics and standards of practice*. Seattle, WA: DONA.
- Enkin, M., Keirse, M., & Chalmers, I. (1989). *A guide to effective care in pregnancy and childbirth*. New York: Oxford University Press.
- Fenwick, L., & Simkin, P. (1987). Maternal positioning to prevent or alleviate dystocia in labor. *Clinical Obstetrics and Gynaecology*, (30)1, 83-89.
- Hodnett, E. D. (1997). Support from caregivers during childbirth. In J. P. Neilson, C. A. Crowther, E. D. Hodnett, G. J. Hofmeyer, & M. J. N. C. Keirse (Eds.), *Pregnancy and childbirth module of the Cochrane database of systematic reviews* [Database on disk and CD-ROM]. The Cochrane Collaboration (Issue 2). Oxford: Update Software. [Also available from the World Health Organization's Reproductive Health Library No. 1 Software. Geneva.]
- Klaus, M. H., Kennell, J. H., Robertson, S. S., & Sosa, R. (1986). Effects of social support during parturition on maternal and infant morbidity. *British Medical Journal*, 293, 585-587.
- Kennell, J. H., Klaus, M. H., McGrath, S. K., Robertson, S., & Hinkley, C. (1991). Continuous emotional support during labor in a U.S. hospital: A randomized controlled trial. *Journal of the American Medical Association*, 265, 2197-2201.
- Klaus, M., Kennell, J. H., Berkowitz, G., & Klaus P. (1992). Maternal assistance and support in labor: Father, nurse, midwife, or doula? *Clinical Consultations in Obstetrics and Gynecology*, 4(4), 211-217.
- Lamaze International Inc. (1998). *Lamaze international philosophy of birth*. Washington, D.C.: www.lamaze-childbirth.com.
- Lamaze International Inc. (1998). *Lamaze international certified childbirth educator's study guide*. Washington, D.C.
- Simkin, P. (1989). *The birth partner: Everything you need to know to help a woman through childbirth*. Boston: The Harvard Common Press.
- Simkin, P., & Frederick, E. (2000). Labor support. In F. Nichols and S. Humenick (Eds.) *Childbirth education: Practice, research and theory* (2nd ed., pp. 307-341). Philadelphia: W. B. Saunders.
- Simkin, P., & Way, K. (1998). *Doulas of North America position paper: The doula's contribution to modern maternity care*. Seattle, WA: Doulas of North America Board of Directors.
- Sosa, R., Kennell, J., Klaus, M., Robertson, S., & Urrutia, J. (1980). The effect of a supportive companion on perinatal problems, length of labor, and mother-infant interaction. *New England Journal of Medicine*, 303, 597-600.
- Suárez Ojeda, E. N. (1992, April). La mortalidad infantil y perinatal en las Américas. Lecture presented at the XXIII National Congress of Pediatrics, Instituto Nacional de Perinatología, Mexico City, Mexico.
- Secretaría de Salud (1995, January 6). Norma oficial mexicana NOM-007-SSA2-1993, atención de la mujer durante el embarazo, parto y puerperio del recién nacido – Criterios y procedimientos para la prestación de servicios. Mexico: Government Official Papers.