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Decision-making around method of delivery in El Paso, Texas and Ciudad Juárez, Chihuahua

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Abstract

Decision-making around method of delivery in El Paso, Texas and Ciudad Juárez, Chihuahua

By Carla DeSisto

Background: U.S.-Mexico border communities have high rates of cesarean births. The reasons are being studied, but no published research has yet examined cesarean birth along the U.S.-Mexico border from the perspectives of pregnant women and their doctors.

Study Question: How do low-risk, nulliparous pregnant women and their doctors in El Paso, Texas and in neighboring Ciudad Juárez, Chihuahua communicate about the choice of delivery method and how do they perceive that the decision is made?

Methods: Eighteen women were recruited through obstetricians in El Paso and prenatal care providers in Ciudad Juárez in May-July, 2012. Eligible women were nulliparous, more than 8 months pregnant without medical risk factors for cesarean section, and had no plans for elective cesarean section. We observed prenatal care visits, interviewed women prenatally and postpartum, and interviewed the obstetricians of study women in El Paso. We performed qualitative data analysis on transcribed observation notes and verbatim interviews using MaxQDA software to better understand how each woman's delivery method decision was made.

Results: Women's expectations of labor and delivery were informed through multiple channels, but their most valued source of information was their female friends and relatives. The women who were most confident in their knowledge about birth and who demonstrated trust and good communication with their doctor were most involved in birthing decisions. Surgical delivery was averted by two study women by asking if they could "try harder" or "wait longer" for a vaginal delivery. Two women had unexpected cesarean deliveries because of fetal intolerance of labor and cord prolapse, respectively. Ciudad Juárez women were unable to establish rapport with delivering obstetricians because their prenatal care providers did not perform their deliveries. This also prevented us from interviewing the obstetricians of study women in Ciudad Juárez.

Conclusions: Delivery method decisions are complex and involve multiple influences, including biomedical factors, women's level of knowledge about birth, doctor-patient communication, and women's participation in decision-making. Feeling knowledgeable about the birth process may have led women to participate more with their doctors in decisions, and this may have helped women in our study avoid cesarean sections.

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Chapter 1: Introduction

Introduction and rationale

A cesarean section is a surgical procedure used to remove a fetus and placenta from a pregnant woman's uterus through an incision in the woman's abdominal wall. This technology can save the life of the mother, the child, or both when the baby is unable to safely travel through the vaginal canal. However, the overuse of cesarean sections can increase the risk of morbidity and mortality for both the infant and the mother.[1]

Problem and purpose statement

Since 1985, the World Health Organization has asserted that "there is no justification for any region to have a rate higher than 10-15%".[2] However, in the U.S., the cesarean delivery rate rose nearly 60% from 1996 to 2009.[3] In Mexico, the cesarean delivery rate rose 4.5% annually from 2000 to 2009.[4] The state of Texas had the ninth highest rate of cesareans in the U.S. at 35.1% in 2010,[3] and the state of Chihuahua had a 2011 cesarean section rate of 38.1% [http://portal.salud.gob.mx/]. Communities on the U.S.-Mexico border have high rates of cesarean births.[5,6] Hispanic births in some border communities are twice as likely to result in cesarean delivery as births among Hispanics in other U.S. states.[7] In 2009, the proportion of cesarean births among Hispanic women in U.S. border communities was 37.9%, compared to 31.6% among all U.S. Hispanic women; in Mexico, 43.1% of border births were cesarean, compared to 44.5% of all Mexican births.

The purpose of this study is to understand how low-risk, nulliparous pregnant women and their doctors in El Paso, Texas and Ciudad Juárez, Chihuahua communicate about method of delivery decisions, and how they perceive that these decisions are made. Such information could

inform efforts to reduce the high cesarean delivery rate on the U.S.-Mexico border.

Research questions

1. Where do nulliparous pregnant women learn about delivery method, induction, and anesthesia?

2. Who/what influences the decision(s) regarding delivery method, induction, and anesthesia?

3. Are there points in the communication between women and providers like the ones studied here in which the decision-making process may be impacted by interventions? If so, where?

Significance statement

Public health officials working on the U.S.-Mexico border must understand the complexities of decision-making regarding method of delivery for low-risk primigravidas in order to develop viable intervention strategies for reducing the primary cesarean rate in the region. These interventions may ultimately improve maternal and child health outcomes and reduce health care spending in the region.

Definition of terms

U.S.-Mexico border area: Defined in P.L. 103-400 (22 U.S. Code, 290 n-5) and the La Paz Agreement of 1983, as the area 100 kilometers (62 miles) north and south of the United States-Mexico border. This area includes 80 municipalities in 6 Mexican states (Baja California Norte, Chihuahua, Coahuila, Nuevo León, Sonora, and Tamaulipas) and 44 counties in 4 U.S. states (Arizona, New Mexico, California, and Texas). Within these municipalities and counties, there are 15 pairs of sister cities where about 90% of the border population lives. These sister cities are characterized by interdependence on one another and transnational lifestyles of their populations.[8]

Cesarean section: A cesarean section refers to the operation of delivering a baby through

incisions made in the mother's abdominal wall and uterus.[9]

Primary cesarean section: A primary cesarean delivery is a live birth delivered by cesarean section to a woman with no previous history of a cesarean section.[10]

Elective induction of labor: Induction of labor when there is no clear medical benefit to mother or child for delivery at that point in time compared with continuation of pregnancy.[11]

Medically indicated induction of labor: Induction of labor when there is clear medical benefit to either the mother or the child from ending the pregnancy rather than continuing it.[11]

***Seguro Social* (social security) hospitals**: In Mexico, these hospitals are funded through the *Instituto Mexicano del Seguro Social* (commonly referred to as IMSS). This insurance scheme benefits salaried employees in the private sector.[12]

***Secretaría de Salud* (ministry of health) hospitals**: In Mexico, these hospitals are funded through *seguro popular*, the insurance scheme that covers non-salaried workers, the self-employed, and families outside the labor force.[12]

Chapter 2: Comprehensive Review of the Literature

Methodology

Peer-reviewed literature was primarily found using PubMed. Beginning in October 2011, I first identified articles with general information about the growing rate of cesarean utilization, both in the United States and internationally. Then, as I began identifying other areas of interest throughout the next year, such as cost issues, epidurals, and induction of labor, I specifically searched for articles related to those topics. I also looked at the references cited in the articles I found most useful in order to identify related information.

Throughout this process, I used EndNote X4 to keep track of my references. I also downloaded the articles onto my computer. As I read the articles, I copied their abstracts into a Word document that was linked to my EndNote library. Underneath the abstract, I wrote notes to myself about the article and its usefulness. I kept the Word document in alphabetical order by the first author's last name. A total of 193 articles were reviewed in this process.

In order to write up my literature review, beginning in August 2012, I first made an outline of all of the subheadings I was planning on using. Then I used the "find" function on Microsoft Word to search for key words for each subheading in order to identify the articles related to each subtopic. I cited articles as I wrote using EndNote so that I could easily move sections around without losing the references. After the first draft of my literature review was complete, I went through my entire Word document to make sure that I did not miss any important points from the articles I read.

Literature Review

Cesarean Utilization

Since the 1980s, the use of cesarean section has been rising around the world. The World Health Organization asserted in 1985 that "there is no justification for any region to have a rate higher than 10-15%".[2]

Although very unevenly distributed, 15% of births worldwide occur by cesarean section.[13] Latin America and the Caribbean show the highest rate (29.2%), and Africa shows the lowest (3.5%).[13] In developed countries, the proportion of cesarean births is 21.1%, whereas in least developed countries only 2% of deliveries are by cesarean section.[13]

The cesarean delivery rate in the United States rose nearly 60% from 1996 to 2009.[3] Moreover, in 2006, cesarean delivery was the most frequently performed surgical procedure in United States hospitals.[14] Healthy People 2010 set two targets related to cesarean sections: (16-09a) 15% cesarean birth rate among women with no prior cesarean, compared to the 18% baseline from 1998 and (16-09b) 63% cesarean birth rate among women with prior cesarean, compared to the 72% baseline from 1998.[15] However, Healthy People 2010 does not appear to have had any significant impact on cesarean delivery rates, as they continued to rise for most of the decade. The first decrease in cesarean delivery rates in 14 years was observed from 2010 birth data, and the rate was still 32.8% of all births.[3] Healthy People 2020 has created two new targets related to cesarean sections: (7.1) 23.9% cesarean birth rate in women giving birth for the first time, compared to the 26.5% baseline from 2007 and (7.2) 81.7% cesarean birth rate in women with a prior cesarean birth, compared to the 90.8% baseline from 2007.[15]

The cesarean delivery rate varies greatly around the United States. The states with the highest percentage of cesarean deliveries are Louisiana (39.7%) and New Jersey (38.8%).[3]

Puerto Rico has the highest rate among U.S. territories, with a rate of 46.7%.

In the United States, non-Hispanic black women are more likely to deliver by cesarean (35.5%) than non-Hispanic white (32.6%) and Hispanic women (31.8%).[3] Additionally, older women are more likely to deliver by cesarean. In 2010, women aged 40-54 years were more than twice as likely as women under 20 to deliver by cesarean (49.5% versus 22.6%).

The cesarean utilization rate varies along the U.S.-Mexico border. In 2004, the Texas border region had a cesarean rate of nearly 37%, while the New Mexico and Arizona border counties had much lower rates with 25% and 23%, respectively.[16]

The cesarean delivery rate is typically higher in Mexico than in the United States. In 2011, the overall cesarean delivery rate in Mexico was 45.21% [http://portal.salud.gob.mx/]. In the Mexican states that border the United States, the cesarean delivery rate was 46.20%. The rate was 38.08% in the state of Chihuahua, and 39.18% in Ciudad Juárez.

In Mexico, the cesarean delivery rate varies by the type of hospital of birth. In 2011, 48.29% of women who delivered at an IMSS hospital had a cesarean section, compared to 32.98% of women who delivered at a Secretaría de Salud hospital [http://portal.salud.gob.mx/]. In the state of Chihuahua, these cesarean delivery rates were 40.67% for women who delivered at an IMSS hospital and 25.85% for women who delivered at a Secretaría de Salud hospital.

Primary Cesarean Sections

Since the rate of vaginal birth after cesarean (VBAC) has fallen dramatically since 1996, in part because of studies describing the risks associated with VBAC delivery[16], a primary cesarean often leads to repeat cesarean births.[17] The repeat cesarean delivery rate in the United States was almost 91% in 2006[17] and the VBAC rate was 8.3% in 2007.[18] The 2006 American College of Obstetricians and Gynecologists (ACOG) survey found that 26.4% of responding

physicians were not performing VBACs.[19]

The primary cesarean rate in the United States in 2008 was 23.8%.[20] In 2009, the primary cesarean rate in Texas was 19.5% and the primary cesarean rate in the city of El Paso was 27.0%.[21] In 2011, the rate of cesarean among women without a previous birth was 49.11% across all of Mexico and 39.32% in the Mexican state of Chihuahua [http://portal.salud.gob.mx/].

Reasons for Cesareans

Cesarean sections can be life-saving operations and are performed for a variety of medical indications, including breech presentation,[22,23] fetal distress, dystocia, cord prolapse, placenta previa, multiple gestation,[24] and cephalopelvic disproportion.[25,26]

Maternal Request for Cesarean Delivery

In some cases, a woman will request a cesarean section in the absence of medical indications. This phenomenon has been observed in China[27-29], Australia[30-32], Brazil[33], the United Kingdom[34], and Sweden.[35]

A systematic review and meta-analysis involving 38 studies and a total of 19,403 women demonstrated that 15.6% had a preference for cesarean delivery.[36] Higher preference for cesarean section was reported in women with a previous cesarean section versus women without a previous cesarean section and those living in a middle-income country versus a high-income country.

According to data from 42 hospitals in six Latin American countries from 1998 to 2000, maternal request accounts for 8.4% of cesarean sections in Argentina, 3.6% in Guatemala, 6.2% in Cuba, 6.3% in Mexico, 11.7% in Colombia, and 12.4% in Brazil.[37] However, in a review of the literature about women's request for cesarean section, Gamble and colleagues found that no studies systematically examined information provided to women by health professionals to

inform their decision, suggesting that data about maternal request should be interpreted with caution.[38]

In a follow-up to the literature review by Gamble and colleagues, McCourt and colleagues concluded that research between 2000 and 2005 shows evidence of very small numbers of women requesting a cesarean section in the United States, with a range of personal and societal reasons underpinning these requests.[39]

The primary reason named in the literature for a non-medically indicated maternal request for cesarean section is fear of vaginal delivery,[27,40-44] followed by concern about quality of care during vaginal delivery.[30,33,38] For example, Behague and colleagues, in studying the epidemic of cesarean deliveries in Brazil, where cesarean sections are common among wealthy and educated women, concluded that fear of substandard care during vaginal delivery is behind many poor women's preferences for a cesarean section.[33] This fear of substandard care was also found in China.[27] Other influential factors found in China include perceived safety, perceived pain of vaginal delivery compared to cesarean delivery, and the opportunity for sterilization.[27] In Latin America, the promise of maintaining "the vaginal tone of a teenager," which is frequently promoted in popular books and by hospitals, may also be a reason women request cesarean delivery.[45] Wagner suggests that this is more likely a benefit to the sexual partner than the woman herself,[45] although there is a notable lack of further research on this topic.

Given the conclusion by Gamble and colleagues that data about maternal request should be interpreted with caution, let it suffice to say here that the peer-reviewed literature provides some evidence that, in some situations, women may request a cesarean delivery in the absence of medical indication. Before discussing other factors that may be important regarding the decision for a cesarean delivery, I will present some of the issues related to the procedure itself.

Potential Problems with Cesarean Deliveries

This section will summarize the ongoing debate in the scientific literature about whether pregnant women should be permitted to elect for cesarean deliveries in the absence of medical indications.

An elective cesarean section averts the need for episiotomies, prolonged and painful labors, and difficult instrumental deliveries.[46] It also avoids trauma to the pelvic floor and to the urethral and anal sphincters, which are associated with long term predisposition to genital prolapse and urinary and anal incontinence.[47] However, cesarean section is a major abdominal surgery and, like any other surgery, has risks of medical complications. These complications include both short-term and long-term effects on the mother and her baby.

Data from the California Department of Public Health show that three of the six leading causes of maternal mortality are associated with cesareans: hemorrhage, complications from anesthesia, and infection.[48] However, maternal mortality is a rare event in developed countries, making it difficult to draw any definitive conclusions about the link between cesarean delivery and maternal mortality.

A very large prospective cohort study from 123 health facilities in eight Latin American countries by Villar and colleagues evaluated 97,095 deliveries over three months and found that women undergoing cesarean delivery had an increased risk of severe maternal morbidity compared with women undergoing vaginal delivery (OR= 2.0, 95% CI= 1.6-2.5 for intrapartum cesarean; OR=2.3, 95% CI=1.7-3.1 for elective cesarean).[49] Similarly, in a year-long case-control study of 48,865 deliveries in the United Kingdom, Waterstone and colleagues found that cesarean section quadruples a mother's risk for morbidity compared to vaginal birth.[50]

Wang and colleagues, in a matched-cohort study with 602 women in China, found that

the incidence of total complications was 2.2 times higher in the cesarean section group during hospitalization post-partum, compared with the vaginal delivery group (RR=2.2, 95% CI= 1.1-4.4).[29] The risk of hemorrhage from the start of labor until 2 hours post-partum was significantly higher in the cesarean group (RR= 5.6, 95% CI= 1.2-26.9).

In a prospective cohort study of 393 women in the United Kingdom, Murphy and colleagues found similar results: women undergoing cesarean section were more likely to have a major hemorrhage (defined as > 1 L blood loss; OR= 2.8, 95% CI= 1.1-7.6) and extended hospital stay (defined as ≥ 6 days; OR= 3.5, 95% CI= 1.6-7.6) than those with vaginal delivery.[25]

Liu and colleagues carried out a retrospective population-based cohort study of all women in Canada who delivered over a period of 14 years and concluded women with planned cesarean delivery have an increased postpartum risk of cardiac arrest (OR= 5.1, 95% CI= 4.1-6.3), wound hematoma (OR=5.1, 95% CI= 4.6-5.5), hysterectomy (OR= 3.2, 95% CI= 2.2-4.8), major puerperal infection (OR= 3.0, 95% CI= 2.7-3.4), anesthetic complications (OR= 2.3, 95% CI= 2.0-2.6), venous thromboembolism (OR= 2.2, 95% CI= 1.5-3.2) and hemorrhage requiring hysterectomy (OR= 2.1, 95% CI= 1.2-3.8) compared to women with planned vaginal delivery.[51] Further, women with planned cesarean delivery stayed in the hospital longer than women with planned vaginal delivery (adjusted mean difference= 1.47 days, 95% CI= 1.46-1.49 days).

Infection is perhaps the most widely-discussed potential negative outcome from cesarean delivery versus vaginal birth. The National Nosocomial Infections Surveillance System shows a 3% infection rate for cesarean deliveries with no risk factors and an 8% infection rate after high-risk cesarean sections.[52] Villar and colleagues found that the risk of antibiotic treatment after delivery for women having a cesarean was five times that of women having vaginal deliveries.[49]

The general risks to the mother from having abdominal surgery that are mentioned in the

literature include damage to blood vessels, accidental extension of uterine incision, and damage to the urinary bladder and other organs.[45] Other specific maternal risks of cesarean delivery in the short term that are mentioned in the literature include pulmonary embolism, Mendelson's syndrome,[46] blood clots, fever, and injury to the bladder, bowel, or adjacent organs.[53]

Wang and colleagues found that the risk of chronic abdominal pain was significantly higher for women with cesarean delivery (RR= 3.6, 95% CI= 1.2-10.9) than for women with vaginal delivery within 12 months post-partum.[29] Other long term morbidity can include formation of adhesions, intestinal obstruction, bladder injury, and uterine rupture.[46] Additionally, the peer-reviewed literature suggests that there is decreased fecundity, increased risk of ectopic pregnancy, placenta previa,[54] placenta accreta, and miscarriage[53] in subsequent pregnancies.

There may also be a psychosocial component to cesarean deliveries. In their literature review, Lobel and Stein DeLuca conclude that women who deliver by cesarean section have more negative perceptions of their birth experience, their infants, and themselves; exhibit poorer parenting behaviors; and may be at higher risk for postpartum mood disturbance compared to women delivering infants vaginally.[55] Additionally, feelings of inadequacy, guilt, and failure in not completing a natural process may affect bonding between mother and infant, particularly if the operation was conducted under general anesthetic.[46]

Cesarean delivery also includes risks for the baby. The neonatal mortality rate for infants delivered by cesarean section with "no indicated risk" is higher than vaginal delivery.[56] Villar and colleagues concluded that cesarean delivery is associated with an increase in fetal mortality rates and higher numbers of babies admitted to intensive care for 7 days or longer even after adjustment for preterm delivery.[1] Similarly, Murphy and colleagues concluded that babies

delivered by cesarean section were more likely to require admission for intensive care (OR=2.6, 95% CI= 1.2-6.0).[25] Additionally, Tollanes and colleagues, in a population-based cohort study of 1,756,700 singletons over 30 years in Norway, concluded that children delivered by cesarean section had a 52% increased risk of asthma compared with spontaneously vaginally delivered children (HR= 1.52, 95% CI= 1.42-1.62).[57]

On a population level, there is evidence that the overuse of cesarean delivery is associated with adverse outcomes. Severe obstetric complications increased in the United States from 1998-1999 to 2004-2005 and these increases were associated with the increasing rate of cesarean delivery, even after adjusting for maternal age, payer, multiple births, and select comorbidities.[58] Additionally, obstetrical interventions, including cesarean delivery and labor induction, were related to the increase in the U.S. preterm birth rate between 1991 and 2006.[59] In Latin America, an estimated 1.5 million unnecessary cesarean sections are performed every year, causing about 100 maternal deaths and 40,000 cases of neonatal respiratory morbidity, and probably increasing the occurrence of preterm births and neonatal mortality.[60]

However, nuances remain about the overall risks and benefits of cesarean delivery. For example, Villar and colleagues concluded that cesarean delivery independently reduces overall risk in breech presentations and risk of intrapartum fetal death in cephalic presentations.[49] In cephalic presentation, intrapartum cesarean was associated with twice the risk of neonatal death, and a similar but smaller effect was observed for elective cesarean delivery. With breech presentation, however, both types of cesarean were associated with lower neonatal mortality up to hospital discharge, although the odds ratios were not significant. Additionally, in cephalic presentations, cesarean delivery independently increases the risk of severe maternal and neonatal morbidity and mortality.

There are also some disagreements in the peer-reviewed literature about the risks related to cesarean delivery. For example, Smith and colleagues examined 120,633 singleton second births in Scotland during the 1980s and 1990s and concluded that delivery by cesarean section in the first pregnancy could increase the risk of unexplained stillbirth in the second. In women with one previous cesarean delivery, the risk of unexplained antepartum stillbirth at or after 39 weeks' gestation was about double the risk of stillbirth or neonatal death from intrapartum uterine rupture.[61] However, Bahtiyar and colleagues, using cross-sectional data from the U.S. on 11,061,599 deliveries, concluded that a prior cesarean delivery is not associated with an increased risk of stillbirth in a subsequent pregnancy.[62]

In a recent Cochrane review, Lavender and colleagues concluded that there is no evidence from randomized controlled trials upon which to base any practice recommendations regarding cesarean section for non-medical reasons at term.[9] However, there is little disagreement that cesarean section has become over-used in countries such as the United States and Mexico. This is problematic both because of the potential adverse effects on maternal and child morbidity and mortality and because of the economic cost of the procedures.

Cost of Cesareans

Cesareans are an expensive intervention. In 2003, the average cost of a cesarean delivery was $12,468 in the United States, which was twice the cost of the average vaginal birth ($6240).[63] The mean charge per primary cesarean delivery varies widely across hospitals, but in 2009 in El Paso the charges ranged from $5,912 at a public hospital to $22,183 at a private hospital with the highest rate of cesarean delivery in the city.[21] Across the state of Texas, the mean charge for primary cesarean delivery was $18,543 in 2009.[21] However, since cesarean deliveries usually take less time, but require longer hospital stays[25] (by law)[64], compared to

vaginal deliveries, the charges are somewhat difficult to interpret by themselves. Also, due to the increased risk of rehospitalization for infection and surgical wound complications, the real cost of cesarean delivery might even be higher than stated.[64]

Based on their study in Mexico, Gonzalez-Perez and colleagues suggest that millions of dollars, obtained from public funds, are unnecessarily spent annually on excess cesarean sections.[65] In a 2008 study of 137 countries, Gibbons and colleagues calculated a potential $2.32 billion in global saving through a reduction of cesarean section rates to 15% in the 69 countries that had rates greater than 15%.[66]

Suggested Reasons for Over-Utilization

In order to begin thinking about reducing the cesarean delivery rate, it is important to consider why the procedure has become so common.

Barber and colleagues found that between 2003 and 2009, 50% of the increase in the cesarean delivery rate was attributable to an increase in primary cesarean delivery.[24] Declercq and colleagues, using U.S. birth certificate data for 1991-2002, found that despite the fact that multiparous mothers had given birth to their previous children vaginally, 13.3% had a primary cesarean section in 2002.[67]

Barber and colleagues also concluded that "more subjective indications (nonreassuring fetal status and arrest of dilation) contributed larger proportions than more objective indications (malpresentation, maternal-fetal, and obstetric conditions)" to the increasing cesarean delivery rate.[24] Related to this, MacDorman and colleagues concluded that increases in primary cesareans in cases of "no indicated risk" have been more rapid than in the overall population and seem the result of changes in obstetric practice rather than changes in the medical risk profile or increases in "maternal request."[68]

Two of the often-mentioned maternal risk factors for cesarean delivery are increased maternal age[26,69-71] and obesity.[25,71] These two factors are often difficult to separate, given that older women have a higher prevalence of obesity than younger women in the United States.[72] More than half (52.4%) of primiparous mothers older than 40 years delivered via cesarean section in 2002.[67] However, women under age 25 experienced the greatest increases in cesarean deliveries from 2000 to 2007.[14] Declercq and colleagues found that while rates of obesity about U.S. women in all age groups continued to increase from 1991 to 2002, the trends did not coincide with the trends in cesarean deliveries.[67] They concluded that shifts in primary cesarean rates between 1991 and 2002 were not related to shifts in maternal risk profiles.[67]

Many supply-side factors related to cesarean deliveries have been explored in the peer-reviewed literature. For example, several studies have shown non-random distributions of the timing of births, and relate this to the medical system. For instance, remarkably fewer cesarean deliveries occur on Saturday and Sunday than any given weekday in the United States.[3] Similarly, in Japan, a study of 1,203,147 births in 1998 found that the average daily number of live births was significantly lower on weekends and national holidays than on weekdays, and the authors concluded that this was due to the timing of obstetric interventions.[73] In Israel, Goldstick and colleagues found that over nine years in a public hospital, there was diurnal variation in urgent operative deliveries, and concluded that there is perhaps a varying definition of "urgency" according to the time of day.[74]

Related to this, Cáceres and colleagues linked birth certificate and maternal in-patient hospital discharge records for 49 hospitals in Massachusetts from 2004-2006.[75] They found that even after adjusting for both socio-demographic and clinical factors, the chance of a cesarean delivery for nulliparous, term, singleton, and vertex births varied according to hospital. This

suggests the importance of hospital practices and culture in determining a hospital's cesarean rate.

In exploring physician factors related to cesarean deliveries, Burns and colleagues found that foreign medical school graduates and younger physicians are more likely to perform cesarean sections.[76] They also note that the odds of performing a cesarean increase with the physician's rate of cesarean sections in the prior year, delivery on a Friday, and delivery between 6 AM and 6 PM, while the odds decrease with the concentration of the physician's hospital practice.[76]

Associations regarding physician training, scheduling issues[48], physician age and experience[77], provider density[63], percentage of family physicians offering obstetric services[78], "individual practice style,"[79] and the use of nurse-midwives[80] have also been made in the peer-reviewed literature. In one study, male physicians were found to be significantly more likely than their female colleagues to perform cesarean section, and this relationship was particularly strong in the university practice setting;[81] however, this was not found to be the case in another study.[77]

It has been suggested that physicians' fear of malpractice has impacted cesarean rates, especially because obstetricians account for a disproportionate share of physicians' liability claims and payments.[82] The 2006 American College of Obstetricians and Gynecologists (ACOG) survey on professional liability revealed significant practice changes as a result of insurance availability or affordability. According to the results, 25.6% of surveyed physicians decreased their number of high-risk obstetrical patients, while 7.2% quit practicing obstetrics.[19] Further, 28.5% of those who continue to deliver reported increasing the number of cesarean sections.[19] This latter point was also found nearly a decade earlier by Dubay and colleagues,

who concluded that that physicians respond to malpractice claims risk by performing more cesarean sections.[82] Dubay and colleagues also found that this response by physicians was greater for mothers of lower socioeconomic status,[82] perhaps because physicians who treat indigent patients are sued more frequently.[19] Shwayder suggests that this may be because inner city hospitals may be staffed by poorly trained physicians, thus placing those patients at greater risk for harm.[19] Also, residency training commonly entails treating indigent patients. In combination with communication concerns and numerous "hand-offs," there is greater chance for medical error.

Related to this, based on analysis of the 2006 Natality Detail File, in the United States, non-Hispanic black, Hispanic/Latina, and Native American women are more likely to give birth by cesarean section than white or Asian women, controlling for clinical indicators such as hypertension, diabetes, multiple birth, pre-term delivery, fetal distress, and premature rupture.[48] Women who are unmarried and who have less than a high school education are more likely to have cesarean sections than women who are married and have higher education levels.[48] Roth and Henley suggest that stereotypes and social distance between the doctor and the patient are potential reasons as to why physician convenience may override patient care in these contexts.[48] They also suggest that these patients may be less likely to question the doctor's recommendations because of the power relationship between the patient and the provider.[48] This idea of the balance of power between health practitioner and patient has been explored in other studies,[38] especially in the context of Brazil.[33,83,84]

Given the wealth of data regarding cesarean delivery and its relationship with so many other factors, there has not been a single causal pathway to the trend of cesarean over-utilization published. Some people relate the entire trend to the medicalization of birth.[85] However, this

background information is useful in conceptualizing where possible interventions might exist.

Induction of Labor

Oxytocin is a hormone that is released naturally during labor when the baby puts pressure on the cervix and pelvic floor tissues. Bursts of the hormone induce labor contractions, which aid in cervical dilation while also helping to limit blood loss.[86] Oftentimes, hospitals will give patients synthetic oxytocin, called Pitocin, to induce the same contractions. Pitocin can also be used to augment labor.[48]

In 1985, the World Health Organization asserted that "No geographic region should have rates of induced labor over 10%."[2] In the United States, 23.4% of labors were induced in 2010.[3]

While oxytocin is naturally released in bursts, Pitocin is administered at a constant rate through an intravenous drip.[86] As such, some research has shown that Pitocin can create circumstances in which a cesarean section may be necessary. The 2005 WHO global survey on maternal and perinatal health in Latin America found that failure of labor induction was an indication for cesarean delivery in about 4% of cases.[1] Among women whose labor was induced, a median of 28% across hospitals went on to have a cesarean delivery.[1]

When compared with spontaneous onset of labor, medical[87,88] and elective[87-89] induction of labor in nulliparous women is associated with significantly more cesarean deliveries. This is predominantly related to an unfavorable Bishop score (which measures cervical dilation, cervical effacement, cervical consistency, cervical position, and fetal station) at admission.[69,87] Interestingly, women who undergo an elective induction have essentially the same risk of cesarean delivery as women who have a medical indication for induction.[87] In a cohort study of 1561 nulliparous women with vertex, singleton gestations, Seyb and colleagues demonstrated that women experiencing spontaneous labor had a 7.8% cesarean delivery rate, whereas women

undergoing elective labor induction had a 17.5% cesarean delivery rate (OR 1.89; 95% CI 1.12-3.18) and women undergoing medically indicated labor induction had a 17.7% cesarean delivery rate (OR 1.69; 95% CI 1.13-2.54).[88] Further, the total cost associated with hospitalization for women undergoing elective induction and medical induction was increased by 17.4% and 29.1%, respectively.[88] This was largely due to the requirement for more labor and delivery resources and more frequent cesarean delivery.[88]

However, the literature is clear that induction of labor can be beneficial in some instances. A systematic review of the literature demonstrated that randomized controlled trials suggest that elective induction of labor at 41 weeks of gestation and beyond is associated with a decreased risk for cesarean delivery.[90]

Anesthesia

More than 50% of women giving birth in hospitals in the United States use epidural anesthesia for pain relief during labor.[91] However, there is some evidence that the use of epidural anesthesia is related to cesarean delivery. For example, Traynor and colleagues, in a retrospective cohort study of 1561 nulliparous parturients who delivered term, singleton neonates in a cephalic presentation in one hospital, found that an increasing number of epidural boluses during the first stage of labor was significantly associated with increased risk of cesarean delivery.[92] They also found a significantly increased risk of cesarean delivery associated with decrements in cervical effacement, cervical dilation, and fetal station at the time of epidural catheter placement.[92] Seyb and colleagues found that epidural placement both at less than 4 cm dilation (OR 4.66; 95% CI 2.25-9.66) and after 4 cm dilatation (OR 2.18; 95% CI 1.06-4.48) was significantly associated with cesarean delivery in nulliparous women.[88]

As an alternative to epidural anesthesia, some women use other analgesic methods to help

manage pain during labor. Several studies have compared the outcomes of epidural anesthesia and non-epidural analgesics, and they have concluded that epidural anesthesia does not increase the incidence of cesarean section deliveries compared to non-epidural analgesia, even when randomization was used.[93-98] However, women receiving epidural analgesia have been shown to have a longer second stage of labor, which may increase the risk of instrumental vaginal delivery.[94,95,98]

However, not all research is in agreement here. For example, a study of 1088 singleton, nulliparous, term pregnancies in a community-based tertiary military medical center concluded that epidural analgesia does not increase the risk of cesarean delivery, nor does it necessarily increase Pitocin use or instrumental delivery caused by dystocia.[99]

Breastfeeding

There is evidence that cesarean deliveries have a negative impact on breastfeeding outcomes. According to data from the 1987 Mexican Demographic and Health Survey, cesarean section was a risk factor for not initiating breastfeeding (OR = 0.64, 95% CI = 0.50-0.82) and for breastfeeding for less than 1 month (OR = 0.58, 95% CI = 0.37-0.91).[100] In a cross-sectional study of 946 women on the U.S.-Mexico border who delivered a live infant, the odds of attempted breastfeeding before hospital discharge were significantly higher among women who had a vaginal delivery than among women who had a cesarean delivery (OR = 1.98, 95% CI = 1.43-2.75).[101] A recent study in Italy of 2,137 term infants delivered at one center concluded that emergency and elective cesarean deliveries are similarly associated with a decreased rate of exclusive breastfeeding compared with vaginal delivery.[102] The authors suggest that the most likely explanation for this is the inability of women who have undergone a cesarean section to breastfeed comfortably in the delivery room and in the immediate postpartum period.[102]

Evidence for Reducing Cesareans

Around the world, many health systems have worked to actively reduce the cesarean delivery rate. Some examples of interventions have been to encourage trial of labor, avoid unnecessary inductions[80], get a mandatory second opinion before performing a cesarean except in the case of emergencies[103], co-management for cesarean candidates[104], encouraging VBAC, active labor management with higher-than-usual doses of oxytocin (to augment labor), a detailed review of all cesarean sections and of individual physicians' rates of performing them[103], requiring a gestational age of at least 39 weeks except in the case of emergencies[105], and physician and nurse education about the maternal and fetal benefits of vaginal delivery.[106] These have had varying degrees of success to date. In a white paper published by the California Maternal Quality Care Collaborative, the authors also suggest interventions such as payment reform, education of the public, and public reporting.[107] However, there is no clear evidence to support the success of any single response to rising cesarean delivery rates; rather, authors suggest that a multi-faceted approach is necessary.[107]

Recently, the American College of Obstetricians and Gynecologists came out with the following recommendation: "Don't schedule elective, non-medically indicated inductions of labor or cesarean deliveries before 39 weeks 0 days gestational age."[108] Only the future will tell if this recommendation has an impact on cesarean rates in the U.S.

Chapter 3: Manuscript

Disclaimer:

This manuscript was prepared for Hispanic Heath Care International: The Official Journal of the National Association of Hispanic Nurses. The version printed here is subject to changes made in both the CDC clearance process and the journal's review.

A qualitative study of decision-making about method of delivery for primiparas in El Paso, Texas and Ciudad Juárez, Chihuahua

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Contribution of student

Study materials

In collaboration with Drs. Rochat, McDonald, Diaz, and Declercq, I created the research instruments (i.e. the prenatal care visit observation guide and interview guides) in both English and Spanish. I also created the informed consent form, which was translated using Dr. McDonald's allotted funds. Dr. McDonald and I worked together to create informational letters for providers and informational forms for women regarding this study in both English and Spanish.

Data collection

I arranged prenatal care visit observations and interviews with women and obstetricians with the help of Drs. McDonald and Diaz. I conducted all prenatal care observations and interviews in both El Paso and Ciudad Juárez. I reviewed and transcribed all observation notes and also transcribed the interviews verbatim in the language in which the conversation took place. A colleague at the U.S.-Mexico Border Health Commission assisted with reviewing the Spanish language recordings and transcripts to assure accuracy.

Data analysis

I performed qualitative data analysis using MaxQDA software.

Writing

I was the primary author of this manuscript, although all of the co-authors contributed their comments and suggestions. Additionally, Dr. McDonald performed the majority of the editing.

Abstract

The purpose of this study is to understand how low-risk, nulliparous pregnant women and their doctors in El Paso, Texas and Ciudad Juárez, Chihuahua communicate about method of delivery, and how they perceive that the delivery method decision is made. Overall, 18 women were recruited through obstetricians in El Paso (n=10) and prenatal care providers in Ciudad Juárez (n=8). We observed prenatal care visits, interviewed women prenatally and postpartum, and interviewed the obstetricians of study women in El Paso. Qualitative data analysis demonstrated that birthing decisions are complex and involve multiple influences, including women's level of knowledge about birth, doctor-patient communication, and women's participation in decision-making.

Introduction

Cesarean deliveries can save the life of the mother, the child, or both when the baby is unable to safely travel through the vaginal canal. However, an increase in the use of cesarean sections can increase the risk of morbidity and mortality for infants and mothers (Villar et al., 2006). Since 1985, the World Health Organization has asserted that "there is no justification for any region to have a rate higher than 10-15%" ("Appropriate technology for birth," 1985).

In both the U.S. and Mexico, the cesarean delivery rate rose about 4.5% annually during the past decade (Martin et al., 2012; OECD, 2011). One U.S. hospital-based study showed that between 2003 and 2009, 50% of the increase in cesarean delivery was attributable to an increase in primary cesareans, which account for one-quarter of all cesarean births in the U.S. (Barber et al., 2011; Osterman, Martin, Mathews, & Hamilton, 2011). Although Mexico does not report the primary cesarean rate, 49.1% of primiparas delivered by cesarean section in 2011 [http://portal.salud.gob.mx/]. Since 1996, when the rate of vaginal birth after cesarean (VBAC) began to fall dramatically, a primary cesarean is almost always followed by a repeat cesarean in the U.S. (Menacker, Declercq, & Macdorman, 2006). Many factors, such as physicians' fear of malpractice, maternal risk factors, increased use of labor induction or augmentation techniques, and maternal request for cesarean delivery, have been explored for their potential contributions to the rising cesarean rates (Cammu, Martens, Ruyssinck, & Amy, 2002; Dubay, Kaestner, & Waidmann, 1999; Kaiser & Kirby, 2001; Main et al., 2011; Mazzoni et al., 2011).

Communities on the U.S.-Mexico border have high rates of cesarean births (March of Dimes, 2011; J. A. McDonald et al., 2008). The U.S.-Mexico border area comprises 44 counties across four states in the U.S. and 80 municipalities across six states in Mexico (United States-Mexico Border Health Commission (USMBHC), 2010). About 90% of the border population

lives in the 15 pairs of binational sister cities in the area, which are characterized by interdependence on one another and transnational lifestyles of their populations. Hispanic births in some U.S. border communities are twice as likely to result in cesarean delivery as births among Hispanics in other U.S. states (J. McDonald, 2011). In 2009, the proportion of cesarean births among Hispanic women in U.S. border communities was 37.9%, compared to 31.6% among all U.S. Hispanic women; in Mexico, 43.1% of border births were cesarean, compared to 44.5% of all Mexican births.

The purpose of this study is to understand how low-risk, nulliparous pregnant women and their doctors in El Paso, Texas and Ciudad Juárez, Chihuahua, one pair of sister cities along the U.S.-Mexico border, communicate about method of delivery and how they perceive that the delivery method decision is made. Such information could inform efforts to reduce the cesarean delivery rate on the U.S.-Mexico border.

Methods

We used qualitative research methods to explore how decisions about method of delivery for low-risk primigravidas were made. We observed prenatal care visits, conducted semi-structured in-depth interviews (IDIs) with women during the prenatal and postpartum periods, and conducted brief structured interviews with the women's obstetricians. Data were collected between May 7, 2012 and August 10, 2012 in El Paso, Texas and Ciudad Juárez, Chihuahua. The study protocol was evaluated for human subjects concerns by the institutions involved and was found to be in compliance. All participants gave their informed consent at the time of their first contact with the interviewer and were reminded at subsequent contacts that participation in the study was completely voluntary.

Recruitment

Eligible women were nulliparous, more than 8 months pregnant without medical risk factors for cesarean section, and had no plans for elective cesarean section.

In El Paso, we contacted centrally-located obstetricians and asked them to participate in the study. Those who agreed were asked to identify eligible patients who were interested in learning more about the study. The doctors referred these women to the study interviewer, who provided additional information and then arranged the prenatal care observation and first interview. The prenatal interview took place in a private location at the doctor's office immediately following the woman's prenatal care visit. Postpartum interviews with women were arranged directly between the interviewer and the study participant and took place in a mutually convenient location. Postpartum interviews with doctors were arranged between the doctor's office staff and the interviewer and took place in the doctor's office.

In Ciudad Juárez, we worked through liaisons at two large public hospitals under the jurisdiction of the social security system (Instituto Mexicano del Seguro Social, or IMSS) and the Secretariat of Health to identify medical residents responsible for providing prenatal care within each hospital. Through these residents, we identified patients who met study eligibility criteria and invited them to participate in the study. The interviewer arranged prenatal interviews with these women, which took place in private examination rooms in the hospitals. Prenatal care observations were conducted a few weeks after the prenatal interview and postpartum interviews took place in the hospital after the women delivered, when possible. We attempted to contact the women we missed postpartum directly by phone and through the medical residents.

Sample and data collection

A total of 10 women, 16-40 years of age, were recruited through five participating El Paso obstetricians. Nine of the 10 were Hispanic, including eight of Mexican descent and two

who resided in Ciudad Juárez. These women delivered at four different El Paso hospitals: three private and one public. We observed prenatal care visits for nine of the women, conducted IDIs during the prenatal care period with all 10 of the women, and conducted IDIs during the postpartum period with eight of the women. Additionally, after eight of the births, we conducted brief postpartum interviews with the obstetrician. We learned the birth outcomes for nine of the ten women through interviews with the women and/or the obstetricians.

In Ciudad Juárez, eight women, 15-33 years of age, were recruited from the two hospitals. We observed prenatal care visits for two of the women, conducted IDIs during the prenatal period with all eight of the women, and conducted IDIs during the postpartum period with two of the women. We learned the birth outcomes for seven of the eight women through interviews or medical residents.

All observations of prenatal care visits and interviews with the 18 women and five obstetricians in the study were conducted by a single investigator. During the observation of the prenatal care visit, we noted the length of the visit, who was in the room, and dialogue between the woman and her doctor. During the semi-structured prenatal interview with the woman, we asked about her sources of information regarding the birthing process, her desires for labor and delivery, and her expectations about how birthing decisions might be made. During the semi-structured postpartum interview with the woman, we asked about the events that occurred during her labor and delivery, how birthing decisions were made, who she was communicating with in the hospital, and how she felt about what happened. During the brief structured interview with the doctor, we asked about the factors that influenced the particular patient's method of delivery.

Data management

Interviews were audio-recorded and transcribed verbatim. Observation notes were

reviewed and transcribed within 24 hours of the observation event. All data were de-identified and each study participant was assigned a unique alpha-numeric code.

Data analysis

Using standard qualitative data analysis techniques (Babbie, 2007), and with the aid of MaxQDA version 10 software (VERBI, Berlin, Germany), we reviewed transcripts, observation notes, and investigator-derived memos written after initial review of the materials. Interview transcripts and observation notes were coded according to the primary topics of interest they covered, including: women's sources of information, anticipated delivery method, labor induction, labor augmentation, doctor-patient communication, women's participation in delivery method decision-making, and barriers to participation in delivery method decision-making. The coded text was reviewed several times and themes emerged from these reviews. Saturation (Guest, Bunce, & Johnson, 2006), the point after which no new themes were observed in the data, was reached after reviewing all available data associated with the first eight women (two in Mexico and six in the U.S.).

Results

Of the 18 women in this study, three women had cesarean deliveries (two in the U.S. and one in Mexico), 13 women had vaginal deliveries (seven in the U.S. and six in Mexico), and two women had unknown delivery methods (one in the U.S. and one in Mexico). We interviewed 10 of these women both prenatally and postpartum; six (one in Mexico and five in the U.S.) had their labor medically induced and the other four (one in Mexico and three in the U.S.) had their labor augmented.

Themes that emerged from reviews of the data are described below, according to study topics. Data are presented from all 18 women and five obstetricians who participated in this

study.

Women's sources of information

Study women said that they learned most about labor and delivery from important women in their lives, their doctor, and childbirth classes.

Important women

All of the participants mentioned hearing about the experience of giving birth from people such as their mothers, sisters, aunts, and friends. They explained that they had high levels of trust in those women and the credibility of what those women told them. In responding to questions such as "Why do some women have cesarean sections?" or "Why do some women have their labor induced?" most of the participants told stories of their friends' and relatives' cesarean deliveries or inductions. The stories that the participants recounted tended to be of negative experiences of other women, such as failed inductions that resulted in cesarean sections and long recoveries after cesarean deliveries. These stories appeared to have shaped the perspectives of the participants as they anticipated their own delivery.

Doctor

Some participants named their doctor as a source of information about method of delivery during the prenatal period. Although the doctors were usually considered secondary to the important women in the participants' lives, several study women mentioned that they learned about some of the medical indications for cesarean delivery from their doctor.

Childbirth classes

Childbirth classes were an important source of information for the four study women who participated in them, including one who enrolled in a private Lamaze class and three who took part in short courses at the hospitals where they delivered. These women expressed the value of

learning about topics such as what to expect during pregnancy, exercises during pregnancy, breathing during labor, what to expect during labor and delivery, and breastfeeding. Some study women who did not attend a childbirth class noted that they would have liked to have learned more before the onset of labor, but were not able to attend classes because of financial and/or time constraints.

Anticipated delivery method

In the prenatal care interviews, all of the participants said that they were planning on having a vaginal delivery. Interviews with both women and their providers demonstrated a strong preference for vaginal deliveries.

Women's preference

All study women said they desired a vaginal delivery except for one woman in Ciudad Juárez who said that although she desired a cesarean section to avoid a painful vaginal delivery, she was still planning on having a vaginal delivery. Two women, both living in El Paso, said they desired a vaginal delivery because cesarean sections are more expensive, even with health insurance. Most of the other participants said their desire was based on hearing from other women that the recovery after a cesarean delivery is longer than for a vaginal delivery. Others said they felt having a vaginal delivery was more "natural" than having a cesarean section.

Obstetricians' preference

The obstetricians expressed that vaginal deliveries are the standard for which they strive. As one doctor explained, "That's the normal way women deliver." Another doctor, in response to a question about which factors influenced the mode of delivery for a study participant, said:

> *She's a younger mom and had not really many high risk factors, a normal sized baby, and was motivated. Vaginal delivery was our goal. Our first goal is healthy mom and a healthy baby. After that, vaginal deliveries are second…I thought that would be the best for her. It would make her next pregnancy less complicated…make her recovery faster,*

> *and…help mature the baby's lungs, to make the transition from inside the womb to outside the womb.*

In response to the same question, a third doctor said:

> *She was a term pregnancy, the head was coming out first, she came to the hospital in labor, and…then we just let the labor progress and she dilated completely…So the factors…some of them are sort of like before they're in labor and then I'd say the main thing when they're in labor is how's the fetus tolerating the contractions and then, you know, can we achieve dilation.*

Labor induction

Although all study women during the prenatal period anticipated that their labor would begin spontaneously, they also believed that medical induction is sometimes necessary. They viewed induction as a medical decision made primarily by doctors as a way to mitigate risks to mothers and babies. However, in the prenatal interviews, women said that if an induction was necessary, they wanted their doctor to communicate with them about why. Interviews with the obstetricians provided us with additional information about why they recommended induction of labor for study participants.

Women's participation

During the observation of a prenatal care visit at 39 weeks with a woman in El Paso, her doctor recommended that they induce labor that same day, saying that there was an increased risk of stillbirth as the woman approached 40 weeks gestation. The woman, her husband, and the doctor spent more than 30 minutes discussing this. The doctor described, in detail, what would happen from the moment the woman entered the hospital until the actual delivery. Afterwards, during the prenatal interview, the participant said that she had a lot of confidence in her doctor and felt very comfortable, which prompted her to take the doctor's advice and go directly from the doctor's office to the hospital for an induction of labor. Before going to the hospital, she explained:

> *Sí, prefiero que me induzcan a esperarme, ya arriesgarme después de que, como que tenga que ser de emergencia…Como que prefiero hacer como ahorita, sí, como que todo más controlado, todo más planeado…Soy más como el doctor…no veo que necesidad es arriesgarnos. / Yes, I prefer that they induce me instead of waiting, increasing my risk and then, like it might be an emergency…Like I prefer to do it right now, yes, since everything is more controlled, everything is more planned…I'm more like the doctor…I don't see the need to increase our risk.*

In the postpartum interview, another El Paso woman described the decision-making conversation between her and her obstetrician regarding her induction of labor this way:

> *I went to the doctor and [the doctor] told me that I was already 41 weeks and that they wanted to schedule me for an induction, which is something I didn't want, but [the doctor] said it had already been too long. [The doctor] told me that the placenta was aging, and I would put my baby at risk, waiting longer, but my baby looked healthy but [the doctor] said it wasn't worth the risk for waiting, you know, for so long. So, I told [the doctor], you know, it's fine, I guess we'll do the induction. And then I went to [the doctor] the Thursday, when I was exactly 41 weeks. They set up the induction for Sunday, which was I guess 3 days after that.*

A few of the women noted in the postpartum interview that the decision to induce their labor was completely made by their doctor, and that they were not at all part of the process. For example, one participant in El Paso talked about the decision for her induction:

> *Interviewer: So how did you know to go to the hospital?*
>
> *Participant: [My doctor] told me when to go. Since [my doctor] was gonna induce me, they told me "Be at the hospital on the 23rd at 10 o'clock and we'll start the process of the baby."*
>
> *Interviewer: Do you know why [your doctor] decided to do the induction?*
>
> *Participant: No, I don't. I don't. To this day, I still don't know why.*

Obstetricians' perspectives

Interviews with the obstetricians revealed a wide variety of reasons they decided to induce labor. One doctor was going to be out of town during the week of the study participant's due date, so the doctor gave the woman the option of planning a medical induction of labor the week before if she wanted her doctor to be the one delivering her, which the woman agreed to.

Another doctor explained the process of deciding to induce a study participant, quoted above, in this way:

> *She had a favorable cervix and decreased fetal movement. And she was past 39 weeks…The stillbirth rate doubles from 38 to 40 weeks. Although uncommon, you know, it's still present, and an important factor.*

Labor augmentation

We did not specifically ask women about labor augmentation. However, this topic emerged as important from postpartum interviews with women and we therefore asked the delivering obstetricians we interviewed about why the augmentation took place. The women primarily characterized labor augmentation as a medical decision that was solely made by obstetricians, and the obstetricians explained the circumstances in which they augmented labor.

Women's (lack of) participation

Each of the four women we interviewed postpartum whose labor was augmented said that the nursing staff was communicating regularly with the delivering obstetrician during their labor and then relaying the messages back to them. The study participants explained that the nurses told them what was going to happen before they did what the doctor had ordered. This is exemplified by one interview with a woman in El Paso:

> *Interviewer: And you said you had IVs?*
>
> *Participant: Yeah, just the fluids and the Pitocin…so you can contract more…They wanted them every 2 minutes, and mine were between 2 and 9 minutes, so they wanted them closer together.*
>
> *Interviewer: Did your water ever break?*
>
> *Participant: No, they had to rupture it. They used some hook or something.*
>
> *Interviewer: …And who was communicating with you about this stuff?*
>
> *Participant: …The nurse tells you a lot of stuff…She's like, "Well, I talked to [your doctor]. They said that we need to break your water." So she did that.*

Obstetricians' perspectives

In response to asking about the decision to augment labor for one of the study participants, a doctor explained:

> *She came in having contractions, we admitted her, we looked at the monitor, and we said, "You know, the contractions aren't really quite as frequent enough as they could be to kind of make things progress. We're gonna put a little Pitocin in the IV to make them a little bit more frequent." Then, as long as she's progressing, we may want to leave the water bag intact. There are lots of reasons why you would break the water. One of them is to kind of like make things move along, and I'm frequently a big fan of that. If the patient comes in in the middle of the night, I may want to leave the water bag intact because I may want to do my delivery in the morning instead of doing it at night and that can slow down things a little bit, leaving it intact. If the fetal heart rate was in question, if there's any question about, you know, "Gosh, is the baby doing okay? Is the baby tolerating this okay?" that would be a reason to break the water bag so that you can put in internal monitors…But she came in in labor, we gave her some Pitocin to kind of keep the contractions at a nice pace...fetal tracing was fine, there wasn't really any need to break the water until we got towards the end.*

<u>Doctor-patient communication</u>

Our observations and interviews with women demonstrated the importance of communication between women and their doctors as a way to establish a trusting relationship.

Value of trust

A few women delivering in El Paso expressed having "really good communication" with their providers. One example of this was a Ciudad Juárez resident who both received her prenatal care and delivered in El Paso. She and her doctor were both bilingual but communicated exclusively in Spanish. In her interviews, she described feeling comfortable asking her doctor a lot of questions and also having a lot of trust and confidence in her doctor. She explained:

> *Yo tengo mucha confianza en el doctor...Entonces, cuando llegó al doctor, yo hacía mis preguntas. / I have a lot of trust in the doctor…Therefore, when I went to the doctor, I asked my questions.*

However, many women mentioned that their prenatal care appointments were very brief.

Several said that their doctors listened to their concerns and answered their questions, but did not explain as much as they would have liked, prompting the women to rely more on other sources of information about the birth process. An illustration of this comes from an excerpt from a prenatal interview in El Paso:

> *Interviewer: Has [your doctor] given you any information about delivery specifically?*
>
> *Participant: Yeah, they gave me pamphlets…they just say to read it over and if you have any questions to ask them, but I mean, there's so many things I can read online and so much information…so I've been reading a lot, so really, just on my own, mainly. Just the doctor if I have a question but [my doctor] is not really like "Oh my God, let's talk about this!"*

Women's participation in delivery method decision-making

In the prenatal care interviews, all participants said that there may be circumstances in which the doctor would decide that a cesarean section was necessary. However, as long as there was not an emergency, women wanted to participate in the decision about their own method of delivery. Some women participated by advocating for a vaginal delivery and taking advantage of labor and delivery staff support. Women ultimately evaluated their labor and delivery experience based on their participation in key decisions.

Women advocating for vaginal deliveries

In the prenatal interview, when discussing the possibility of having a cesarean section, several women expressed a desire to talk to their doctors about the possibility of either "trying harder" or "waiting longer" for a vaginal delivery. As one woman in El Paso explained, in response to a question about what she would expect the decision-making process for a cesarean section to look like:

> *I guess [my doctor] coming to us, my husband and I, and saying…"This and this is happening, so I recommend a C-section because of this risk." And I probably would ask if I can try harder or if we can wait a little bit or if it, what would be, how the conditions would need to change in order not to have the C-section, and see if those are plausible or*

not. And if not, then just proceed.

In addition to the idea of self-advocacy through asking to "try harder" or "wait longer" during labor, a few participants also noted the importance of having a birth plan in writing for their delivery team. One participant in El Paso recounted why she selected her obstetrician:

> *I talked to the doctor about wanting to have a natural birth and so [the doctor] said "Prepare your birth plan and I'll try to follow your instructions or your wishes as much as possible." So that's why I stayed with [that doctor].*

Labor and delivery staff support

Several participants highlighted the role of their labor and delivery team in supporting them. This was especially important for the women whose medical team advocated for them to have vaginal deliveries. For example, one participant in El Paso explained the importance of both being firm in her desire for a vaginal delivery and having her obstetrician support her:

> *[My doctor] was completely supportive of my decision to do it vaginally. [The doctor] came in and [the nurse] was like "She's not pushing well enough and I told her if she doesn't push then we're gonna have to do a C-section." And [the doctor] was like, "That's not what she wants… If she wants to have her vaginally and it takes us… time to get the baby out, it doesn't matter. We're gonna do what she wants to do because that's what's gonna make her comfortable." So [my doctor] completely supported my decision to have her vaginally…If you know you wanna have the baby vaginally, and they tell you you can't, don't listen to them…Tell them "No, I don't want that." And hopefully you have a supportive doctor like mine.*

Similarly, a woman in El Paso highlighted the role of the labor and delivery staff, especially the nurses, in helping her achieve her birthing goals:

> *I had dilated to 10 centimeters, but they said that the baby didn't come down. And so they said we have to wait…By 6 doctor came and said that the baby hadn't come down, and so they had to do a C-section. And I didn't want a C-section, so I asked [the doctor] if, uh, before [the doctor] arrived actually, with the nurse, I was pushing. And [the doctor] said that we didn't make any progress. And so when doctor came, [the doctor] said C-section and I said can we try like another half an hour and see if we make progress. And doctor was okay with that, so [the doctor] left and then I worked with the nurses again. And when doctor came back, [the doctor] said that yeah, it was good, we could have vaginal delivery. But then there was a problem 'cause there was something that was obstructing the baby's path…my urethra. And so, [the doctor]… walked out the*

room and there was a urologist that was just walking down. And so he came and he checked me and he said yes, it's the urethra that is coming first, then the baby. And he said it wasn't good. But then the nurse said that if she could hold it and push…it in while I was pushing for the baby to come out, and doctor said yeah, it could work…So that's what we did.

Some study women did not feel supported by their labor and delivery staff. An El Paso woman, whose medical induction of labor had failed, ended up having a cesarean section performed over the weekend by her obstetrician's partner because her obstetrician was not on-call. In her postpartum interview, she explained:

Participant: I never saw [the delivering doctor] until…[the delivering doctor] was like already ready to open me, I didn't see [the delivering doctor] at all. [The delivering doctor] didn't tell me anything…It was somebody else around. I never saw [the delivering doctor], and when I woke up I never saw [the delivering doctor] either.

Interviewer: So you never talked to [the delivering doctor]?

Participant: No, until the day after, [my doctor] came. But [the delivering doctor], no. She just said, "Oh, I'm [the delivering doctor], I'm covering for [your doctor] and I'm gonna do a C-section." That's all.

Interviewer: So who told you that they were going to do a C-section?

Participant: The nurses…At the beginning they just told me, like the one that came for me to sign [the consent form]. She just told me, "I'm just going to make you sign it in case we need it." She never told me like, "Oh, we're gonna do it right now." No, she just told me, "In case you need it [a cesarean delivery]." And then I signed it and then another one came in and, "Oh we're gonna take you in." So they didn't really tell me.

Evaluation of experience

In the postpartum interviews, the participants who said that they felt they were part of the decision regarding their delivery method also all said that they were very pleased with their delivery team and with their experience in general. On the other hand, some of the women who said that they did not feel part of what was happening to them expressed a disliking towards the hospital, the nurses, and the doctor. Several of these participants noted that they would seek out a new obstetrician for their next pregnancy. One woman in Ciudad Juárez, whose labor was

induced twice over the course of three days and whose delivery was ultimately assisted by forceps said that although she had desired a vaginal delivery, next time she would ask for a planned cesarean section to avoid suffering again.

Barriers to participation in delivery method decision-making

We did not specifically ask women about barriers to participating in the decision about their own method of delivery. However, access to childbirth classes and the structure of prenatal care visits emerged as important themes that may have prevented women from being informed about the birthing process and therefore from participating in decision-making.

Access to childbirth classes

A few study women in both Ciudad Juárez and El Paso noted that cost was a barrier for them to take childbirth classes; either the classes themselves were too expensive or the associated costs, such as transportation or having to miss work to attend, were too burdensome. Additionally, some study women said that the classes offered at the hospital where they delivered were at inconvenient times.

Structure of prenatal care visits

Women in both cities said they wanted their doctor to talk to them about their method of delivery so that they could participate in decision-making. However, because prenatal care visits were usually brief, women did not learn a lot about delivery decisions from their doctors before the onset of labor. Additionally, for women receiving care in Ciudad Juárez, lack of privacy during the prenatal care visits was a barrier to asking their providers questions. These structural barriers are exemplified by an interview with a woman in Ciudad Juárez:

> *Participant: Cuando yo llego, que estoy aquí, lo máximo que dura [la cita] son 5 minutos... Me revisan y escuchan el corazón de mi hijo y todo y ya. Ya no más me dicen para cuándo es la otra cita y me dice el doctor si tengo preguntas y ya. / When I arrive, when I'm here, the maximum they [the appointment] last is 5 minutes… They check me*

and listen to my son's heart and all and that's it. All they do is tell me when my next appointment is and my doctor asks if I have questions and that's it.

Interviewer: ¿Y tiene tiempo suficiente para, por ejemplo, preguntar el medico las preguntas que tiene? / And do you have sufficient time, for example, to ask your doctor the questions you have?

Participant: Sí. Sí tengo tiempo pero, como siempre con lo que estás solo con hombres, nunca me animo preguntarles cosas. / Yes. Yes, I have time but, since you're always only with males, I never get the courage to ask them things.

Interviewer: Normalmente, ¿Cuántas otras personas hay en el cuarto? / Normally, how many other people are in the room?

Particpant: Hay, aparte del doctor, hay como 3 más personas. / There are, apart from the doctor, there are like 3 more people.

Discussion

This is the first study to examine cesarean birth in U.S. and Mexican border communities from the perspectives of women and their doctors. Interviewing women both before and after they delivered, observing a prenatal care visit, and interviewing women's doctors after delivery allowed us to learn more about decision-making than possible from retrospective interactions alone.

A theme that ties the results of this study together is trust and confidence. The importance to study women of having trust and confidence in a close friend or relative, her doctor, and oneself during pregnancy, labor, and delivery was evident across all of the topics explored in our analysis. The women in our study considered their most important source of information regarding the birthing process to be their close female relatives and friends. Most women planned to have a vaginal delivery precisely because of what they learned about method of delivery from their relatives and friends. Further, two of the women used the negative experiences of their close relatives and friends to motivate them to advocate for a vaginal delivery, even when their medical team was suggesting a cesarean section. Women also

mentioned their level of trust and confidence in their doctor and how this ultimately impacted events during their delivery. Similarly, the women who expressed self-confidence and were most informed about the birthing process were also motivated to participate in decisions that were made prenatally and once they were in the labor and delivery unit.

Women who have never given birth before are more likely to have a cesarean section than women who have previously given birth vaginally, and women who have previously had a cesarean section will almost always have another (Barber, et al., 2011; Gamble, Creedy, McCourt, Weaver, & Beake, 2007). Therefore, reducing the number of cesarean deliveries in primigravidas is a strategic way to reduce the overall cesarean utilization rate. While many health systems have attempted interventions to reduce cesarean deliveries, no published evidence supports the success of any single response to rising cesarean delivery rates; rather, authors suggest that a multi-faceted approach is necessary (E. Main, et al., 2011).

Based on the themes from this research, there are three components that future interventions to reduce cesarean delivery rates in the U.S.-Mexico border region might consider incorporating. First, interventions might benefit from the inclusion of childbirth education classes led by promotoras, or female lay community health workers (Koskan, Hilfinger Messias, Friedman, Brandt, & Walsemann, 2012). This addresses the desire of the women in our study to attend childbirth classes. Promotoras are prevalent and valued in border communities (Reinschmidt et al., 2006), and may be able to work with primigravidas and their families to enhance both knowledge of labor and delivery and skills to communicate birthing desires to obstetricians. The women may feel more comfortable asking questions of a promotora versus their medical doctor, and the classes may empower and motivate women to participate more in their prenatal, labor, and delivery care. In our study, the women who self-advocated and asked

questions throughout their birth process may have avoided cesarean deliveries that are associated with more subjective medical indications, such as arrest of dilation or arrest of descent (Barber, et al., 2011).

Secondly, successful interventions may include regular, binational scientific training about delivery method and related topics (E. Main, et al., 2011). Women in our study relied on the expertise of their medical providers. Practitioners, including doctors, nurses, and midwives, who stay up-to-date on the literature regarding cesarean deliveries are better informed and more likely to provide accurate information to women. Given that these individuals are often busy, binational continuing education may augment reading professional journals. Several published articles have suggested the use of continuing education for providers as a way to reduce cesarean delivery rates (Klein, 2012; Klein et al., 2011; E. K. Main et al., 2012; Poma, 1998), and this intervention has been evaluated in its utility to limit usage of episiotomy in one academic medical center (Goldberg et al., 2006). As part of a multi-faceted intervention, professional continuing education in a binational setting may provide an opportunity to ensure that practitioners on the U.S.-Mexico border are well-informed about the maternal and fetal benefits of vaginal delivery.

Finally, successful interventions may also be based on future community-based participatory research (CBPR) about method of delivery decision-making. CBPR is a unique approach that includes persons affected by the issue under study and other key stakeholders in every phase of the work, and it has been shown to translate research knowledge into effective and sustainable interventions in areas such as child health (National Institutes of Health, 2012; Vaughn, Wagner, & Jacquez, 2013). CBPR may provide the opportunity for stakeholders such as obstetricians, prenatal care providers, midwives, promotoras, and women on both sides of the

U.S.-Mexico border to share knowledge, experiences, and concerns, which could ultimately improve the quality of prenatal, labor, and delivery care. This is different from continuing professional education, as CBPR focuses on bringing together many stakeholders, including pregnant women and mothers in this case, to share ideas and develop interventions that they view as appropriate and feasible.

As with all qualitative studies, our results are not generalizable beyond the study population. Our study design, which involved recruiting El Paso study women and their obstetricians prenatally, was difficult to implement in Ciudad Juárez, where obstetricians in the public sector deliver babies but do not usually provide prenatal care ("Guía de Practica Clínica: Control Prenatal con Enfoque de Riesgo.," 2008). Therefore, we were unable to ascertain the level of communication and trust between study women in Ciudad Juárez and their delivering obstetricians. Despite losing several women to follow-up, we still reached saturation in our analysis after reviewing all of the data for eight study participants. Additional interviews in El Paso would have been unlikely to change our results, although having more postpartum interviews with women and having the opportunity to interview prenatal care providers and obstetricians in Ciudad Juárez may have further enriched our results.

Our study results demonstrate that delivery method decisions can be complex and involve multiple influences, including women's level of knowledge about birth, doctor-patient communication, and women's participation in decision-making. We observed that women who were able to clearly communicate their desire for a vaginal delivery to their doctor during labor and delivery were able to avoid a cesarean section. Clear communication between women and their doctors earlier in pregnancy may also have contributed to the low number of cesarean deliveries among women in our study.

The results of this study may be useful to public health professionals who are developing interventions to reduce cesarean deliveries in the U.S.-Mexico border region. Three components that future multi-faceted interventions might consider incorporating are childbirth education classes led by promotoras, professional continuing education about the benefits of vaginal delivery, and CBPR about method of delivery decision-making.

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Chapter 4: Additional Results, Conclusions, and Recommendations

Additional Results

Due to page limitations, I did not include information related to anesthesia in the manuscript.

Anesthesia Results

Every woman that I interviewed in the postpartum period said she received an epidural. The majority of participants in El Paso reported asking the nursing staff for the epidural. For some women, including all of the women in Ciudad Juárez, the nursing staff specifically asked the laboring woman if she wanted an epidural. Almost all participants expressed being the sole decision-maker about receiving the epidural, which was precisely what the participants in El Paso said they anticipated in the prenatal care interviews. However, before going into labor, a few El Paso women said that they did not think they would want or need the epidural.

In contrast, none of the women in Ciudad Juárez seemed to view an epidural as an expected part of their labor. They did not seem to know anything about receiving *la epidural/la raquia/el bloqueo* in the case of a vaginal delivery; when I asked about these, I was consistently told that they were only for cesarean deliveries. However, because I was at the hospital while two of the participants in Ciudad Juárez were laboring, I observed the nurses asking the women if they wanted an epidural because they were not "handling the pain." Both of these women accepted the epidural and viewed it positively, saying that it relieved their pain.

Anesthesia Discussion

The ubiquitous use of epidurals in our study is unsurprising in light of Listening to Mothers II, which found that 71% of women who had a vaginal birth in the United States in 2005

reported using an epidural or spinal analgesia.[109] A small proportion of mothers (7%) reported experiencing pressure from a health professional to have epidural analgesia.

In Listening to Mothers II, 91% women who had an epidural considered it to be very helpful (81%) or somewhat helpful (10%) in making them more comfortable and relieving their pain, while only 4% rated it as not helpful.[109] Although we did not ask that question specifically in our study, most of the participants in the prenatal period and all of the participants in the postpartum period said that the epidural was important to them for "not feeling the pain of delivery." Additionally, we concluded the postpartum interviews with women by asking, "If you have another child, is there anything you would want to be different?" and "What advice would you offer women who are currently pregnant with their first baby about labor and delivery?" Nearly all participants mentioned epidurals in answering these questions. The most common response to the former question was "I would ask for the epidural earlier" and the most common response to the latter question was "Get an epidural."

However, in both the prenatal and postpartum interviews in El Paso, participants also noted that the epidural has side effects, such as "slowing down labor." Additionally, most participants commented that "you don't feel anything, so you cannot push when you're supposed to be pushing." This was also a significant finding in Listening to Mothers II: among mothers who had a vaginal birth, 77% of those who did not have an epidural said they had a strong urge to push the baby out, compared to 41% of those mothers with an epidural ($p < .01$).[109]

Additionally, participants mentioned other side effects of the epidural that they did not expect. For example, one woman in El Paso explained:

> *I didn't know the effects of the epidural were going to last that long. They lasted for at least two days, so the baby was very sleepy and I was sleepy. And so when she came to teach me how to breastfeed him, the baby was asleep all the time and we were trying to wake him up and he would latch for a few seconds and then he would fall asleep…But I*

> *didn't know it was also part of the effect of the epidural. So after the two days, he was completely awake and he would cry a lot. His behavior was completely different.*

Another woman in El Paso said:

> *Participant: Get the epidural…But it does have side effects though. That's the only bad thing.*
>
> *Interviewer: Like what?*
>
> *Participant: I don't remember all of them, but I know one of them was headaches. And I guess 'cause I got two epidurals I had bad headaches for like 3 days after…And that epidural really, it screwed up my system. Like, my headaches were bad and I think that's what made my feet swell…Like you couldn't even see my ankles.*

There have been very few published studies that assess women's knowledge of side effects of epidurals. In Listening to Mothers II, virtually everyone felt that all (78-81%) or most (17-19%) side effects epidural analgesia should be disclosed.[109] In a study of 46 women who had a vaginal delivery within the previous six months, new mothers were given a test of epidural knowledge.[110] The mean score, out of a possible 28 points, for women who had an epidural was 15.73, and the mean score for women who did not have an epidural was 18.70 ($p=0.052$). When the authors analyzed their data again, this time comparing women who decided before going into labor to have an epidural and women who decided before going into labor not to have an epidural, the mean scores were 14.91 and 18.95, respectively ($p < 0.05$). However, the extent to which women are fully and regularly informed about side effects of epidurals, particularly those effects that are mild or infrequent, is not known.[111]

Undoubtedly, more research is needed in order to understand whether women are actually giving informed consent to an epidural after being told all of the risks and benefits. However, this could also be an important area of intervention in two ways: (1) women and their babies may benefit from education related to epidural analgesia before the onset of labor in order to help inform their decision, and (2) although few women in the United States request cesarean

deliveries,[39] it is possible that those women will experience less fear of vaginal delivery[27,40-44] from learning more about epidurals.

Study Strengths and Limitations

Data collection

Purposive sampling was used in recruiting women for this study. We originally had a goal of recruiting 15 women on each side of the border; however, because the study took place over a summer, it was challenging to have regular contact with doctors on both sides of the border, most of who took at least one week of vacation during the study period. This was especially true in the *Seguro Social* hospital, where data collection did not begin until July 24. Additionally, many of the participating obstetricians did not have a lot of nulliparous pregnant women who would deliver before my departure date.

In Ciudad Juárez, there were a few issues related to privacy that may have caused women to be less comfortable with the interview. In one hospital, male nursing students, all of whom were approximately 16 years old, were instructed to observe the prenatal interviews. I asked the women if this was okay. Two of the women asked the young men to leave, but it is possible that the other three women did not feel comfortable requesting this. In the other hospital, interviews with the women took place in the hallway of the labor and delivery area, where there was almost no privacy. I asked the women if they were comfortable, but their nurses said it was fine and remained within earshot for the duration of the interviews.

Although I have professional working proficiency in Spanish, including Mexican Spanish, I am not a native speaker. Additionally, I am white, which may have created a barrier in itself, with nearly 90% of residents of El Paso being Hispanic.[112] However, because I was an outsider to both El Paso and Ciudad Juárez, the participants may have felt more inclined to

explain information that may have otherwise been assumed.

Study design

The longitudinal design of this study allowed us to capture nulliparous women's knowledge and attitudes regarding method of delivery towards the end of pregnancy, directly observe the patient-doctor communication during a prenatal care visit, follow-up with women after delivery, and also to hear the perspective of the doctor. This allowed us to learn more about the decision-making than we would have from one retrospective interaction alone while also minimizing the recall bias that would have been introduced if we asked women about their pre-delivery thoughts after they delivered. The qualitative nature of this study also allowed us to capture the emic point of view of both women and their doctors in a more nuanced way than a traditional quantitative method.

Unfortunately, the longitudinal design also meant that we lost several women to follow-up, especially in Mexico. Although every participant indicated that she would be willing to talk to me after delivery, the women may have faced unexpected challenges related to being new mothers or may have decided for another reason that they no longer wanted to participate in the study. Similarly, in Ciudad Juárez, we were unable to interview any of the doctors due to logistic barriers. However, we still reached saturation in our analysis after reviewing all of the data for eight study participants.

Recommendations

Interventions to reduce cesarean births among primigravidas on the U.S.-Mexico border might benefit from the inclusion of childbirth education classes led by *promotoras*, or female lay community health workers.[113] This addresses the desire of the women in our study to attend childbirth classes. *Promotoras* are prevalent and valued in border communities, and may be able

to work with primigravidas and their families to both increase knowledge of labor and delivery and strengthen skills to communicate birthing desires to obstetricians. The women may feel more comfortable asking questions of a *promotora* versus their medical doctor, and the classes may empower and motivate women to participate more in their prenatal, labor, and delivery care. In our study, the women who self-advocated and asked questions throughout their birth process may have avoided cesarean deliveries that are associated with more subjective medical indications, such as "arrest of dilation" or "arrest of descent."[24]

Successful interventions may also be based on future community-based participatory research (CBPR) about method of delivery decision-making. CBPR is a unique approach that includes persons affected by the issue under study and other key stakeholders in every phase of the work, and it has been shown to translate research knowledge into effective and sustainable interventions in areas such as child health.[114,115] CBPR may provide the opportunity for stakeholders such as obstetricians, prenatal care providers, midwives, *promotoras*, and women on both sides of the U.S.-Mexico border to share knowledge, experiences, and concerns, which could ultimately improve the quality of prenatal, labor, and delivery care.

Additionally, successful interventions may include regular, binational scientific training about delivery method and related topics.[107] Women in our study relied on the expertise of their medical providers. This was especially evident by the woman in our study whose doctor recommended that she go to the hospital for an induction of labor directly from her prenatal care visit at 39 weeks because "the stillbirth rate doubles from 38 to 40 weeks." This obstetrician was quoting a study from Norway that was published in 2001.[116] However, throughout the past decade, the science has suggested that induction of labor should not take place prior to 39 weeks, and very recently, the American College of Obstetricians and Gynecologists recommended:

"Don't schedule elective, non-medically indicated inductions of labor or cesarean deliveries before 39 weeks 0 days gestational age."[108] Practitioners, including doctors, nurses, and midwives, who stay up-to-date on the literature regarding cesarean deliveries are better informed and more likely to provide accurate information to women. Given that these individuals are often busy, binational continuing education may augment reading professional journals.

Conclusions

Overall, this study demonstrates that delivery method decisions are complex and involve multiple influences, including women's level of knowledge about birth, doctor-patient communication, and women's participation in decision-making. Feeling confident and well-informed about birth may have led women to participate more with their doctors in decisions earlier in pregnancy before we became involved and in the late stages of pregnancy, labor, and delivery, as we observed. This may have helped women in our study avoid cesarean sections. The results of this study may help both health care providers and public health professionals create successful interventions to reduce cesarean deliveries in the U.S.-Mexico border region.

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Appendix I: Prenatal care visit observation guide

Participant number:
Woman's due date:

Date and location of PNC visit:

Appointment time:
Time physician enters exam room:

Time visit begins:
End of appointment:

Who came with patient to appointment:
Who else in exam room:

Component	**Notes**
Overall assessment __Blood pressure __Weight	
Labs __UA __Blood (hemoglobin/hematocrit, repeat STI)	
Fetal assessment __Fundal height/growth __Fetal lie __Ultrasound	
Counseling __Nutrition __Signs and symptoms of preterm labor __Birth plan (delivery method, anesthesia, induction) __Physiological/emotional changes __Promotion of breastfeeding __Postpartum family planning	
Other	
Woman's questions	

Appendix IIa: In-depth interview guide for prenatal interview with women

Participant number:
Date and location of interview:

Introduction:

Thank you for agreeing to do an interview today (and for allowing me to observe your prenatal care visit). As you already know, my name is Carla DeSisto and I am a student of public health at Emory University in Atlanta, Georgia. As part of my master's program, I am working with investigators from the Centers for Disease Control (CDC), the Autonomous University of Ciudad Juárez (UACJ), and other institutions to learn more about how a woman, along with her doctor, make certain decisions about her method of delivery and other childbirth issues. We are especially interested in the opinions of pregnant women like you who have never given birth before, and I am interviewing other women from both El Paso and Ciudad Juárez as well. Your answers and those of the other women are important because they will help us better understand how certain decisions are made and whether that decision process can be improved in any way.

I am interested in hearing your opinions and experiences with pregnancy so far. There are no right or wrong answers, so please just be honest about what you think.

Everything you tell me will only be used for this research project, and will not be shared with anyone outside the research team. Also, your name will be removed from study data as soon as interviews are complete so that no one can ever identify you with any of the answers you give. I would like to record this conversation because I will not be able to write as fast as we speak and I don't want to miss any of the information you give me. Is it okay if I record this interview? Please speak slowly and clearly since later I will be listening to the tape and typing up this conversation for my research.

You already signed a consent form before your prenatal care visit. However, I want to remind you that this interview is completely voluntary. This means that if you want to stop at any time or don't feel comfortable answering a question, please let me know.

This interview will last about an hour. I have a list of questions that I would like us to talk about, but please feel free to bring up any other issues that you feel are also important for us to know about.

Do you have any questions before we begin?

--

Gracias por su participación en esta investigación, y por permitirme observar su visita prenatal. Como ya sabe, mi nombre es Carla DeSisto y soy estudiante de salud pública en la Universidad de Emory en Atlanta, Georgia. Como parte de mis estudios posgrados, estoy trabajando con investigadoras de Centro para el Control y la Prevención de Enfermedades (CDC), la Universidad Autónoma de Ciudad Juárez, y otros grupos para aprender más sobre como una mujer y su médico hacen ciertas decisiones sobre el método del parto y otras relacionadas con el embarazo. Tenemos mucho interés en las opiniones de mujeres embarazadas, como usted, que nunca han dado a luz, en El Paso y Ciudad Juárez. Las respuestas de usted, y las de las otras mujeres, son importantes porque van a ayudarnos entender mejor como se hace ciertas decisiones y si se puede mejorar el proceso.

Me interesa escuchar sus opiniones y sus experiencias con el embarazo hasta ahora. No hay respuestas correctas ni equivocadas; entonces, por favor, sea honesta de lo que piensa.

Todo lo que me dice solo se utilizará para esta investigación, y no será compartido con nadie fuera del equipo de investigadoras. Además, vamos a quitar su nombre de los registros del estudio después de terminar las entrevistas para que nadie pueda identificarle. Quiero grabar esta conversación porque no puedo escribir tan rápido como hablamos y no quiero perder sus palabras. ¿Está bien si grabo esta entrevista? Por favor, hable lentamente y claramente, porque más tarde voy a escuchar al audio para escribir en computadora toda la conversación para esta investigación.

Usted ya firmó el formulario de consentimiento antes de su visita prenatal. Sin embargo, quiero recordarle que esta entrevista es completamente voluntaria. Si desea detener en cualquier momento o no se siente cómoda respondiendo a una pregunta, por favor déjeme saber.

Esta entrevista va a durar aproximadamente una hora. Tengo una lista de preguntas para usted, pero por favor mencione otros asuntos que piensa que son importantes también con respeto a la investigación.

¿Tiene preguntas antes de empezar?

Part I:

1. When is your due date? / *¿Cuándo se va a llegar el parto?*

2. What is your date of birth? (How old are you?) / *¿Cuál es su fecha de nacimiento? (¿Cuántos años tiene?)*

3. What is your height? / *¿Sabe su altura?*
   Follow-up: How much did you weigh before you became pregnant? / *¿Cuánto pesaba antes de su embarazo?*

4. Who do you live with? / *¿Con quién vive?*
   Probe: Husband/partner, other family members / *Esposo/compañero, otros miembros de familia*

5. Are you part of a religious community, such as a church? / *¿Usted es parte de una comunidad religiosa, como una iglesia?*
   Probe: Which one? / *¿Cuál?*

Part II: Delivery methods
Now I'd like to learn a little bit about what you are thinking about as you look ahead to the delivery of your baby. / *Ahora, me gustaría aprender un poco sobre lo que está pensando mientras espera su parto.*

6. Currently, what type of delivery do you think you will have? / *Actualmente, ¿Qué método piensa que va a usar para dar a luz?*
   Probe: cesarean, vaginal / *cesárea, vaginal*

   Follow-up: How long have you thought this? / *¿Por cuánto tiempo ha pensado esto?*

Probe: Since before getting pregnant, since the first prenatal care visit… / *Antes del embarazo, en la primera visita prenatal…*

7. What sources of information about method of delivery have been most important for you? / *¿Cuáles son los fuentes de información sobre el método del parto mas importantes para usted?*

a) Have you talked to your doctor about your method of delivery? / *¿Ha hablado con su médico sobre el método del parto?*

-What did s/he say? / What did you learn? / *¿Qué dijo? / ¿Qué aprendió?*

b) Have you talked to your partner (or whoever she lives with) about your method of delivery? / *¿Ha hablado con su esposo (or whoever she lives with) sobre el método del parto?*

-What did s/he say? / What did you learn? / *¿Qué dijo? / ¿Qué aprendió?*

c) Have you talked to other members of your family, such as your mother, sisters, aunts, or cousins, about method of delivery? / *¿Ha hablado con otras personas en su familia, como su madre, sus hermanas, sus tías, o sus primas, sobre el método del parto?*

-Who? / *¿Quién?*

-What did they say? / What did you learn? / *¿Qué dijeron? / ¿Qué aprendió?*

-If they've given birth, how did they deliver? / *Si han dado a luz, ¿Qué método usaron para el parto?*

d) Have you talked to other women, such as your friends, about method of delivery? / *¿Ha hablado con otras mujeres, como amigas, sobre el método del parto?*

-Who? / *¿Quién?*

-What did they say? / What did you learn? / *¿Qué dijeron? / ¿Qué aprendió?*

-If they've given birth, how did they deliver? / *Si han dado a luz, ¿Qué método usaron para el parto?*

e) (if applicable) Have you talked to members of your church about method of delivery? / *¿Ha hablado con miembros de su iglesia sobre el método del parto?*

-Who? / *¿Quién?*

-What did they say? / What did you learn? / *¿Qué dijeron? / ¿Qué aprendió?*

-Do other members usually deliver vaginally or cesarean? Why do you think that is? / *¿Los otros miembros de esta comunidad normalmente dan a luz por cesárea o por la vagina? ¿Por qué?*

f) Have you talked to anyone else about method of delivery? / *¿Ha hablado con alguien más sobre el método del parto?*

-Who? / *¿Quién?*

-What did they say? / What did you learn? / *¿Qué dijeron? / ¿Qué aprendió?*

g) Have you read any books about childbirth? / *¿Ha leído libros sobre el parto?*

-What did you learn? / *¿Qué aprendió?*

h) Have you seen any movies or videos about childbirth? / *¿Ha visto películas o videos sobre el parto?*

-What did you learn? / *¿Qué aprendió?*

i) Have you attended childbirth classes? / *¿Ha asistido clases del parto?*
-Where? / *¿Dónde?*
-What did you learn? / *¿Qué aprendió?*

j) Have you learned about childbirth from anywhere else that we haven't mentioned? / *¿Ha aprendido sobre el método del parto de otras fuentes que no hemos mencionado hoy?*

k) Thinking about all of the sources of information regarding delivery method that you have mentioned, which has been the most important to you? / *Pensando en todas las fuentes de información sobre el método del parto que usted ha mencionado, ¿Cuál es la más importante para usted?*
-Why? / *¿Por qué?*

8. Sometimes unexpected things happen or are learned before or during labor that can lead to a decision to have a cesarean delivery instead of a vaginal delivery. Have you talked to your doctor or others about this? / *A veces, cosas inesperadas suceden o son aprendidas antes o durante el parto que pueden llevar a la decisión tener una cesárea en vez de un parto por vagina. ¿Ha hablado con su médico u otras personas sobre esta posibilidad?*

Probe: Who did you talk to about this? / *¿Con quién habló?*
What did you learn? / *¿Qué aprendió?*

Follow-up: What are the factors that could lead to a cesarean instead of a vaginal delivery? / *¿Qué son los factores que podrán conducir a un parto por cesárea en vez de un parto vaginal?*
If any of these factors occur during your labor and delivery, do you expect your doctor will discuss them with you? / *¿Si se encuentra cualquiera de estos factores, espera que su médico vaya a discutirlo consigo?*
Do you expect to be involved in the decision to have a cesarean delivery if one is made? / *¿Espera participar en la decisión de tener una cesárea si una está hecha?*

9. Do you have any concerns or worries about delivering your baby vaginally? / *¿Tiene algunas preocupaciones sobre da a luz por vagina?*

Probe: Please tell me about them. / *Por favor háblame sobre esto.*

Follow-up: Would you have concerns or worries about having a cesarean birth? Please tell me about them. / *¿Tendría preocupaciones sobre tener una cesárea? Por favor háblame sobre esto.*

Anesthesia

Now I'd like to talk to you about medication that is sometimes used by women during labor and delivery. / *Ahora me gustaría hablar con usted sobre la medicina que a veces es usado por las mujeres durante el parto.*

10. Have you talked to anyone about pain medications or anesthesia that may be used during your labor and delivery? / *¿Ha hablado con alguien sobre los medicamentos para dolor o anestesia que se puede utilizar durante su parto (como la raquia/el bloqueo)?*

a) Have you talked to your doctor about using an epidural (replace with woman's words)? / *¿Ha hablado con su médico sobre la epidural?*

-What did s/he say? / What did you learn? / *¿Qué dijo? / ¿Qué aprendió?*

b) Have you talked to your partner (or whoever she lives with) about using an epidural (replace with woman's words)? / *¿Ha hablado con su esposo sobre la epidural?*
-What did s/he say? / What did you learn? / *¿Qué dijo? / ¿Qué aprendió?*

c) Have you talked to other members of your family, such as your mother, sisters, aunts, or cousins, about using an epidural (replace with woman's words)? / *¿Ha hablado con otras personas en su familia, como su madre, sus hermanas, sus tías, o sus primas, sobre la epidural?*
-Who? / *¿Quién?*
-What did they say? / What did you learn? / *¿Qué dijo? / ¿Qué aprendió?*
-If they've given birth, did they use an epidural (replace with woman's words)? / *Si han dado a luz, ¿usaron una epidural?*

d) Have you talked to other women, such as your friends, about using an epidural (replace with woman's words)? / *¿Ha hablado con otras mujeres, como amigas, sobre la epidural?*
-Who? / *¿Quién?*
-What did they say? / What did you learn? / *¿Qué dijo? / ¿Qué aprendió?*
-If they've given birth, did they use an epidural (replace with woman's words)? / *Si han dado a luz, ¿usaron una epidural?*

e) (if applicable) Have you talked to members of your church about using an epidural (replace with woman's words)? / *¿Ha hablado con miembros de su iglesia sobre la epidural?*
-Who? / *¿Quién?*
-What did they say? / What did you learn? / *¿Qué dijo? / ¿Qué aprendió?*
-Do other members of the congregation usually use an epidural (replace with woman's words)? *Why do you think that is? / ¿Los otros miembros de esta comunidad normalmente usan una epidural durante el parto? ¿Por qué?*

f) Have you talked to anyone else about using an epidural (replace with woman's words)? / *¿Ha hablado con alguien más sobre la epidural?*
-Who? / *¿Quién?*
-What did they say? / What did you learn? / *¿Qué dijo? / ¿Qué aprendió?*

g) Have you read any books about using an epidural (replace with woman's words)? / *¿Ha leído libros sobre la epidural durante el parto?*
-What did you learn? / *¿Qué aprendió?*

h) Have you seen any movies or videos about using an epidural (replace with woman's words)? / *¿Ha visto películas o videos sobre la epidural durante el parto?*
-What did you learn? / *¿Qué aprendió?*

i) (if applicable) What you have learned in your childbirth classes about epidurals (replace with woman's words)? / *¿Qué ha aprendido en sus clases del parto sobre la epidural?*

j) Have you learned about epidurals (replace with woman's words) from anywhere else that we haven't mentioned? / *¿Ha aprendido sobre la epidural de otras fuentes que no hemos mencionado hoy?*

k) Thinking about all of the sources of information regarding epidurals (replace with woman's words) that you have mentioned, which has been the most important to you? / *Pensando en todas las fuentes de información sobre la epidural que usted ha mencionado, ¿Cuál es la más importante para usted?*

-Why? / *¿Por qué?*

11. Have you thought about using any type of pain medication or anesthesia, such as an epidural, for your delivery? / *¿Ha pensado en utilizar algún tipo de medicamento para dolor o anestesia, como un epidural/la raquia/el bloqueo, durante su parto?*

Tell me about what you are currently thinking. / *Por favor dígame que está pensando.*

How long have you thought this? / *¿Por cuánto tiempo ha pensado esto?*

12. Who will make the final decision about whether or not an epidural (replace with woman's words) is used during your labor and delivery? / *¿Quién va a hacer la decisión final para usar o no usar la epidural/la raquia/el bloqueo?*

When does this decision need to be made by? / *¿Hasta cuando puede decidir?*

Induction

Next I'd like to ask you about how you are expecting to go into labor and what you are expecting your labor to be like. / *Ahora me gustaría preguntarle acerca de cómo espera empezar su parto.*

13. Do you expect to go into labor naturally, or spontaneously? / *¿Espera que su parto va a empezar naturalmente (o espontáneamente)?*

Follow-up: How will you know that your labor is beginning? / *¿Cómo va a saber que viene su bebe?*

14. Has your doctor given you a date that you have to deliver by? / *¿Su doctor le ha dicho el último día que debe dar a luz?*

Follow-up: What is that date? / *¿Cuál es la fecha?*

If you don't go into labor spontaneously (use woman's words) would you consider having your labor induced? / *Si no empieza su parto espontáneamente antes de este día, ¿consideraría tener una inducción, o sea, provocaría el parto?*

Please tell me about the circumstances that would make a woman need her labor induced. / *Por favor, háblame más sobre las circunstancias en que una mujer necesitaría una inducción*

15. Have you talked to anyone about induction? / *¿Ha hablado con alguien sobre la inducción/provoca del parto?*

a) Have you talked to your doctor about induction? / *¿Ha hablado con su médico sobre la inducción/provoca del parto?*

-What did s/he say? / What did you learn? / *¿Qué dijo? / ¿Qué aprendió?*

b) Have you talked to your partner (or whoever she lives with) about inductions? / *¿Ha hablado con su esposo sobre la inducción/provoca del parto?*

-What did s/he say? / What did you learn? / *¿Qué dijo? / ¿Qué aprendió?*

c) Have you talked to other members of your family, such as your mother, sisters, aunts, or cousins, about inductions? / *¿Ha hablado con otras personas en su familia, como su madre, sus hermanas, sus tías, o sus primas, sobre la inducción/provoca del parto?*

-Who? / *¿Quién?*

-What did they say? / What did you learn? / *¿Qué dijeron? / ¿Qué aprendió?*

-If they've given birth, was their labor induced? / *Si han dado a luz, ¿los partos fueron provocados/le tuvieron que inducir?*

d) Have you talked to other women, such as your friends, about inductions? / *¿Ha hablado con otras mujeres, como amigas, sobre la inducción/provoca del parto?*

-Who? / *¿Quién?*

-What did they say? / What did you learn? / *¿Qué dijeron? / ¿Qué aprendió?*

-If they've given birth, was their labor induced? / *Si han dado a luz, ¿los partos fueron provocados/le tuvieron que inducir?*

e) (if applicable) Have you talked to members of your church about inductions? / *¿Ha hablado con miembros de su iglesia sobre la inducción/provoca del parto?*

-Who? / *¿Quién?*

-What did they say? / What did you learn? / *¿Qué dijeron? / ¿Qué aprendió?*

-Do other members of the congregation usually have their labor induced? Why do you think that is? / *¿Los otros miembros de esta comunidad normalmente necesitan la inducción/provoca del parto durante el parto? ¿Por qué?*

f) Have you talked to anyone else about inductions? / *¿Ha hablado con alguien más sobre la inducción/provoca del parto?*

-Who? / *¿Quién?*

-What did they say? / What did you learn? / *¿Qué dijeron? / ¿Qué aprendió?*

g) Have you read any books about inductions? / *¿Ha leído libros sobre la inducción/provoca del parto?*

-What did you learn? / *¿Qué aprendió?*

h) Have you seen any movies or videos about inductions? / *¿Ha visto películas o videos sobre la inducción/provoca del parto durante el parto?*

-What did you learn? / *¿Qué aprendió?*

i) (if applicable) What you have learned in your childbirth classes about induction? / *¿Qué ha aprendido en sus clases del parto sobre la inducción/provoca del parto?*

j) Have you learned about induction from anywhere else that we haven't mentioned? / *¿Ha aprendido sobre la inducción/provoca del parto de otras fuentes que no hemos mencionado hoy?*

k) Thinking about all of the sources of information regarding induction that you have mentioned, which has been the most important to you? / *Pensando en todas las fuentes de información sobre la inducción/provoca del parto que usted ha mencionado, ¿Cuál es la más importante para usted?*

-Why? / *¿Por qué?*

16. Who will make the decision about inducing your labor? / *¿Quién va a hacer la decisión final para provocar/inducir el parto?*

Part III:
This is the last section of the interview. I just have a few more brief questions. / *Esta es la última sección de la entrevista. Solo tengo algunas preguntas breves.*

17. How did you choose your doctor? / *¿Cómo escogió su médico?*

Probe: Have any of your friends or family members also used either this doctor or hospital? / *¿Algunas de sus amigas o parientes han usado este médico u hospital?*
Did you hear about your doctor and hospital in other ways? / *¿Se enteró su médico u hospital de otras maneras?*

Follow-up: How did you choose the hospital where you plan to deliver? / *¿Cómo escogió el hospital?*

18. What other topics that we haven't mentioned have you and your doctor discussed related to your pregnancy and delivery? / *¿Hay otros temas que no hemos mencionado hoy que usted y su médico han discutido, relacionados con su embarazo y parto?*

Probe: breastfeeding, postpartum family planning / *lactancia materna/amamantar, planificación familiar después del parto*

Follow-up: Can you tell me what your intentions or expectations are about [. . . . .]? / *¿Qué espera de…?*

19. Those are all of the questions I have for today. Is there anything else you would like to tell me regarding your method of labor and delivery or anything else that we talked about that you think would be helpful for me to know about the way you feel? / *Estas son todas las preguntas que tengo para hoy. ¿Hay algo más que le gustaría decirme sobre su embarazo o su parto?*

Probe: (on anything the woman mentions)

That was my last question. Thank you for your time and information. I would like to talk with you again for a few minutes before you leave the hospital after your baby is born in order to learn about how your delivery went. Will that be all right? / *Entonces, no tengo más preguntas. Gracias por su tiempo y por toda la información que usted me dio. Me gustaría hablar con usted otra vez por 30 minutos antes de que salga el hospital después de su parto para aprender sobre su parto. ¿Está bien?*

Appendix IIb: In-depth interview guide for postnatal interview with women

Participant number: Date and location of interview:

Delivery date: Delivery method:

Introduction:

Hello [name]. Congratulations on the delivery of your son/daughter! Thank you for agreeing to do a follow-up interview with me.

Today, I would like to ask you some questions about your delivery. I am especially interested in hearing about your experience. There are no right or wrong answers, so please just be honest about your opinions.

Everything you tell me will only be used for this research project, and will not be shared with anyone outside the research team. Also, your name will be removed from study data once our interviews are complete so that no one can identify you with any answers. I would like to record this conversation because I will not be able to write as fast as we speak and I don't want to miss any of the information you give me. Is it okay if I record this interview? Please speak slowly and clearly since later I will be listening to the tape and typing our conversation to use for my research.

I want to remind you again that this interview is completely voluntary. This means that if you want to stop at any time or don't feel comfortable answering a question, please let me know.

This interview will last about 30 minutes. I have a list of questions that I would like us to talk about, but please feel free to bring up any other issues that you feel are relevant.

Do you have any questions before we begin?

--

Hola, (nombre). ¡Felicidades en su bebito! Gracias por participar en otra entrevista conmigo.

Hoy me gustaría preguntarle sobre su parto. Lo más importante para mí es su experiencia. No hay respuestas correctas ni equivocadas; entonces, por favor, sea honesta de lo que piensa.

Todo lo que me dice solo se utilizará para esta investigación, y no será compartido con nadie fuera del equipo de investigadoras. Además, vamos a quitar su nombre de los registros del estudio después de terminar las entrevistas para que nadie pueda identificarle. Quiero grabar esta conversación porque no puedo escribir tan rápido como hablamos y no quiero perder sus palabras. ¿Está bien si grabo esta entrevista? Por favor, hable lentamente y claramente, porque más tarde voy a escuchar al audio para escribir en computadora toda la conversación para esta investigación.

Quiero recordarle que esta entrevista es completamente voluntaria. Si desea detener en cualquier momento o no se siente cómoda respondiendo a una pregunta, por favor déjeme saber.

Esta entrevista va a durar aproximadamente 30 minutos. Tengo una lista de preguntas para usted, pero por favor mencione otros asuntos que piensa que son importantes también con respeto a la investigación.

¿Tiene preguntas antes de empezar?

Part I:

1. Since I last saw you on (insert date of first interview), how many more prenatal care visits did you have? / *Desde la última entrevista (insert date of first interview), ¿Cuántas visitas prenatales ha tenido?*

   Follow-up: In those visits, did you learn anything new about the delivery? / *Durante estas visitas, ¿aprendió algo nuevo sobre el parto?*

   Probes: Risks/benefits of delivery methods; information about induction, anesthesia, breastfeeding, postpartum family planning / *Riesgos/beneficios de métodos del parto; información sobre la inducción, anestesia, lactancia materna, planificación familiar después del parto*

2. How did the birth of your baby go? / *¿Cómo le fue su parto?*
   Probe: Did it go as you expected? / *¿Cómo esperaba?*

3. Tell me about when you went into labor. / *Por favor háblame de cuando empezó su parto.*
   Probe: Did you go into labor as you expected [replace with woman's words from previous interview]? / *¿Cómo esperaba?*

   Follow-up: Did you go into labor naturally/spontaneously [use language that woman used in previous interview]? / *¿Su parto empezó naturalmente (o espontáneamente)?*
   (if yes) When did this occur? / *¿Cuándo?*

   Follow-up: Did you do anything to try to induce your own labor? / *¿Hizo algo para provocar su propio parto?*
   (if yes): What did you do? / *¿Qué hizo?*
   Why? / ¿Por qué?

   Follow-up (if spontaneous labor didn't occur): Did your doctor induce labor [use language that woman used in previous interview]? / *¿Su médico indujo/provocó el parto?*
   How? / *¿Cómo?*

   Follow-up: How long were you in labor before your delivery/the decision to do a cesarean was made? / *¿Por cuánto tiempo estaba en el parto antes de dio a luz (o antes de la decisión de hacer una cesárea)?*
   When did labor begin? / *¿A qué hora empezó el parto?*
   What time did you deliver your baby? / *¿Hasta a que hora?*
   So that would be a total of [time] of labor (before you had the cesarean)? / *Entonces, estaba en el parto por…*

4. What did your delivery feel like? / ¿Cómo sintió su parto?

Follow-up: Did you use any type of pain medication, such as Demerol or an epidural, for your delivery? / *¿Usó algún tipo de medicamento para el dolor, como Demerol, o un epidural/la raquia/el bloqueo?*

-Who was involved in this decision, and how was the decision made (assuming information not gleaned in first interview)? / *¿Quién estuvo involucrado con la decisión?*
-When was the decision made? / *¿Cuándo se hizo la decisión?*
-Did you have a role in this decision? / *¿Tuvo un papel en la decisión?*
(if yes): Tell me about your role in the decision. / *Háblame sobre su papel.*
-Did a nurse or your doctor ask you whether you would like [pain medication/anesthesia used]? Please tell me more about that. / *¿Le preguntó una enfermera o un médico si quería (medicamentos/anestesia)? Háblame más sobre esto.*

5. Who was at the hospital with you? / *¿Quién estaba con usted en el hospital?*
Probe: husband/partner, family members / *Esposo/compañero, parientes*

Follow-up: Were [any of those people who were at the hospital] with you during your labor and delivery in the hospital? / *¿Alguien estaba con usted durante su parto?*

Part II – if cesarean section:

C1. What was the reason you had a cesarean section? / *¿Por qué tuvo una cesárea?*
Probe: Were there any unexpected complications? / *¿Habían complicaciones?*

Follow-up: When was the decision made? / *¿Cuándo se hizo la decisión?*

C2. Tell me about the time leading up to your cesarean section. / *Por favor háblame sobre el tiempo antes de su cesárea.*
Follow-up: Who was involved in the decision? / *¿Quién estaba involucrado con la decisión de hacer una cesárea?*

Probe: What was your role? / *¿Cuál fue su papel en la decisión?*

Follow-up: What did the medical staff tell you about the cesarean section, either before or after? / *¿Qué le dijeron las enfermeras o los médicos sobre la cesárea, antes o después de la operación?*

Follow-up: Did you have to sign a consent form? / *¿Tuvo que firmar un formulario de consentimiento?*
What did it say? / *¿Qué dijo?*

Part III:

6. Overall, how do you feel your delivery went? / *Sobre todo, ¿Cómo le fue su parto?*
Follow-up: If you have another child, is there anything you would want to be different? / *Si tiene otro hijo o hija, ¿hay algo que desea ser diferente?*

7. What advice would you offer women who are currently pregnant with their first baby about labor and delivery? / *¿Qué consejos les ofrecería a otras mujeres embarazadas por la primera vez sobre el parto?*

Probe: Is there anything you know now that you wished you knew earlier? / *¿Hay algo que ya sabe que desea que sabría antes?*

8. Those are all of the questions I have. Is there anything else you would like to tell me regarding your labor and delivery that you think would help me understand it better and be helpful to other women? / *Estas son todas las preguntas que tengo. ¿Hay algo más que le gustaría decirme sobre su embarazo o su parto que me ayudaría entender más o que le ayudaría a otras mujeres?*

Appendix III: Structured interview guide for postpartum interview with obstetrician

Physician number: Date and location of interview:

Participant number of woman who just delivered:

Gestational age of baby:

Vaginal / cesarean delivery

Epidural?: Induced labor?:

Introduction:

Thank you for agreeing to do an interview today. As you already know, my name is Carla DeSisto and I am a student of public health at Emory University in Atlanta, Georgia. As part of my master's program, I am working with investigators from the Centers for Disease Control (CDC), the Autonomous University of Ciudad Juárez (UACJ), and other institutions to learn more about how a woman and her doctor make certain decisions about her method of delivery and other childbirth issues. Information that you and other obstetricians give us is critical to helping us learn more about these decision processes and how they might be improved.

Everything you tell me will only be used for this research project, and will not be shared with anyone outside the research team. Your name will be removed from study data as soon as interviews are complete.

I want to remind you that this interview is completely voluntary. You can choose not to answer any of the questions or stop the interview at any time. I have a short list of questions that I would like to ask you about [name's] labor and delivery, but please feel free to bring up any other issues that you feel are important. The interview will last about 5 minutes.

Do you have any questions before we begin?

--

Gracias por su participación en esta investigación. Como ya sabe, mi nombre es Carla DeSisto y soy estudiante de salud pública en la Universidad de Emory en Atlanta, Georgia. Como parte de mis estudios posgrados, estoy trabajando con investigadoras de Centro para el Control y la Prevención de Enfermedades (CDC), la Universidad Autónoma de Ciudad Juárez, y otros grupos para aprender mas sobre como una mujer y su médico hacen ciertas decisiones sobre el método del parto y otras relacionadas con el embarazo. Las respuestas de usted, y las de las otras obstetras, son importantes porque van a ayudarnos entender mejor como se hace ciertas decisiones y si se puede mejorar el proceso.

Todo lo que me dice solo se utilizará para esta investigación, y no será compartido con nadie fuera del equipo de investigadoras. Además, vamos a quitar su nombre de los registros del estudio después de terminar las entrevistas para que nadie pueda identificarle.

Quiero recordarle que esta entrevista es completamente voluntaria. Si desea detener en cualquier momento o no se siente cómoda respondiendo a una pregunta, por favor déjeme saber.

Tengo una lista de preguntas para usted sobre el parto de [nombre de mujer], pero por favor mencione otros asuntos que piensa que son importantes también con respeto a la investigación. Esta entrevista va a durar aproximadamente 5 minutos

¿Tiene preguntas antes de empezar?

Questions (if vaginal delivery):

1. Can you tell me which factors influenced the mode of delivery for this patient/[name]? / *¿Qué factores influyeron el método del parto en esta paciente / [nombre]?*

2. Were there factors or complications that made you think at any point that a cesarean delivery would be necessary? / *¿Habían factores o complicaciones que le hizo pensar en cualquier momento que sea necesario hacer una cesárea?*
   (if yes) What were those factors or complications? / *¿Cuáles?*

   (if yes) Why was a cesarean ultimately not performed? / *Finalmente, ¿Por qué no se realizó una cesárea?*

Questions (if C-section):

1. What were the determining factors for doing a cesarean for this patient/[name]? / *¿Qué factores influyeron la decisión de hacer una cesárea para esta paciente / [nombre]?*

2. At what point (before/during labor) was it decided to do a cesarean delivery? / *¿Cuándo decidió hacer una cesárea?*

Questions (if we have some extra time):

1. Did you know that women in this area of the U.S.-Mexico border have a relatively high rate of cesarean delivery? Why do you think that is? / *¿Sabía que las mujeres en esta zona de la frontera tienen una tasa alta de partos por cesárea? ¿Por qué cree que este es el caso?*

2. How should the decision to perform a cesarean ideally be made? / *¿Cómo debe hacerse la decisión de realizar una cesárea?*

   Follow-up: Can you describe the roles of the doctor and the patient in deciding the method of delivery under these circumstances? / *Por favor háblame sobre las papeles del medico y la paciente en decidir el método de parto.*

   What type of consent do women need to give? / *Por favor háblame sobre el consentimiento que da la mujer*

3. Is there information women should know about the relative advantages and disadvantages of a vaginal or cesarean delivery as they plan for the birth of their baby? Please specify. / *¿Hay*

información que la mujer debe saber sobre las ventajas y desventajas del métodos del parto? Por favor explícamelas.

(if yes): How can we in the health community help women become better informed about these issues? / *¿Cómo se puede la comunidad de salud mejorar la información que recibe las mujeres?*

4. On the whole, do you have a preference for either vaginal or cesarean deliveries? Why? / *Normalmente, ¿usted prefiere realizar partos vaginales o partos cesáreas? ¿Por qué?*

Appendix IV: Codebook

Expecting spontaneous delivery	This includes any mention of expecting to go into labor spontaneously, such as before the woman's due date.
Trust/confidence	This includes any mention of trust/faith/confidence in people related to advice for delivery method, induction, and epidurals.
Advice	This includes any advice that participants receive regarding method of delivery, induction, and epidurals, as well as any advice they have for other women after they give birth.
Desire for delivery method with reasons	This includes any mention of why the participant desires a particular method of delivery
Pain	Includes any mention of pain related to labor and delivery
Support system	This includes any mention of who the participant relies on for support during labor and delivery. This may include feeling supported by nurses/doctors, as well as partners, friends, and family members.
Risks	This includes any mention of risks related to induction, epidurals, and deliveries.
Decision-maker for induction/method	This includes any mention of who makes the decision regarding induction or method of delivery and how the decision is made.
Why women having C-sections	This includes any description of why participants believe that some women have C-sections. Any mention of "C-section as last resort" or "the baby's/mother's health" are included here.
OB/hospital selection	This includes any mention of the way the participant selected her OB and the hospital where she delivered.
Attitude toward hospital	This includes any mention of the participant's attitude, either liking or disliking, toward the hospital in general or toward the OB
Assisted vaginal delivery	This includes any mention of assisted vaginal delivery, including forceps and vacuum extraction.
Childbirth classes	This includes any mention of childbirth class, including Lamaze
Birth plan/self-advocacy	This includes any mention of telling the OB/hospital staff about the participant's birth plan and any mention of the participant advocating for herself either before or during labor and delivery
"Try harder"/"Wait longer"	This includes any mention of a woman describing the process of waiting or of pushing harder in order to avoid a C-section.
Role of hospital staff	This includes any mention of hospital staff, with the exception of the delivering OB, in relation to the participant's labor and delivery.

Augmentation	This includes any mention of augmenting labor, including the use of Pitocin after labor begins or the artificial rupture of membranes.
Reasons for delivery method	This includes any description of why the participant delivered the way that she did
Source of information	
-Induction	This includes any mention of where the participant learned about induction of labor
-Delivery method	This includes any mention of where the participant learned about method of delivery
Epidurals	This includes any mention of desire, decision, or description of epidural use.
Reasons for induction	This includes any mention of artificial induction of labor, such as description of the process and reasons why it was done.
Communication with OB	This includes mention of the participant's communication with her OB and explicit dialogue between the OB and the participant regarding method of delivery, induction, and epidural. It also includes lack of communication that is mentioned.
Cost	This includes any mention of the cost of C-sections, epidurals, doulas, midwives, and other extra costs related to labor and delivery.

Appendix V: Cesarean section case study and evaluation

This case study was prepared for GH 539: Reproductive Health Program Management and was evaluated by members of the class.

The rising cesarean delivery rate: A management case study

Regional Background:

El Paso, Texas and Ciudad Juárez, Chihuahua are sister cities on the U.S.-Mexico border. The cities make up one of the largest binational metropolitan areas in the world, with a combined population of over 2 million people, about two-thirds of whom reside on the Mexico-side of the border. The cities are connected via four bridges that pass over the Rio Grande, which forms the official boundary between countries, and approximately 14,000 individuals cross these bridges daily[1].

While El Paso is consistently ranked as one of the safest cities in the United States with a population over 500,000 people, Ciudad Juárez has been named one of the most dangerous cities in the world, especially since 2007, when a war between two feuding drug cartels broke out. In 2009, Ciudad Juárez had about 2600 homicides, and as a result nearly 230,000 people left Juárez that year[2].

The per capita income for El Paso in 2010 was $14,388, with about 22% of the population below the federal poverty line[3]. The largest employer of the city is Fort Bliss. In the 2010 U.S. Census, over 85% of the population identified as Hispanic. Most of the population is bilingual (English-Spanish), and many people in the border region have very close ties to both the United States and Mexico.

Cesarean Section Background:

Birth data for 2009 shows that the cesarean delivery rate in the United States reached another record high, rising 2% to 32.3% of all births[4]. This is the 13th consecutive year in which the cesarean delivery rate has risen. However, these rates vary around the U.S., and even among different areas of the U.S.-Mexico border. The Texas border region had a cesarean rate of nearly 37% in 2004, while the New Mexico and Arizona border counties had much lower rates with 25% and 23%, respectively[5]. The World Health Organization asserts that "there is no justification for any region to have a rate higher than 10-15%"[6].

This pattern of high cesarean rates has also been seen globally. Of particular interest to this case, in 2005, the cesarean delivery rate for all of Mexico was 36.1% and for the state of Chihuahua was 31.7%[7].

The primary cesarean section delivery rate is defined as the proportion of live births delivered by cesarean section to mothers with no previous history of a cesarean section[8]. The primary cesarean section rate in 2009 in El Paso was 27.0%, although the rates by hospital ranged from 12.8% to 36.8%[9]. (El Paso has 6 hospitals: 5 are private and 1 is public. The public hospital has

the lowest rate and each of the private hospitals has a primary cesarean utilization rate of more than twice the public hospital's.) In 2009, the state of Texas had a primary cesarean section rate of 19.5% and in 2008, the primary cesarean section rate across the United States was 23.8%[10].

Scientific research is ambiguous about whether or not cesarean delivery is harmful to either the mother or child. For example:
- Liu, et al. concluded that the risks of severe maternal morbidity associated with planned cesarean delivery are higher than those associated with planned vaginal delivery; however, the absolute difference was small[11].
- Kuklina, et al. found that severe obstetric complications increased in the United States from 1998-99 to 2004-05 and that these increases were associated with the increasing rate of cesarean delivery, even after adjusting for maternal age, payer, multiple births, and select comorbidites[12].
- Roth and Henley expressed that three of the six leading causes of maternal mortality are associated with cesareans: hemorrhage, complications from anesthesia, and infection[13].
- MacDorman, et al. found that obstetrical interventions, including cesarean delivery and labor induction, were related to the increase in the U.S. preterm birth rate between 1991 and 2006[14].
-Villar, et al., in a large prospective study throughout Latin America, concluded that caesarean delivery independently reduces overall risk in breech presentations and risk of intrapartum fetal death in cephalic presentations but increases the risk of severe maternal and neonatal morbidity and mortality in cephalic presentations[15].

Cesarean delivery rates had declined through the mid-1990s, partly because of an emphasis on trial of labor for women with a previous cesarean delivery[5]. Since then, the national cesarean rate has risen consistently. This appears to be related to the dramatic fall in the rate of vaginal birth after cesarean (VBAC) since 1996, which was due in part to studies describing the risks associated with VBAC delivery. Additionally, the primary cesarean rate, that is, the cesarean rate for women without a previous cesarean, rose significantly after 1997, a trend resulting from a variety of possible factors. It has been suggested that structural factors related to service supply have influenced the increasing rate[16] more than shifts in maternal risk factors[17] or than maternal requests for cesarean delivery[18,19]. Other suggested factors include ability to pay, fear of litigation, convenience, perceived safety, fear of substandard care, fear of giving birth, and the opportunity for sterilization[16]. Associations regarding the mother's educational attainment, physician training and experience, scheduling issues[13], provider density[20], and the use of nurse-midwives[21] have also been made in peer-reviewed literature. However, as in most public health research, it is nearly impossible to show any type of causal pathway in these relationships.

The mean charge per primary cesarean delivery varies widely across hospitals, but in 2009 in El Paso the charges ranged from $5,912 at the public hospital to $22,183 at the private hospital with the highest rate of cesarean delivery[9]. Across the state of Texas, the mean charge for primary cesarean delivery was $18,543. In the same year, across the state of Texas, the mean charge for an uncomplicated vaginal birth after cesarean (VBAC) was $17,889. However, cesarean deliveries usually take less time, but require longer hospital stays, compared to vaginal deliveries; therefore, the charges are somewhat difficult to interpret by themselves.

Around the world, many health systems have worked to actively reduce the cesarean delivery rate. Some examples of interventions have been a mandatory second opinion before performing

a cesarean except in the case of emergencies, encouraging VBAC, active labor management with higher-than-usual doses of oxytocin (to augment labor), and physician and nurse education about the maternal and fetal benefits of vaginal delivery[22]. These have had varying degrees of success, but there is no consensus in the literature about what, if anything, should be done in response to rising cesarean delivery rates.

A narrowly avoided cesarean delivery:

Maria is a 39-year-old immigrant to El Paso from southern Mexico. She has two Master's degrees and works at the University of Texas-El Paso as a literature professor. After she had a first-trimester miscarriage two years ago, Maria and her husband are elated to have their first child. In speaking with me her during eighth month of pregnancy, Maria says that she wants to have a "natural birth", which she defines as a vaginal delivery at a private hospital with no induction, no augmentation, and no epidural. She describes reading several books about pregnancy and childbirth, using online forums to talk to other pregnant women and women who have recently given birth, and taking a childbirth class at the hospital where she will deliver to learn as much about pregnancy and childbirth as she can.

About a month after our first interview, Maria went into labor in the middle of the night. After waiting until her contractions were 1 minute long and 5 minutes apart, she arrived at the hospital with her husband and sister at 4:30 a.m. As she explained, "[My doctor] wasn't in shift yet, so [the nurses] tried to contact another doctor and they asked me about my birth plan and they said that the doctor that was in shift wasn't very good with birth plans, so it was better if we could wait for [my doctor]. And it was around 6:30 already, so that was fine, since her shift started at 7…I got very good nurses. That was very good. Terry and Yesenia, I remember them. And uh, they helped me. They told me it was dilating about a centimeter every hour or hour and a half, which was good for a first time mom. But the pain was escalating much, much higher. It was very painful. So, I don't remember exactly the time, but I guess by 9 or close to 10 I already asked for the epidural. It was very painful." She was about 6 centimeters dilated when she received the epidural. Sometime in the next few hours, she was given oxytocin and had an amniotomy (the breaking of the water bag).

Maria continued, "So by 3 in the afternoon I had dilated to 10 centimeters, but they said that the baby didn't come down. And so they said we have to wait for the baby to, um, do his job and come down, but they kind of left me alone because there was another lady, another C-section, and so I was by myself like for a couple of hours. I mean, by myself, meaning no nurses or doctors, 'cause my husband and my sister were there all the time. And my friend. And um, so, by 6 doctor came and she said that the baby hadn't come down. And uh, so she had to do a C-section. And I didn't want a C-section, so I asked her if…Uh, before she arrived actually, with the nurse, I was pushing. And she said that we didn't make any progress. And so when doctor came, she said C-section and I said can we try like another half an hour and see if we make progress. And doctor was okay with that, so she left and then I worked with the nurses again. And when doctor came back, she said that yeah, it was good, we could have vaginal delivery. But then, uh, there was a problem 'cause there was something that was obstructing the baby's path. And so it was my urethra. And so, she said it was a God-send or an angel-send or something like that, 'cause she just walked out the room and there was a urologist that was just

walking down. And so he came and he checked me and he said yes, it's the urethra that is coming first, then the baby. And he said it wasn't good. But then the nurse said that if she could hold it and push, this is weird, but now I'm telling you. And so if she could push it in while I was pushing for the baby to come out, and doctor said yeah, it could work, it wasn't bad. And so um, that's what we did. And [my baby] and I pushed and worked a lot and so what I remember is that after that, it was like another half an hour or an hour of pushing. But my husband says it was just 10 minutes. ((laughs)) So after that it was just 10 minutes and [my baby] was out. And so he was born at 6:43 p.m. the same day. So it was about 18 hours of labor."

An unexpected and unwanted cesarean delivery:

Silvia is a 26-year-old Mexican-American woman who lives with her mother in Chaparral, New Mexico, about 25 miles north of El Paso. She was a student at a nearby college while also working full-time at a call center through the month of May. She and her boyfriend unintentionally became pregnant, but decided that they wanted to raise their daughter with the help of Silvia's mother. In July, when I met Silvia, she was 39 weeks pregnant. She described wanting a natural delivery, which she defined as a vaginal delivery at a private hospital in El Paso without an induction of labor and without an epidural. A close friend of hers had a traumatic experience with an emergency cesarean delivery only one week prior to our interview, and Silvia was adamant that she would not be induced or have a cesarean delivery unless her life or the life of her baby was threatened.

Silvia's doctor told her that she could not carry the baby past 41 weeks gestation, to which Silvia responded, "You never know when your real due date is, though." Silvia returned to her obstetrician's office every week for a check-up, and when the ultrasound said she had reached 41 weeks, Silvia was scheduled for an induction of labor. As Silvia explained, "I was just waiting for labor to get started, birth pains, and I thought I was gonna run to the hospital and give birth naturally and everything, but it didn't happen that way. So basically I went to the doctor and she told me that I was already 41 weeks and that she wanted to schedule me for an induction, which is something I didn't want, but she said it had already been, like, too long. She told me that the placenta was aging; um, the longer, and I would put my baby at risk, um, waiting longer, but my baby looked healthy to her but she said it wasn't worth the risk for waiting, you know, for so long. So I told her, you know, it's fine, I guess we'll do the induction. She set up the induction for Sunday. And I went to the hospital and they put me on Pitocin…I went in the evening on Sunday, at 7 p.m. And I was on the Pitocin for 21 hours, until the next day. And um, I think, like, they had me in the hospital walking at midnight, like I didn't sleep. They had me walking so I could dilate more, but it didn't work, I wouldn't dilate. The most I dilated was 4 centimeters, and that's like nothing. [The nurses] told me I need to be at least at 6 centimeters in order to go into real labor. And after 6 centimeters, you know, it's easier and, you know, the contractions will dilate you more faster. And um, the next day, they got kind of worried because the baby wasn't reacting really well to the Pitocin. Like her heart rate would slow down after each contraction that it provoked. So the doctor was worried. I was worried as well. So they asked me if I would consider a C-section. And I said well yeah, I mean, of course. I mean, I'm putting the baby at risk, me being this way, so of course I would consent to it. So I didn't have an epidural or anything like that for the first 21 hours, so I was feeling the contractions, the pains, so I had the experience of feeling the pains. And once I consented to the C-section, then

they put an epidural on me because they have to numb your whole body. So they put the epidural on me and then the doctor was like, 'Well, we can wait a little longer before, this is just in case we want to do a C-section.' So basically we waited from like 4 in the afternoon 'til like 11, like around 11:15 at night. And the doctor was like, 'I'm on my way over there. We're gonna do a C-section. You know, this is what we're gonna do. You already consented to it.' And she's like, 'We don't want to have you any longer on the Pitocin because your baby is not reacting well to it, so we should do a C-section.' And I was like, fine, you know."

Silvia's daughter was born on Monday evening at 11:47 p.m. at a healthy 7 pounds, 6 ounces. After her delivery, the nurses explained to her that she would need to have a cesarean delivery for any future children she has due to "risk factors."

Questions to consider:

1. What key factors led to different methods of delivery for Maria and Silvia? What were the decisions that were made? Who was involved in these decisions?
2. What are the medical considerations (regarding the woman and the fetus) involved in method of delivery?
3. What are the roles of economics and public health in the cesarean delivery rate?
4. Are there ethical issues involved with the cesarean delivery rate at individual hospitals? What might they be?

Policies for the future:

You are a hospital administrator at Memorial Hospital in El Paso, an average private, for-profit hospital with a 27% primary cesarean delivery rate and 37% overall cesarean delivery rate. Your board has determined through a budget analysis of the Labor & Delivery Department that cesarean deliveries are significantly contributing to escalating hospital expenditures. You are given the task of developing a 5 year plan for reducing the overall cesarean rates in your hospital by 10%.

1. Who are the stakeholders (both within the hospital and outside its doors) that you will consult in order to begin your task? What will their role(s) be in your project plan?
2. Identify the "low-hanging fruit" and the more "lofty" goals that you would have over the course of this project.

Notes for the Professor

I. Framing the case study:
- a. Global picture of cesarean deliveries
    1. Barros, F. C., Vaughan, J. P., Victora, C. G., & Huttly, S. R. (1991). Epidemic of caesarean sections in Brazil. Lancet, 338(8760), 167-169.
    2. "C-section rates around globe at 'epidemic' levels" – Asia (http://www.msnbc.msn.com/id/34826186/ns/health-pregnancy/t/c-section-rates-around-globe-epidemic-levels/#.UFdqk40iaHe)
- b. Variation across U.S.

II. Post-case study discussion points:
    a. How is cesarean delivery related to postpartum contraception? (example: Brazil)
    b. How is cesarean delivery related to breastfeeding?

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10. Osterman MJ, Martin JA, Mathews TJ, Hamilton BE. Expanded data from the new birth certificate, 2008. Natl. Vital Stat. Rep. Jul 27 2011;59(7):1-28.
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Critique of case study presentation

Scale 1-5	Comments
4	The case study & surrounding activities was good, particularly the SWOT analysis & the goal/strategy analysis. It would be improved by giving us examples of how cases have been successfully resolved.
4	I love this topic and learned a lot about medical excess. I'd like to understand the hospital system better in relation to c-sections. I could also use a bit more explanation of the SWOT analysis to a bit more narrow focus. Opportunities as external (external to who?) and focus on the strengths cases maybe have separated at diferent levels - hospitals, doctors, patients, etc.
5	I liked using a focused study and going in-depth. I think we probably should've taken less time doing the SWOT analysis so we could've had more time in the final activity.
5	Very interesting topic. I liked the in-depth discussion & input on the SWOT analysis - it was good to be able to go through that process. Would have liked more time to present intervention & get feedback from the class, professors, TA, etc.
5	I like it that there are a lot of interactions and the topic is very specific.
4	Like: I liked the SWOT analysis & group discussion. Dislike: Did not discuss the case studies.
5	I liked that it required understanding one problem at many levels.
5	Interesting topic. Lots of information. However limited professional knowledge makes me just [sic] could think on a general level instead of in more details.
4	Liked: group discussion, student participation in presentation. Improvement: assign case study earlier
4	I knew very little about C-sections before this class & learned quite a bit. I liked the integration of Carla's practicum experience into the class. For intervention activity, I recommend creating groups in which at least one person is an "expert" or has experience (if possible) in this field.
5	[Blank]
4	I liked the case study focus. The SWOT analysis was really helpful in showing us how we can use it as a tool for better management.
4	I always love the discussions. It was a great topic. It was terribly cold.
4	I think the analysis of the cases of high C-sections rates could have been more thorough and not just based on opinion. Also, I feel that focusing on program design is different than program management.
4	Carla's presentation was great and really helped kick off the class discussion. The SWOT activity as a full class worked well but splitting off into smaller groups to work through goals was a great opportunity to go more in depth.
MEAN	
4.40	

Appendix VI. Thesis schedule

	Fall Semester 2011	Spring Semester 2012	Summer 2012	Sept 2012	Oct 2012	Nov 2012	Dec 2012	Jan 2013	Feb 2013	March 2013	April 2013
Identify preceptor											
Literature review											
Conference calls to plan project											
Qualitative Methods course											
Apply for funding											
Develop research instruments											
IRB											
Data collection											
Transcribe interviews											
Finalize research questions											
Qualitative Analysis course											
Write chapter 1											
Qualitative analysis											
Write methods											
Write results											
Write chapter 4											
Condense literature review and discussion for manuscript											
Edit thesis and manuscript											
Submit!!!											☺ ☺ ☺