Distribution Agreement

In presenting this thesis or dissertation as a partial fulfillment of the requirements for an advanced degree from Emory University, I hereby grant to Emory University and its agents the non-exclusive license to archive, make accessible, and display my thesis or dissertation in whole or in part in all forms of media, now or hereafter known, including display on the world wide web. I understand that I may select some access restrictions as part of the online submission of this thesis or dissertation. I retain all ownership rights to the copyright of the thesis or dissertation. I also retain the right to use in future works (such as articles or books) all or part of this thesis or dissertation.

Signature:

_____ _____

Tamar Goldenberg Date

Cesarean Sections and the Medicalization of Birth in Gran Asunción, Paraguay

By

Tamar Goldenberg
Master of Public Health

Hubert Department of Global Health

_____

Dr. Karen L. Andes, PhD
Committee Chair

_____

Dr. Jennifer W. Foster, PhD, MPH, RN
Committee Member

Cesarean Sections and the Medicalization of Birth in Gran Asunción, Paraguay

By

Tamar Goldenberg

B.A.
University of Michigan
2006

Thesis Committee Chair: Dr. Karen L. Andes, PhD

An abstract of
A thesis submitted to the Faculty of the
Rollins School of Public Health of Emory University
in partial fulfillment of the requirements for the degree of
Master of Public Health
in the Hubert Department of Global Health
2011

Abstract

Cesarean Sections and the Medicalization of Birth in Gran Asunción, Paraguay
By Tamar Goldenberg

Background: The World Health Organization recommends that cesarean section rates not exceed 15%; however in 2008, 46% of births in Gran Asunción occurred by cesarean section. The increased use of cesareans in resource-poor settings is associated with increased maternal and neonatal morbidity and mortality and high health care costs.

Objective: To understand why there is a high cesarean section rate in Gran Asunción, Paraguay and to provide recommendations on how to reduce cesarean section use.

Methods: A qualitative needs assessment was performed between May and August 2009. Data collection included thirty in-depth individual interviews, twenty with recently postpartum women who had vaginal or cesarean births and ten with obstetric gynecologists who worked at public hospitals in Gran Asunción. A systematic analysis of verbatim transcripts identified major themes, comparing and contrasting patterns within and between interviews.

Results: The high utilization of cesarean sections in Gran Asunción results from a birth culture that poorly prepares women for vaginal birth, medicalizes the birth process, and promotes the idea among both women and doctors that natural birth is risky. The use of medical interventions during vaginal birth, including artificial oxytocin, artificial membrane rupture, and episiotomies are common and overused. In addition, women lack social support during labor and birth. Vaginal births are often portrayed as a negative experience; many women consequently fear having a vaginal birth and prefer having a cesarean section. Both doctors and women noted that women sometimes "beg" for cesarean sections on arriving at public hospitals. Some doctors also prefer cesarean sections, especially when a woman is asking for one, because they are perceived as more convenient, controllable, and ultimately, less risky in terms of accusations of malpractice. This complex interplay of doctor and maternal preference for cesareans contribute to the use of cesarean sections without medical indications.

Discussion: Intervention strategies to educate women during pregnancy, increase continuity of care, improve hospital infrastructure, allow for social support during labor, and decrease the use of negative birth practices could reduce the cesarean section rate in Gran Asunción by shifting the birth paradigm to a more humanized model of birth.

Cesarean Sections and the Medicalization of Birth in Gran Asunción, Paraguay

By

Tamar Goldenberg

B.A.
University of Michigan
2006

Thesis Committee Chair: Karen L. Andes, PhD

A thesis submitted to the Faculty of the
Rollins School of Public Health of Emory University
in partial fulfillment of the requirements for the degree of
Master of Public Health
in the Hubert Department of Global Health
2011

Acknowledgements

I would like to thank Dr. Karen Andes for her help at every step in the process of writing this thesis. Without her, none of this would have been possible. Karen is a wonderful advisor who really cares about her students. She gave me the freedom and flexibility necessary to learn and to grow throughout this process, while providing me with all of the support and advice that I needed. I would also like to thank Dr. Jenny Foster for the time that she put into helping me with this project. I greatly appreciate her feedback and wisdom.

I am thankful to the Global Field Experience fund for making the trip to Paraguay possible. I am also grateful to everyone who helped me with the data collection process in Paraguay, especially CEPEP and the Instituto Nacional de Salud. I would also like to thank my research assistants, Elizabeth Vargas, who helped with the recruitment and interviews, and Grisel Guato, who transcribed the interviews.

I would like to thank my family and friends for putting up with me and supporting me for the past year as I discussed this project at length. I would especially like to thank Paul Fleming, who helped me think through the details and get through the challenges when I was collecting data in Paraguay and who provided great feedback when writing the thesis in Atlanta.

Finally, I would like to thank all of the women and doctors who participated in this study. I very much appreciate their openness and willingness to share their stories.

Table of Contents

Chapter 1: Introduction 1
Introduction and rationale 1
Purpose statement and research questions 3
Significance statement 4
Definition of terms 4
Chapter 2: Literature Review 6
Patterns of cesarean sections in Latin America 6
Patterns of cesarean sections in Paraguay 6
Health impact of cesarean sections without medical indication 8
Economic impact of cesarean sections 11
Maternal preference vs. doctor preference 13
The impact of medical technology 16
Evidence-based research to reduce cesarean sections 17
Chapter 3: Methods 21
Study location 22
Study population 24
Recruitment 26
Ethical considerations 27
In-depth individual interviews with postpartum women 27
In-depth individual interviews with obstetric gynecologists 28
Participant observations and key informant interviews 29
Data analysis 30
Limitations 31
Chapter 4: Results 34
Secondary Data Analysis of CEPEP ENDSSR 2008 34
General demographics 34
Prenatal care demographics 34
Birth demographics 35
Variation in cesarean section use 36
Qualitative Data Analysis 37
In-Depth Individual Interviews with Obstetric Gynecologists 38
General perceptions about cesarean use 38
Doctors' beliefs about the importance of preparation for birth 39
The medicalization of prenatal care 43
Barriers that prevent educating women during prenatal care 45
Class differences 46

Time spent with the woman 47
The social network as a source of information 48
Preparing women for vaginal birth vs. cesarean sections 49
The use of medical technology during vaginal birth 50
Doctors' perceptions of social support and the doctor's role during labor 53
Doctors' perceptions of accompaniment during labor 54
The doctor's role during labor and birth 54
Doctors' descriptions of maternal preference for cesarean sections 55
The role of the private sector 56
When women beg for cesarean sections 57
Doctors' perceptions of cesarean sections 58
Doctors' perceptions of risks and complications 60
Doctors' recommendations 62
In-Depth Individual Interviews with Postpartum Women 63
Women's accounts of experiences of prenatal care 64
Women's experiences with medical technology 68
Feeling "tirada" vs. experiencing continuous care: Social support during labor 69
Talking to other women: The impact of the social network 74
Women's fears of vaginal birth and cesarean sections 76
Women's recommendations 81
Chapter 5: Discussion 82
Birth culture: Fear and the medicalization of birth 82
Interventions to reduce the cesarean section rate 86
Childbirth education 87
Continuity of care 90
Reducing the use of unnecessary medical interventions and practices 92
Accompaniment during labor 94
Consequences for unnecessary surgery 97
The private sector 98
Additional research 98
Government advocacy 99

List of Tables

Table 1: Language spoken in the home in Gran Asunción compared to all of Paraguay 100
Table 2: Demographics of cesarean sections in Paraguay in 2008 and 2004 100
Table 3: Studies analyzing maternal outcomes of cesarean sections 101
Table 4: Studies analyzing the neonatal outcomes of cesarean sections 103
Table 5: Studies examining interventions for reducing cesarean sections 104
Table 6: General demographics of women in Gran Asunción, Paraguay 105
Table 7: Demographics for prenatal care in Gran Asunción, Paraguay 106
Table 8: Birth demographics in Gran Asunción, Paraguay 107
Table 9: Demographics of cesarean sections in Gran Asunción, Paraguay 108
Table 10: Cesarean demographics by birth outcome 109
Table 11: Institute of Medicine's rules for health care redesign 110

List of Appendices

Appendix 1: IDI Guide for women who had vaginal births (Spanish) 111
Appendix 2: IDI Guide for women who had vaginal births (English) 112
Appendix 3: IDI Guide for women who had intrapartum cesareans (Spanish) 113
Appendix 4: IDI Guide for women who had intrapartum cesareans (English) 115
Appendix 5: IDI Guide for women who had antepartum cesareans (Spanish) 117
Appendix 6: IDI Guide for women who had antepartum cesareans (English) 119
Appendix 7: IDI Guide for obsetric gyneologists (Spanish) 121
Appendix 8: IDI Guide for obsetric gyneologists (English) 123
Appendix 9: Codes and code definitions 125

Chapter 1: Introduction

Introduction and rationale

A cesarean section is a medical technology used during birth to remove a fetus and placenta from a mother's uterus through an incision in the mother's abdominal wall. Cesareans are intended to be used when a baby is unable to travel through the vaginal canal, specifically because a risk has become apparent during pregnancy or when an emergency occurs during labor. Under these circumstances, the use of a cesarean section is a life-saving technology that can save the life of the mother, the baby, or both.

Since the 1980's, the use of cesarean sections has been rising, causing a growing debate about what is considered to be the ideal rate at which cesarean sections should occur.[1, 2] In 1985, the World Health Organization recommended that cesarean section rates be between 10-15%[2] and even though these numbers have been revisited, the recommendation for the 15% upper limit is still applicable today, though a lower limit of between 5-10% has been deemed acceptable.[3]

There are few countries in the world that actually fall within this range of the ideal cesarean rate. Discrepancies in cesarean section rates are often economic, with poorer countries lacking access to cesarean sections and richer countries over-utilizing them. However, many resource-poor countries, especially those in Latin America, have cesarean section rates considerably higher than the recommended 15%.[4]

When a cesarean section is medically indicated, it serves as a life-saving technology; however, the overuse of cesarean sections without medical indication can increase the risk of maternal morbidity and mortality and neonatal morbidity and mortality, while also increasing costs for the health system.[4-7] The use of cesareans

without medical indication are most commonly known to increase maternal and neonatal risk for death, admission to the intensive care unit, longer hospital stays, preterm delivery, blood transfusion, or hysterectomy when compared to vaginal births.[4, 6, 7] Since the intention of using a cesarean section is ideally to make birth safer, it is challenging to determine when cesarean section use moves from being beneficial to harmful.

The excess use of cesarean sections can also have cultural implications. The utilization of cesarean sections as part of a typical practice in obstetric care, as opposed to use only in outstanding circumstances, potentially impacts the perceptions that society has about birth, over-medicalizing a very natural reproductive process.

In some countries with high cesarean rates, women have not preferred cesarean sections in most cases, but rather doctors have been shown to persuade women to have cesareans for non-medical reasons.[4] Contributing factors to doctors' preference of cesareans include convenience of performing cesarean, the association of quality of care with technology and perceptions that cesareans are safer than vaginal births.[7, 8] At the same time, studies in Latin America and elsewhere show that women's fear of birth, high levels of prenatal anxiety, family and social pressures, and availability of technology may lead women to prefer cesarean delivery.[4, 9]

Problem statement

The World Health Organization states that "there is no justification" for cesarean section rates to exceed 15%,[2] implying that medical indications for cesareans should not exist in more than 15% of cases. Even though excessive use of cesarean sections does not improve maternal or neonatal outcomes,[4, 7] rates are rising above 15% throughout the world.[2, 7] Cesarean sections are very common throughout Latin America, with the rate

estimated at 33% in 2005 for the whole region.[4] In the metropolitan region of Gran Asunción, Paraguay, it was calculated that 46% of births took place by cesarean section in 2008,[10] a rise from 40.7% in 2004.[11] The large gap between the recommendation and the actual cesarean section rate in Gran Asunción suggests that cesarean sections are occurring without medical indication. This excess in cesarean sections means that cesareans may be occurring electively, and are being chosen by the mother or obstetrician in the absence of any medical justification.

There are many potential interventions that have been implemented to lower the rate of cesareans in various regions in the world;[12] however, prior to providing recommendations on how to reduce the use of cesarean sections in Gran Asunción, it is first necessary to gain a better understanding of the context in which the cesarean sections are being performed.

Purpose statement and research questions

The purpose of this study is to understand why there is a high cesarean section rate in the region of Gran Asunción, Paraguay. An additional aim of this study is to recommend interventions to reduce the use of cesarean sections. Specific research questions include:

1. How does the decision-making process for a cesarean section occur in public hospitals in Gran Asunción?

2. What differentiates women who prefer cesarean sections from women who prefer vaginal births?

3. What do doctors define as indications for cesarean sections (both medical and non-medical)?

4. What is needed to reduce the cesarean section rate in Gran Asunción?

Knowledge of these underlying factors about how and why cesarean sections are occurring in Gran Asunción serve the purpose of contextualizing cesarean section use in order to recommend culturally appropriate and context specific interventions to the reduce the cesarean section rate.

Significance statement

Since the cesarean section rate is notably high in Latin America, research has focused on countries from this region of the world, especially Brazil, when trying to understand the excess use of cesarean sections.[13, 14] However, little research has focused on cesarean sections in Paraguay, despite the high rates in the region of Gran Asunción. The research that has been conducted in Gran Asunción about cesarean sections has been quantitative and has focused specifically on adolescents.[15] Research has not examined why non-medically indicated cesareans might be occurring among adult women.

This study uses qualitative research methods to understand the context in which cesareans are occurring in Gran Asunción, Paraguay. The findings from this study can be used to help reduce the cesarean section rate in Gran Asunción, which could lead to improved health outcomes for both mothers and babies in addition to allowing money that is currently being spent on cesarean sections without medical indications to be allocated to other, more critical health expenses.

Definition of terms

A cesarean section without medical indication is the use of a cesarean section without a cause that is based in scientific evidence. Evidence-based medical indications include (but are not limited to): fetal malposition (e.g. breech presentation), placenta

previa (the placenta covers the opening to the cervix), placenta accreta (the placenta deeply attaches itself into the wall of the uterus), signs of fetal distress, very low birth weight (less than 1,500 grams), major fetal congenital anomalies, absolute cephalopelvic disproportion (disproportion of a large baby and small pelvis), obstructive tumors, and multiple gestation (twins, etc.) under certain circumstances.[i]

Intrapartum cesarean sections are defined as cesareans that occurred after the onset of labor. Antepartum cesarean sections are defined as cesarean sections that occurred prior to the onset of labor. A singleton birth is a woman who birthed one baby, as opposed to having twins, triplets, etc. Operative vaginal delivery describes vaginal birth with the use of forceps or a vacuum. Primaparas are women who are pregnant with their first child.

[i] Personal communication with Dr. Eva Lathrop, May 2010 and Negrete, T., Griffith, R., Aparicio P., Pérez de Caballero, M.B. *Auditoria de la primera cesárea*

Chapter 2: Literature Review

Patterns of cesarean sections in Latin America

Latin America is known for having higher cesarean rates than other areas of the world. In a study performed in eight countries in Latin America by the World Health Organization, the median rate of cesarean delivery was found to be 33% (quartile range: 24-43%),[4] which is higher than the 31.1% rate of cesarean sections United States in 2006 (31.1%)[16] and more than twice as high as the 10-15% World Health Organization recommendation.[2] Of cesareans occurring in Latin America, 49% were elected prior to the onset of labor, 46% occurred after the onset of labor, and 5% occurred prior to the onset of labor, but with the presence of a medical emergency, including acute fetal distress, vaginal bleeding, uterine rupture, maternal death with fetus alive, or eclampsia.[4] The study also noted that cesarean deliveries were most common in private hospitals, followed by social security hospitals (defined as labor-union hospitals) and public hospitals.[4] Of all of the women who had cesarean deliveries, 30% had a previous cesarean.[4]

Patterns of cesarean sections in Paraguay

Paraguay is located in South America, bordered by Argentina, Bolivia, and Brazil. There are 14 departments within Paraguay, with Asunción being the capital city.[17] The region of Gran Asunción includes Asunción and the metropolitan region surrounding the capital. The state where Asunción is located, called "Departamento Central" includes 36.3% of Paraguay's population and less than 1% of Paraguay's territory.[17]

Paraguay has two official languages: Spanish and Guaraní, an indigenous language. Many people also speak Jopará, which is a combination of Spanish and

Guaraní. Within all of Paraguay, Guaraní is widely spoken; however, Spanish and Jopará are more common than Guaraní in the region of Gran Asunción (Table 1).[10]

Statistics on reproductive health in Paraguay are available from the Reproductive Health Survey conducted by El Centro Paraguayo de Estudios de Población[ii] (CEPEP) every few years. In 2008, the cesarean section rate for all of Paraguay was 33.1%, with 46.0% of births taking place by cesarean section in the metropolitan region of Gran Asunción.[10] This increased from the 2004 statistics: 26.9% overall and 40.7% for Gran Asunción (Table 2).[11] In all of Paraguay in 2008, women were more likely to have a cesarean section if they lived in an urban area, had more education, were of a higher socioeconomic status, and spoke only Spanish in the home (Table 2).[10] This increased for each group when compared to the 2004 statistics.[11]

In a multi-country study performed by the World Health Organization from 2004-2008 in 24 countries in Africa, Asia, and Latin America, Paraguay had the lowest frequency of spontaneous vaginal delivery (57.3%) of the eight countries studied in Latin America and the highest frequency of cesarean sections without medical indication (antepartum without indication: 1.2%, intrapartum without indication: 0.9%).[18] The numbers for cesarean sections without medical indication are very difficult to determine and the high cesarean rate in the region suggests that the actual numbers may be higher. In the entire study, the only country with fewer spontaneous vaginal deliveries and more cesarean sections was China.[18]

[ii] The Paraguayan Center for Population Studies

Health impact of cesarean sections without medical indication

While the 10-15% recommendation has been debated,[1] there is no evidence of benefits for an excess use of cesarean sections and some studies show negative consequences of the use of cesarean sections without medication indication.[5] Understanding the consequences of elective cesarean sections without medical indication is complicated due to the inability to perform a randomized controlled trial for ethical reasons.[7, 18, 19] This is especially difficult because multiple definitions have been used to describe the term "elective" cesarean delivery and there are little data that show the difference between the outcomes for elective cesareans and emergency ones.[19] Limitations regarding the ethics and definition of elective cesarean sections make it easier to analyze repeat elective cesareans or cesareans elected for justified medical reasons (e.g. breech presentation), causing much of the literature to focus on cesareans occurring under these circumstances, instead of elective cesareans occurring without medical indication.[20-24]

Despite the limitations of studying the impact of elective cesarean sections, the literature shows that there is potential for both maternal and neonatal risks. Potential increased maternal risks for women who have cesarean delivery compared to women who have spontaneous vaginal delivery include longer hospital stays, hemorrhage, complications in future pregnancies, risks with the use of anesthesia, infection, surgical trauma, increased blood loss, the need for a blood transfusion, hysterectomy, pulmonary embolism, postpartum pain, postpartum depression, postpartum anxiety, post-traumatic stress disorder, poorer mother-infant relationships, restricted daily activities during the postpartum period and maternal mortality.[19, 25-27] Furthermore, when a woman has a

cesarean, subsequent pregnancies may be at greater risk of placenta previa, placenta accreta, placental abruption, uterine rupture, spontaneous abortion, ectopic pregnancy, and the increased possibility of a stillbirth.[19, 26] Potential increased risks that can occur to a fetus or baby of a woman who had a cesarean delivery compared to a woman who had a vaginal birth include neonatal respiratory morbidity, difficulty breastfeeding, neurological injury, brachial plexus injury, iatrogenic prematurity, transitional changes, neonatal infection, longer hospital stays, fetal laceration or trauma, difficulties with mother-infant bonding, fetal mortality, and neonatal mortality.[25, 26]

Countries with fewer resources may have more difficulty addressing these potential complications from cesarean sections. For example, longer hospital stays due to cesarean sections create a great burden for countries that struggle with a shortage of hospital beds for birthing mothers. Furthermore, studies examining the possible complications of cesarean sections that are performed within resource-rich settings may not be generalizable to other settings, especially when examining indicators that are only frequent within poorer settings, such as maternal mortality. Some studies occurring in the United States do not show an association between mode of delivery and possible maternal complications, including maternal death; however, these studies provide limited results because they use a small sample size.[6] For example, a study performed in the state of Washington analyzed 265,471 births, but only 32 maternal deaths, making the data difficult to generalize.[28] Another study performed in 20 states in the United States analyzed 1,461,270 pregnancies and 95 maternal deaths.[29] While this study found a positive association between cesarean delivery and maternal death, with some maternal deaths being directly attributed to cesarean delivery, the number of maternal deaths

directly attributed to cesarean delivery was too low to determine mode of delivery as a causal factor of maternal death.[29]

There have been a few multi-country studies and studies that have taken place in resource-poor settings, including Latin America, that show an association between maternal and neonatal complications and cesarean delivery (Tables 3 and 4). These studies are more useful in understanding the health impact of the high use of cesarean sections in resource-poor settings.

In Villar et al., the impact of cesarean delivery (elective, intrapartum, and emergency) was analyzed in 9 Latin American countries.[4] It was found that cesarean delivery did not improve perinatal outcomes and was associated with increased postpartum use of antibiotics for the mother, greater maternal mortality, greater severe maternal morbidity (defined as having a blood transfusion, a hysterectomy, maternal admission to an intensive care unite, or a maternal hospital stay of more than 7 days), and higher fetal and neonatal morbidity, even after adjusting for demographic characteristics, risk factors, medical and pregnancy complications, type and complexity of institution, and proportion of referrals.[4] Outcomes worsened if the cesarean was considered to be elective, defined as occurring prior to onset of labor with the absence of serious medical indications including diagnosis of acute fetal distress, vaginal bleeding, uterine rupture, maternal death with fetus alive, or eclampsia.[4]

Within Latin America, Brazil has been a location where many studies have taken place examining the use and impact of cesarean sections because the cesarean rate is considerably higher and because Brazil is known for performing cesarean sections without medical indication.[30] One study that was performed in Sao Paolo, Brazil,

examined the impact of cesarean sections on maternal mortality and found that women who had cesarean sections were 3.3 times more likely to die after birth than women who had vaginal birth (95% CI: 2,6-4,3), after adjusting for hypertension, other disorders, problems and complications, and maternal age.[6] Since this study did not specifically analyze cesarean sections without medical indication, adjusting for complications allows for the outcome of maternal mortality to be reflective of the cesarean section itself instead of the complication that may have caused the cesarean section.

A multi-country study performed by the World Health Organization in Africa, Asia, and Latin America found that when compared to spontaneous vaginal delivery, women who delivered by cesarean sections were significantly more likely to have a short-term severe maternal complication, including maternal death, a stay in the intensive care unit, a blood transfusion, or a hysterectomy, even when adjusting for the country, maternal demographics, pregnancy complications, and incentive for the cesarean.[18] In another study performed by the World Health Organization in 9 Asian countries, cesarean delivery (both antepartum and intrapartum and with or without medical indication) as well as operative vaginal delivery were positively associated with increased maternal mortality and morbidity, defined as maternal mortality, admission to ICU, blood transfusion, hysterectomy, or internal iliac artery ligation and increased perinatal mortality and morbidity, defined as presence of perinatal death or stay in the neonatal ICU for 7 days or longer.[7]

Economic impact of cesarean sections

There is an unequal distribution of cesarean use, both between and within countries.[5] Patterns of cesarean section use show that differences in the utilization of

cesarean delivery depends on a woman's socioeconomic status, with poorer women being considerably more likely to underutilize cesarean delivery and richer women being more likely to have an excess number of cesarean sections.[31] These disparities exist between countries, with some countries having much higher cesarean rates than others, but they also exist within countries, with the greatest in-country variation occurring in countries that have higher cesarean section rates.[31]

Ronsmans et al. performed a study of 42 countries to examine within-country differences of cesarean use based on socioeconomic status.[31] Based on Demographic Health Survey data, countries in sub-Saharan Africa, south and southeast Asia, Latin America, and the Caribbean were divided into three groups, based on the national rates of cesarean sections (less than 2.0%, 2.0-4.9%, 5.0% or more).[31] All of the 8 Latin American countries included in this study had a national cesarean section rate of 5.0% or greater.[31] Data for each group were presented by wealth quintile and showed great variation by wealth, with the largest variation occurring in countries with a cesarean section rate of 5.0% or greater.[31] Brazil had the highest national cesarean section rate and the greatest gap in cesarean section use between the rich and the poor, with the richest 10% having a cesarean rate of 77%.[31] In Nicaragua and Bolivia, where the per capita gross national income is between one quarter and one half of that other Latin American countries, the cesarean rates among the poorest women were far below the World Health Organization recommendation of 10%, at 3% and 4% respectively, compared to the richest women who had cesarean rates of 35% and 44%.[2, 31] There is a clear gap with the use of cesarean sections between the rich and the poor, with the gap being the most problematic in poorer countries that have high cesarean rates.

The overuse of cesarean sections without medical indication has negative economic consequences. In a study that examined the use of cesarean sections in 137 countries in 2008, it was estimated that 6.20 million unnecessary cesarean sections were performed, costing approximately 2.32 billion U.S. dollars. Simultaneously, it was estimated that there were 3.18 million cesarean sections were needed but not provided.[5] It would require 432 million dollars to address all of the cesarean sections that were unable to be attained.[5] Instead of using resources to perform cesareans without medical indication for women of a higher socioeconomic status, countries with high cesarean rates could better utilize resources and try to improve health equity by providing more necessary obstetric services to poorer women.

Maternal preference vs. doctor preference

In countries where the cesarean section rate is above 15%, some cesarean sections are likely to be considered "medically unjustified."[5] There are various explanations that have been examined to try to understand the excess in cesarean section use. Specifically, studies using both qualitative and quantitative methods have examined maternal and obstetrician preference for cesarean sections.[32, 33] However, many of these studies do not differentiate between cesarean sections with and without medical indications, especially when studying maternal preference.[33]

Some suggested factors that may influence a woman's preference to have a cesarean section include previous birth experience, fear of vaginal birth, the need for choice and control, and the cultural acceptability of delivery by cesarean section.[19] Suggested benefits for a woman to elect a cesarean section include avoidance of

operative vaginal delivery, the convenience of scheduling a date and time for the birth, avoidance of pain, and avoidance of emergency cesarean delivery.[19]

Fear of vaginal birth as a potential cause of maternal preference for cesarean sections has been studied, with a specific focus on the reasons as to why women fear vaginal birth and the ways in which fear of birth is manifested.[9, 34] Childbirth-related fear has been most commonly related to pain, obstetric injury, emergency cesarean sections, dying during childbirth, potential risks to health or survival of the unborn baby, and lack of trust of the obstetric staff.[9, 34] While primaparas have been shown to experience more fear of childbirth, previous negative experiences during birth can also create fear for pregnant women.[9, 34] A study performed in Finland used semi-structured questionnaires about pregnancy and childbirth-related fears to determine the causes of fear of childbirth.[34] The study found fear was caused by a history of maternal disease or history of disease in the family, having knowledge of alarming information related to childbirth, having negative mood, hearing negative stories about pregnancy, birth, and baby care, and experiencing or having knowledge of child-related problems, including previous infertility or knowing a person who has delivered a sick, handicapped, or dead child.[34] The study also found that fear was manifested with women wishing to avoid the current pregnancy or childbirth, influencing everyday life, desires to have a cesarean section, and the experience of symptoms of stress.[34]

Another study performed in the Dominican Republic qualitatively examined women's and men's attitudes toward maternity and newborn care in the public sector.[35] In this study, it was found that women and men considered pregnancy as a time of "high

risk, fragility, and vulnerability."[35] Women expressed fear in relation to hospital maternity procedures and treatment by medical staff, who left the women unattended.[35]

It has also been suggested that in the United States fear about vaginal birth is the result of the way that birth is represented in culture. In her book, *Ina May's Guide to Childbirth*, Ina May Gaskin states, "So many horror stories circulate about birth—especially in the United States—that it can be difficult for women to believe that labor and birth can be a beneficial experience. If you have been pregnant for a while, it's probable that you've already heard some scary birth stories from friends or relatives."[36] If attitudes about birth are prominently negative, this could lead women to have increased fear of vaginal birth.

While fear may contribute to maternal preference of cesarean sections, many studies conducted in Brazil have shown that women often prefer vaginal birth, implying that the high incidence of cesarean sections is not the result of maternal preference for cesareans, but rather obstetrician preference.[6, 14, 30, 37] One study found that women prefer vaginal birth because the recovery is better than with a cesarean section.[14] Arguments made as to why doctors may prefer cesarean sections in Brazil include convenience and economic incentive.[13, 30] A doctor may be paid the same amount for a cesarean as for a vaginal birth; however multiple cesareans can be performed in the same time it takes to complete one vaginal birth, therefore providing an economic advantage.[13]

In a study performed in London on obstetrician preference of cesarean sections, 17% (33) of obstetricians preferred cesarean sections to vaginal birth, without the presence of a medical indication.[32] Reasons for doctors' preference of elective cesarean sections without indication included fear of perineal damage from vaginal delivery, long-

term complications (including stress incontinence and anal sphincter damage), the long-term effect of vaginal birth on sexual function, the damage to the baby in a vaginal birth and the ability to elect the timing of delivery.[32] While it has been identified that both maternal and obstetric preference for cesareans may exist, there is limited research available on the interplay between women's and doctors' preferences for cesarean sections and how they may impact each other.

The impact of medical technology

A medicalized perception of birth may also contribute to maternal or obstetrician preference for cesarean sections. In her book, *The Woman in the Body*, Emily Martin discusses the use of medical technologies during birth and the power dynamics involved, with doctors taking "active management" of labor and making decisions regarding whether or not labor is progressing at a sufficient pace.[38] Martin also argues that within "Western medicine," women's bodies are metaphors for machines that are in need of repair.[38] The idea that women's bodies are in need of repair implies that complications during labor are inevitable and that the use technology is necessary in order to avoid potential risks; however, Martin also argues that "We can jolt ourselves out of our tendency to take technology as a given if we change the nature of its use."[38]

An intervention model of birth involves the use of medical technologies, such as the use of artificial oxytocin, epidural analgesia, artificially ruptured membranes, instrumental deliveries and episiotomies to "start, augment, accelerate, regulate, and monitor the process of birth."[39] Countries that practice maternal care within an intervention model often have medicalized perspectives of birth and believe that the use of technology during birth, including the use of cesarean sections, improves maternal and

infant outcomes, even though evidence suggests that birth is safest when less medical intervention occurs.[6, 7, 39] While the use of medical interventions is sometimes necessary to prevent complications of childbirth, the routine and unnecessary use of medical technologies during labor can lead to adverse outcomes, which can increase the need for cesarean sections.[40, 41] Additionally, the use of medical interventions can increase labor pain, post-partum sexual dysfunction, and possible complications from birth.[39] These negative consequences may contribute to the fear and perceptions of risk that both women and doctors have about vaginal birth.

Furthermore, the perception of birth as a medical process impacts maternal preference for cesareans by associating the use of cesarean sections with improved social class. In Latin America, where birth is highly medicalized, women of a higher socioeconomic status are offered cesareans in the private sector and then other women follow suit, likely assuming that cesareans must be better if the wealthier women are choosing them.[6] When women of higher social strata are offered medical services that value cesarean sections and medicalize birth, there is a wider impact on the medicalization of birth for all women.

Evidence-based research to reduce cesarean sections

A meta-analysis of strategies for reducing cesarean sections reported that using a multifaceted strategy, implementing audit and feedback, and quality improvement can be successful interventions.[42] An overview of evidence-based interventions to reduce cesarean delivery is present in Table 5.

One option for reducing cesarean sections is the implementation of a mandatory second opinion policy for all attending physicians. This intervention could impact a

physician's decision-making to perform a cesarean section through "case discussion, provision of support and reassurance by a peer, perception of being audited, and incorporation of evidence-based pregnancy and delivery care through a clinical guidelines component."[12] A cluster randomized control trial tested a mandatory second opinion policy as an intervention for reducing cesarean sections in 36 hospitals in Argentina, Brazil, Cuba, Guatemala, and Mexico over a 6-month period between 1998 and 2000.[12] This study showed a small, but significant reduction in cesarean sections with the use of a mandatory second opinion policy.[12]

Another option for reducing cesarean sections is the use of midwifery care, which has been shown to reduce medical interventions during labor, including augmentation of labor, analgesic use, electronic fetal monitoring, and cesarean sections while also improving health outcomes of mothers and infants.[43, 44] The implementation of a midwifery model of birth involves acknowledging connections between the mind and the body, allowing for the woman to actively participate with the midwife in developing her plan of care and protecting the natural processes of birth.[43] Sometimes, not even nurse midwives practice using this the midwifery model as a standard for care. Therefore, having midwives attend to births instead of doctors is not the only solution in moving towards a midwifery model, but rather it is necessary to ensure appropriate birth practices that align with this model of care.

A randomized controlled trial conducted in Australia examined the impact of providing a community-based standard of care that included providing continuous care by midwives during the antenatal, birth, and postpartum periods.[44] While labors and births occurred in the hospital, antenatal care took place in community-based clinics and

women were given the option of home-based postpartum care.[44] When compared to standard care, which was defined as incontinuous care provided by both midwives and doctors in the hospital setting, with midwives attending to only low-risk women, cesarean sections were less likely to occur when women received community-based continuity care (Odds Ratio: 0.6, 95% CI: 0.4, 0.9).[44]

In addition to providing care through midwives, interventions using birth doulas have been studied.[45-50] Birth doulas are women who provide continuous support to women during labor and childbirth in a non-medical way by providing natural ways to reduce pain during labor. This is done through emotional support (e.g. continued presence, reassurance, providing a comfortable and encouraging environment), physical support (e.g. massage, suggesting positions that may be beneficial during labor, warm baths/showers), and advocacy so that the woman can actively participate in the decisions made during her labor and birth.[46, 51] Studies examining the presence of a birth doula during labor and childbirth have shown positive outcomes, including greater maternal satisfaction, less medical intervention, and a reduction in the likelihood of operative birth.[46, 48]

A meta-analysis of 21 randomized-controlled trials examining the impact of continued labor support, either by a birth doula or other familiar or unfamiliar person (with or without healthcare qualifications) showed that women who had continuous, one-to-one support during labor were less likely to have a cesarean section (Risk Ratio: 0.79, 95% CI: 0.67, 0.92; 21 trials, n=15,061) and more likely to have a spontaneous vaginal birth (Risk Ratio: 1.08, 95% CI: 1.04, 1.12; 18 trials, n=14,005).[46] In settings in which the presence of family members or friends to provide support during labor was

prohibited, having a companion present more greatly reduced the likelihood of having a cesarean section (Risk Ratio: 0.75, 95%: 0.65, 0.87; 10 trials, n=3,735) and more greatly increased the likelihood of having a spontaneous vaginal birth (Risk Ratio: 1.12, 95% CI: 1.07, 1.16; 9 trials, n=3,215).[46]

Lumbiganon et al. state that "Unnecessary cesarean section is a classic example of the mismatch between evidence and practice in obstetrics."[7] Evidence shows that many successful interventions exist to reduce cesarean delivery rate and the increased utilization of these interventions could improve obstetric practices.

Chapter 3: Methods

This project was done in affiliation with the Centro Paraguayo de Estudios de Población[iii] (CEPEP) and the Instituto Nacional de Salud (INS). Qualitative research methods were used to conduct this study in order to get deeper insight of women's and doctors' experiences with cesarean sections in Gran Asunción. Qualitative methods allow for a better understanding of feelings and perceptions that women and doctors have regarding the birth experience and the use of cesarean sections. Methods included in-depth individual interviews (IDIs) with women who were within three months postpartum and IDIs with doctors who provide care during childbirth.[iv] Key informant interviews and participant observations were also performed. The principal investigator (PI) collected data between May 25, 2010 and August 11, 2010 in the Gran Asunción region of Paraguay. Detailed field notes were kept while data were being collected in order to contribute to the rigor of the study. Field notes were used to document methods applied in the data collection process in addition to observations and perceptions about birth and cesarean sections in Asunción. Primary data collection and analysis procedures are described in detail below.

A secondary data analysis was also performed on the Encuesta Nacional de Demografía y Salud Sexual y Reproductiva[v] 2008 (ENDSSR 2008). The ENDSSR 2008 is a national Reproductive Health Survey that was conducted by CEPEP in 2008, with the cooperation of the United States Agency of International Development (USAID), the

---

[iii] Paraguayan Center for Population Studies

[iv] This study originally intended to also perform four focus-group discussions (FGD) with women within 6 months postpartum; however, recruitment proved to be difficult and only one FGD was performed and transcribed verbatim. This FGD was not included in the analysis, but was used to help gain a better understanding of the data that were analyzed.

[v] The Survey for Sexual and Reproductive Health

United Nations Children's Fund (UNICEF), the International Planned Parenthood Federation (IPPF), and the Division of Reproductive Health of the Centers for Disease Control and Prevention (CDC). The survey was performed on a clustered sample, which included 12,208 homes, with a completion of 12,013 household surveys and 6,540 individual surveys completed by women between the ages of 15 and 44. Data were collected from various regions of Paraguay, including the metropolitan region of Asunción, the North, the Central South (excluding districts that are included as the metropolitan Asunción region), and the East; however, analysis only focused on the area of Gran Asunción. The analysis was performed using STATA (version 11) to examine local descriptive statistics regarding the reproductive health and maternal care of women living in Gran Asunción.

Study location

The PI recruited participants in three different hospitals in Gran Asunción: The Santísima Trinidad Maternal and Child Hospital, The Reina Sofia Maternal and Child Paraguayan Red Cross Hospital, and the Regional Hospital of Luque. The Santísima Trinidad Hospital was chosen as a recruitment site because of its' convenient location next to INS and because of its specialty in providing maternal and child healthcare. CEPEP recommended the other two hospitals based on previously established contacts at these hospitals and because these hospitals vary in terms of the services provided and the demographics of the women served.

Even though cesarean section rates are much greater in the private sector (73.2%),[10] study recruitment occurred in public and semi-public hospitals in order to target low and middle class women, which allows for a better understanding of the

average woman's experience of birth in Gran Asunción. Furthermore, receiving permission to conduct research in the private hospitals was prohibitively complicated for data collection.

The Santísima Trinidad Maternal and Child Hospital is a small public hospital located in a residential neighborhood of the city of Asunción, serving primarily women and children. Between January and July, 2010, there were 899 births in the Santísima Trinidad Maternal and Child Hospital and 45.22% of those were cesarean sections.[vi] The Santísima Trinidad Maternal and Child Hospital is a public hospital, which means that it is government-funded and all basic services have been free of charge since December 2009,[vii] when a change of legislation took place. Due to it's location, specialization in maternal and child care, and public status, the Santísima Trinidad Maternal and Child Hospital attracts women through the whole region of Gran Asunción, including the surrounding cities, and generally provides services to women of a low or medium economic status.

The Paraguayan Red Cross Hospital is located in Asunción and also specializes in providing services to women and children. The Paraguayan Red Cross Hospital is a reference hospital, which means that women with high-risk pregnancies are referred to this hospital for specialized care. It is also a teaching hospital, with the staff consisting of doctors and medical students serving as residents. The Paraguayan Red Cross Hospital is neither a traditional public hospital nor a private hospital, as it is partially funded by the Ministry of Health and there is a fee for all services. The fee is generally more than

[vi] Based on data collected by the hospital
[vii] Information provided from the group interview with doctors (Drs. 10, 11, 12) at the Regional Hospital of Luque

women of a lower economic status can afford; however, it is less expensive than the fees at the private hospitals. The cost for birth services varies, with greater expenses for cesarean sections and private postpartum recovery rooms. The frequency of cesarean section use is expected to be higher in this hospital because it is a reference hospital; however, the cesarean section rate is considerably higher than the WHO recommendation. Between January and July 2010, of the 1,544 births that took place at the Paraguayan Red Cross Hospital, 61.10% of them were cesarean sections.[viii]

The Regional Hospital of Luque is located in the municipality of Luque, approximately 20 kilometers east of downtown Asunción. The Regional Hospital of Luque is a public hospital and a reference hospital that caters to all people in Luque and other municipalities surrounding Asunción, attracting mostly people of a low to medium economic status. The hospital is large and performs a lower percentage of cesarean sections than the other hospitals used for recruitment: Of the 1,066 of births that took place between January and May 2010, 34.43% of them were cesarean sections.[ix]

Study population

The women included in this study were recently postpartum women who had vaginal births or first-time cesarean sections without a medical indication. Recently postpartum was initially defined as giving birth within 40 days because women attend postpartum visits in hospitals until 40 days after birth; however, as recruitment became more difficult, the time period was extended to include women who were 3 months postpartum. Only women who recently had their first cesarean section were included in this study, because the study intended to understand why initial cesareans were occurring,

[viii] Based on data collected by the hospital
[ix] Based on data collected by the hospital

as opposed to repeat cesareans, since it is already known that initial cesareans cause subsequent cesareans to occur.[x]

Medical indications were based on the woman's recall of why she had a cesarean section. Women who were uncertain of the indication of the cesarean were not included in the study. Medical indications that were excluded from this study include: breech or traverse presentation, pre-eclampsia, high blood pressure, serious health conditions such as epilepsy, ruptured membranes with amniotic fluid loss beyond 24 hours, and fetal distress. Indications that were included in the study were if the baby was big, if the woman's pelvis was small, if the labor took a long time, if the baby did not drop, if the cord was suspected to be wrapped around the baby's neck (without signs of fetal distress), and if the woman could no longer handle the pain. All mothers had singleton births and gave birth at one of the three hospitals where recruitment took place, with the exception of one woman who gave birth at a private hospital, despite having received prenatal and postpartum care at the Regional Hospital of Luque.

Recruitment of doctors included obstetric gynecologists and medical students training as residents in the field of obstetric gynecology. All doctors were working 24-hour shifts in the labor and delivery units at the time of data collection and all doctors, with the exception of one student, performed cesarean sections.

This study intended to include participants older than age 18, but the ages of postpartum female participants ranged from 17 to 38. All doctors were older than 18 years of age.

---

[x] Vaginal births after cesareans (VBACs) do occur in Paraguay if a woman does not have a complicated pregnancy and had her previous cesarean over more than 2 years prior to becoming pregnant again. However, repeat cesareans are still common.

Recruitment

Before entering the hospitals, the PI received permission from hospitals directors and doctors to perform data collection. Recruitment of postpartum women took place in areas of the hospitals where women were waiting to have postpartum and pediatric consults with the doctors. After women agreed to participate in the interview, they were provided the option of having the interview in a private consultation room in the hospital or scheduling the interview to take place at a later time in the woman's home. Interviews that took place in the woman's home were either conducted on the same day of initial contact or within the following week. In the Regional Hospital of Luque, recruitment was more difficult because of the hospital's size and because it did not specialize in care for mothers and children; therefore, in addition to recruiting women in the waiting area, women were also recruited in the postpartum area, where they were sent after birth. In these cases, interviews with women took place in participants' houses at least a few days after initial contact, in order to provide an appropriate time for recovery before performing the interview.

The PI was introduced to doctor participants by other doctors and nurses in the hospitals, from whom the PI received assistance. Doctor interviews were conducted on the day of initial contact, based on a time chosen by the doctor. Interviews were conducted in break rooms or other locations in the hospitals that were as private as possible.

Doctors and women who agreed to participate in interviews in the hospital did not receive any kind of incentive, but women who participated in interviews in their homes

received a small culturally-appropriate gift for their newborn baby, such as baby soap or a baby hat, in order to show appreciation for allowing the researcher to enter their home.

Ethical considerations

This study was exempt by the Emory International Review Board because data are not generalizable to a larger population, but rather are meant to inform health policy and programming in the specific hospitals where the study took place. Verbal informed consent was received from each participant prior to participation in the study. All participants were informed that participation was completely voluntary and that the PI was not affiliated with the hospital. All data collected were kept private and anonymous. The PI is CITI-certified and the research assistant who helped with recruitment and the conduction of interviews completed the Family Health International (FHI) research ethics training curriculum.[52]

In-depth individual interviews with postpartum women

Twenty IDIs were conducted with postpartum women: eleven with women who had vaginal births and nine with women who had cesarean sections. Of the nine women who had cesarean sections, one was scheduled prior to the initiation of labor. Fourteen of the interviews were conducted with an interview team, consisting of a principle and a secondary interviewer, and six of the interviews were conducted solely by the principle interviewer. The primary interviewer is female, from the United States, speaks Spanish fluently as a second language, has training in qualitative research, has experience working as a birth doula, and was the PI of the project. The secondary interviewer is a Paraguayan woman who speaks both Guaraní and Spanish and was formally trained and licensed to work as a nurse midwife. The purpose of having an interview team was to

clarify any misunderstandings due to language, either with Spanish or Guaraní, and to ensure that all appropriate and necessary questions were asked. All IDIs were conducted in Spanish. While using an interviewer team is unorthodox, in this study, the secondary interviewer helped to create a comfortable and culturally appropriate environment in addition to assisting with misunderstandings due to language. Furthermore, the primary interviewer was the most appropriate person to conduct interviews as she has extensive knowledge of both qualitative research methods and the experience of birth. This rare knowledge base was necessary for asking important and appropriate questions about the birth process.

Prior to conducting IDIs with postpartum women, three pilot interviews were performed, with women who were approximately two years postpartum. The purpose of pilot interviews was to test the quality of the interview guide and the interview team dynamic. Pilots also provided the opportunity for practice with transcription, which was being performed by a female research assistant who was studying law.

All IDIs followed a semi-structured guide (Appendix 1-6). Different interview guides were used if the women had a vaginal birth, an intrapartum cesarean section, or an antepartum cesarean section. Interviews intended to gather women's birth narratives, with details of events, feelings, and attitudes related to the prenatal, birth, and postpartum periods. Interviews lasted between approximately 30 minutes and 2 hours, with most interviews averaging approximately one hour.

In-depth individual interviews with obstetric gynecologists

Ten IDIs were conducted with obstetric gynecologists and medical students. One of the IDIs at the Regional Hospital of Luque was intended to take place with only one

doctor; however, two other doctors joined the interview, making it a 3-person interview. Therefore, in total, 12 obstetric gynecologists participated in this study.

The PI conducted all IDIs with doctors in Spanish. An interview team was not necessary for doctor interviews, because Guaraní is not as commonly spoken among the very well educated population in the city and because medical school is taught in Spanish. IDIs with doctors followed a semi-structured guide (Appendix 7-8) that asked questions regarding the role of the doctor in a vaginal birth and cesarean section and the process of making a decision to perform a cesarean section. Interviews lasted between 40 and 60 minutes in duration.

Participant observations and key informant interviews

The PI performed four participant observations and three key informant interviews. Participant observations included observing a cesarean section at the Red Cross Hospital and two vaginal births at the Santísima Trinidad Hospital. The cesarean section was initially intended to be a vaginal birth, so part of the woman's labor and the decision-making process to have a cesarean section were also observed. Detailed notes were taken on the observations immediately afterward. A childbirth education class for pregnant women, which included an exercise and educational component, was also observed.

Key informant interviews were conducted in Spanish and took place with a childbirth educator, the director of obstetric gynecology at a hospital in Gran Asunción which was not used for recruitment, and an obstetric gynecologist who was not currently practicing, but who formerly worked for the Ministry of Health.

Data analysis

All IDIs with women and doctors were recorded and transcribed verbatim in Spanish. The transcriber underwent a training process that involved transcribing pilot interviews and all final transcripts were checked for quality and edited when necessary. Verbatim transcripts were then analyzed in Spanish, with Guaraní words left in the transcript with Spanish translations in square brackets. Transcripts were not translated before analysis was performed in order to preserve the language used during data collection. The data presented here were translated into English after analysis for the purpose of disseminating results.

Analysis of data was completed using principles of grounded theory[53] and the analysis software, MaxQDA version 10. Line-by-line memoing was conducted on three interviews with women and two interviews with doctors prior to defining codes and applying them to segmented text. After intensively memoing the transcripts, both inductive and deductive codes were created. The first codebook consisted of 16 codes, with inductive codes including choice, fear, pain/suffering, risks/complications, consistency/contradictions, medicalized vs. natural birth, health system, private/payment, malpractice, doctor role, and doctor burden. Deductive codes were originally defined as preparation, postpartum, and recommendations. The inductive codes malpractice and doctor burden were intended to be used primarily for doctor interviews, but could be used with women's interviews if applicable.

Prior to applying these themes to all of the transcripts, one interview with a woman and one interview with a doctor were coded by both the PI and one other person who was familiar with the project, but who does not have extensive knowledge of birth.

The coding of these transcripts were compared and discussed. Codes were redefined, with a final codebook including 15 codes: 12 inductive and 3 deductive. A final codebook with code definitions is present in Appendix 9.

Textual data for all thirty interviews were segmented and coded. Data were retrieved and systematically reviewed using individual codes, intersections of codes, and lexical searches of important words (e.g. "*chuchi*,"[xi] "*animal*," "*conducción*"[xii]). For the purpose of data retrieval by theme, types of respondents were grouped together to better identify consistencies and differences when reviewing the data. Doctors were grouped based on the hospital where they worked and the doctor's approval of the use of elective cesarean sections. Women were grouped based on where they delivered, the desire for a cesarean section or vaginal birth, and mode of delivery. A focused reading was conducted of segmented text and comparisons were made within and between groups. Thick descriptions were created for inductive codes.

The focus group discussion, key informant interviews, and participant observations were not analyzed as data, but rather were used to help inform the analysis of the IDIs. The focus group discussion and key informant interview were used in analysis for lexical searches, but coded themes were not applied to these transcripts.

Limitations

The primary interviewer is fluent in Spanish, but has limited experience with the nuances of Paraguayan Spanish and does not speak Guaraní. While all women participants spoke Spanish, they may have felt more comfortable speaking Guaraní and

[xi] *Chuchi* is a word used in Paraguay to describe people of a high socioeconomic status
[xii] *Conducción* means to drive. This word was used to describe a doctor's role during labor.

may have spoken more openly had the interviews been conducted in Guaraní. These barriers were addressed by having an interview team, with one interviewer fluent in Guaraní. Guaraní was not considered a limitation for IDIs with doctors.

Recruitment of recently postpartum women was difficult for both FGDs and IDIs. The experience of waiting to be seen by a doctor at a public hospital in Paraguay is long and arduous, causing women to be more reluctant to participate. Furthermore, the research was conducted during winter months and when the weather was cold, hospitals were emptier, making recruitment more challenging. To address these problems, recruitment strategies were modified. For IDIs, the length of time postpartum was extended from one month to three months and women were provided an option to participate in the interviews in the comfort of their own homes. FGDs were cancelled due to lack of participation, which may cause gaps in the data, specifically related to more general perceptions that women have about vaginal births and cesarean sections. However, the one FGD that was conducted was used to inform the data from the IDIs.

Recruitment of doctors was generally straightforward; however, the PI was told not to arrive at the Regional Hospital of Luque on specific days when the most amount of cesarean sections were performed because doctors would be too busy to participate in interviews. If the doctors who perform cesarean sections with the highest frequency had participated in the study, it may have provided richer insight into why cesarean sections are taking place. This request was not made at other hospitals.

The interviewers tried to always conduct the interviews in a private and comfortable location; however, there were a few unavoidable exceptions where women's family members, such as siblings, parents, or children were present. Some of the doctor

interviews were in public spaces. Interviews were also occasionally interrupted, either because a doctor needed to care for a woman in labor or because a woman was called in for her consultation with the doctor. These interruptions were perceived as necessary in order to allow doctors to perform their jobs and women to receive care; however, they were avoided whenever possible.

Chapter 4: Results

Analyses of the Encuesta Nacional de Demografía y Salud Sexual y Reproductiva (ENDSSR) data collected by CEPEP in 2008 and qualitative interviews with postpartum women and obstetric gynecologists collected by the PI in 2010 were conducted. Data from the quantitative secondary analysis of the ENDSSR provide a background on the birth demographics in Gran Asunción and qualitative data offer a deeper understanding of women's and doctors' perceptions of and experiences with vaginal birth and cesarean sections.

Secondary Data Analysis of CEPEP ENDSSR 2008

General demographics

There are two main languages spoken in Gran Asunción, Guaraní (the local indigenous language) and Spanish. Of all women, aged 15-44, in Gran Asunción (n=1,507), most women speak Spanish (47.4%) or a combination of Spanish and Guaraní (45.2%) with only 7.4% of women speaking only Guaraní (Table 6). Of all women in Gran Asunción, aged 15-44, (n=1,517), most have secondary education (46.9%) (Table 6). Language and education level are related to each other. Of women who speak Guaraní only (n=112), 69.6% have primary education or less and 3.6% have higher education. Of women who speak Spanish only (n=714), 16.0% have primary education or less and 36.0% have higher education.

Prenatal care demographics

Among women, aged 15-44, who had their most recent child within the 5 years prior to the survey (n=542), almost all women received prenatal care, with 99.3% of women having at least one prenatal care visit (Table 7). Women received between 0 and

50 visits, with a mean of 11.45 visits (standard deviation=5.67). Of women who received any prenatal care (n=533), 97.4% attended 4 visits or more, the World Health Organization recommendation.[54] The World Health Organization also recommends that the first visit occur in the first trimester,[55] but only 68.8% (n=538) of women who received prenatal care met this recommendation (Table 7).

Women received medical procedures during their prenatal care, including blood pressure tests (98.9%, n=536), urine tests (92.7%, n=537), blood tests (97.2%, n=537), measuring the belly (98.0%, n=536), listening to the baby's heartbeat (97.8%, n=535), having an ultrasound (97.8%, n=537), and receiving a tetanus shot (97.0%, n=540) (Table 7). Women who received prenatal care (n=537) also received some very basic childbirth education; though this was not as common as the use of medical procedures with 81.2% of women being educated about nutrition, 68.2% being educated about complications and danger signs, 75.4% receiving education on where to go if there is a complication, and 56.8% receiving education on the danger signs to watch out for with a newborn (Table 7).

Birth demographics

Among all most recent births that occurred in Gran Asunción, Paraguay in the 5 years prior to the survey (n=524), 49.8% of them were by cesarean section (Table 8). Women (n=525) were most likely to give birth in a public hospital defined as a Ministry of Health establishment (44.2%), with 23.2% of women giving birth in a private hospital or at a private clinic, 12.7% of women giving birth at a social security hospital, and 19.8% of women giving birth at another type of hospital (military and police hospitals, maternal and infant hospitals, and teaching hospitals, including the Centro Materno Infantil, the Red Cross Hospital, and the Hospital Nacional) (Table 8). Doctors were

most likely to attend to births (n=521) with 77.5% of births being attended to by doctors and 22.5% being attended to by an obstetric nurse/trained midwife (Table 8). Prematurity occurred in 14.2% of births (n=542) and 23.3% of babies (n=537) weighed 2kg or less (Table 8).[xiii]

Variation in cesarean section use

Women who spoke only Spanish in their household (n=232) were more likely to have cesarean sections (Spanish: 59.1%, Spanish and Guaraní: 44.1%, Guaraní: 34.1%). Women with higher education (n=125) were also more likely to have cesarean sections (Higher: 62.4%, Secondary: 48.7%, Primary or less: 40.4%) (Table 9). There was also variation in cesarean sections by 5-year age groups, with older women being more likely to have cesarean sections than younger women (40-44: 70.7%, 35-39: 61.1%, 30-34: 53.1%, 25-29: 48.8%, 20-24: 36.28%, 15-19: 29.17%) (Table 9).

Women who had a lot of prenatal care visits (more than 10) (n=238) had more cesarean sections (58.8%) than women who had 10 visits or less (42.3%, n=279) (Table 9). Women who met the World Health Organization recommendation of having 4 or more visits and also attending the first visit in the first trimester (n=357) also had a greater percentage of cesarean sections (55.5%) than women who did not meet the WHO recommendation (37.5%, n=160) (Table 9).

Of all locations where birth occurred, the cesarean section rate was the highest in the private hospitals. Of all most-recent births occurring in private hospitals in Gran Asunción, Paraguay within the 5 years prior to the survey (n=121), 74.4% of them were cesarean sections, compared to 39.2% in Ministry of Health hospitals (n=232), 35.8% in

[xiii] Data were not available for 2.5 kg, a commonly used cutoff for healthy birthweight.

social security hospitals (n=67), and 53.4% in other types of hospitals (military and police hospitals, maternal and infant hospitals, and teaching hospitals, including the Centro Materno Infantil, the Red Cross Hospital, and the Hospital Nacional) (n=104) (Table 9).

The proportion of premature babies (n=76) born by cesarean section (72.4%) was higher than those who were not born prematurely (46.0%, n=448) (Table 10). Babies who weighed 2kg or less (n=121) also had a higher rate of cesarean sections (53.72%) than babies who weighed more than 2kg (48.9%, n=399) (Table 10).

Qualitative Data Analysis

The frequency of cesarean section use depends on a decision-making process that is impacted by cultural perceptions that women and doctors have about how birth should occur. Obstetric gynecologists in Gran Asunción blame the high cesarean rate on the lack of preparation for vaginal birth. Preparation for vaginal birth is perceived as being the responsibility of both the women and prenatal care doctors. It is the woman's responsibility to attend prenatal care and the prenatal doctor's responsibility to offer appropriate education during prenatal care. Doctors feel that women who are not prepared prefer to have cesarean sections and maternal preference for cesarean sections creates a greater risk for *guardia*[xiv] doctors in experiencing potential litigation or professional reprimand if a complication does occur. In contradiction to this belief, the majority of women expressed that during their pregnancy, they desired to have a vaginal birth, with only five of twenty women stating that during their pregnancies they wanted a

[xiv] A *guardia* doctor is an obstetric gynecologist that works 24-hour shifts in the hospital. This doctor's responsibilities include caring for gynecological and obstetric emergencies in addition to assisting women who have vaginal births. This doctor performs cesarean sections.

cesarean section. However, it is important to note that some women who stated a desire for a vaginal birth during pregnancy still asked doctors for cesarean sections when they were actually in labor. Of the women who expressed desire for a cesarean section during pregnancy, only two actually had a cesarean section. This implies that the high use of cesarean sections is not solely due to maternal desire for cesarean sections.

Though women's preference may not be the key factor in determining if a woman has a cesarean section, lack of preparation for vaginal birth during pregnancy and a culture of fear around birth do impact a woman's birth experience and ability to manage labor. Furthermore, the medicalized nature of birth makes it more difficult to birth vaginally. The use of medical technologies during labor, such as artificial oxytocin to augment labor, artificial rupture of membranes, and episiotomies, are done as protocol and hospital policies prohibit women to be accompanied during labor and birth.

In-Depth Individual Interviews with Obstetric Gynecologists

General perceptions about cesarean use

In the ten interviews with obstetric gynecologists, most of the doctors commented that the cesarean section rate in Asunción and the hospitals where they work is high, with one doctor stating that approximately four to five cesarean sections occur per 24-hour shift. Doctors stated that the cesarean section rate in Paraguay is higher than in other countries and that it could be reduced. The cesarean rate was perceived by these doctors as increasing in the public sector and rising even more steadily in the private sector. Three doctors estimated that approximately 80-90% of births occur by cesarean section in the private sector. Only one doctor did not believe that the cesarean rate was too high (Dr.6, Red Cross).

There was variation in doctors' statements pertaining to whether or not cesarean sections always occur with a medical indication, with contradictions existing within and between interviews. Some doctors made statements that all cesarean sections in public hospitals occur for medical reasons alone; however there were contradictions within interviews, with the same doctors stating that sometimes cesareans occur without indication. Statements were often ambiguous, for example, one doctor stated that, "At least during my shift, operations happen when they really merit a surgery" (Dr.3, Trinidad) implying that while he only performs cesarean sections when there is a medical indication, he cannot speak for other doctors. Some statements were not as ambiguous, specifically stating that not all cesareans are indicated: "I think that there are a lot of cesareans and surgeries that happen without indication. They don't have an indication. Patients that should have a vaginal birth have a cesarean section without indication" (Dr.1, Luque).

Doctors' beliefs about the importance of preparation for birth

Women's lack of prenatal care or preparation for birth was consistently discussed by the doctors as a non-medical indication for an increase in cesarean section use: "Here, the frequency of surgeries is very high because [the women] are not prepared" (Dr.9, Luque). The doctors claimed that a lack of prenatal care is linked directly to an increased cesarean section rate because women who do not receive an adequate amount of prenatal care or education during their pregnancies, which results in failure to prepare women physically or psychologically for vaginal birth.

In order to ensure the health of the baby, doctors stated that women must attend their prenatal visits. Prenatal care was perceived as especially important in physically

preparing women for birth because it reduces a woman's level of risk. According to the doctors, failure to prevent, identify and treat any potential complications during pregnancy leads to greater potential risks during labor or birth. When a woman does not attend prenatal visits it does not allow the doctors to control for complications that are unknown to them, causing an element of surprise:

> "[If a woman does not attend any prenatal visits] you don't know what you are going to find. You don't know what condition the baby is in… so you operate and thanks to that, I think that there are more surgeries" (Dr.9, Luque).

> "They don't do it [attend prenatal visits] and really those are the patients that complicate things for you later because they come without any prenatal visits, without a single sonogram and it is all a box of surprises. I think everything is there, in the prenatal care" (Dr.1, Luque).

This potential for unknown risks is especially problematic if a woman arrives at the hospital in labor outside of normal business hours, because the hospital does not have the capacity to perform diagnostic testing 24 hours a day. This fear of unknown complications can cause doctors to choose cesarean sections as the most appropriate mode of delivery.

Prenatal care was also viewed as an important aspect of psychologically preparing a woman for childbirth. Doctors stated that women need prenatal care because they are scared of vaginal birth and providing information to women was perceived as the best way to prepare women for vaginal birth and calm women's fears. Doctors identified a relationship between fear and ignorance, resulting in the idea that communicating with women prior to their births is the best way to reduce fear:

> "And because of, I don't know, the fear, more than anything because of ignorance, right, but if you explain everything that can happen during a birth, during a cesarean section then she will quickly understand and sometimes she will change her opinion, other times she won't, she's closed off and doesn't want to know anything about birth" (Dr.9, Luque).

According to doctors, the combination of fear and lack of information increases women's desires to have cesarean sections: "The most common is that they are scared, the fear of the unknown. They are not prepared. It hurts. They are upset and they ask for a cesarean" (Dr.1, Luque). Though some doctors discussed the role of the *guardia* doctor or the *obstetra*[xv] in educating women about birth, the prenatal period was perceived as a more important time to provide the necessary information to women. Educating women during the prenatal period was considered necessary in order to reduce women's fears and desires for cesarean sections:

> "A patient that did not do what she should have or that didn't come to any prenatal visits generally is always scared of birth… when they arrive in our hands, when they are already in labor, it is too late to do any psychological work… Because the work of preparation needs to happen during the prenatal visit and making the patient aware that during her labor, that the contractions are going to hurt and all of that and generally when they arrive in our hands it is difficult to do that whole process" (Dr.2, Trinidad).

During the prenatal period, doctors stated that women are prepared for vaginal birth (or should be prepared for vaginal birth) by teaching them how to breathe and teaching them about the process of labor, why they have pains, etc. However, the prenatal period was also perceived as a time when doctors need to convince women that a vaginal birth is the best mode of delivery:

> "When there is a patient that had multiple prenatal care visits, then little by little they are prepared for birth. There are women in their first prenatal visit, when they don't even have a belly, tell you that they want a cesarean section. They come afraid of birth, but then you have 9 months to talk and make it so that she understands that vaginal birth is the best, that here [in the Red Cross] they use epidural analgesia that reduces pain, that there will always be a doctor by her side, that we will not leave her alone, so it is easier. But when she comes like that,

[xv] An *obstetra* is a formally trained midwife who performs all straightforward vaginal births in public hospitals.

> without any prenatal visits, then it is more difficult, much more difficult" (Dr.6, Red Cross).
>
> "The patient, the first thing that she has to do is have a desire to have a vaginal birth. First the patient needs to be convinced that she really can have a vaginal birth and that it is better to have a vaginal birth, you understand, that it is easier to have a vaginal birth. So there, in the prenatal visits then, it is important to educate the patient" (Dr.1, Luque).

Doctors stated that a woman who is not convinced to have a vaginal birth or who is not appropriately prepared for vaginal birth during her pregnancy will be a much more difficult patient during her labor than the woman who has received this information during her prenatal care:

> "[With a woman who is prepared] there is a difference. You can see a big difference. She breathes better. She tolerates. She knows that the baby will be born and the pains will end. The other woman is exasperated because she feels something that she has never felt. A lot of times they are like this. They never had a baby. They are having their first baby and that is the issue, right, that they don't know when it is going to end, how it is going to end, if it going to get more intense after. They don't know what to expect. Everything happens mostly because of fear" (Dr.8, Red Cross).
>
> "They don't push well because they don't understand, because they are not prepared, they are not prepared" (Dr.4, Trinidad).

According to the doctors, women who do not receive education about how to manage labor or about what happens during birth, especially women who are having first-time births and are unfamiliar with the labor process, are more likely to panic during labor than women who have received appropriate childbirth education. Women's behavior during labor and birth was perceived as very important because women who do not "cooperate" during vaginal birth were identified as having more necessity for operative vaginal birth or a cesarean section:

> "If [a woman] is not psychologically prepared and if quickly she completes [dilation], the baby comes down for birth, but it is an operative birth, that is with forceps, because of a lack of maternal cooperation" (Dr.8, Red Cross).

> "The option of a cesarean section is for when the patient is pressuring you, when they are not mentally, psychologically prepared for what is birth. Because nobody talked to her before, nobody talked to her during her prenatal visits, nobody explained to her or because she is simply not, she is not willing. Birth is ninety percent the patient's predisposition. If a person is not ready, she doesn't know what is going to happen, nobody talked to her" (Group Interview: Dr.11, Luque).

The medicalization of prenatal care

Doctors stated that women are not prepared for vaginal birth because they do not receive prenatal care; however, according to the ENDSSR 2008, 99.3% of women in Gran Asunción received some prenatal care and 97.4% of those women had at least four prenatal care visits during their most recent pregnancy. Women were attending prenatal visits, but doctors still identified a lack of preparation as a major limitation. This evidence supports another argument made by the doctors, that even when women do receive prenatal care, they do not receive the appropriate type of preparation for vaginal birth.

When asked what typically occurs during a prenatal visit, doctors primarily discussed use of medical analyses in order to determine the presence of potential risks or complications. A strict focus on the use of medical procedures during pregnancy indicates that prenatal care is perceived as a medical process, a time that is meant for identifying potential problems, instead of a time meant to educate the woman about birth. The medicalization of prenatal care can result in the overuse of medical technologies during pregnancy and a lack of childbirth education to prepare women for vaginal birth.

Some doctors stated that many cesarean sections may be categorized as medically indicated prior to operation; however, after operating it becomes apparent that the cesarean was unnecessary (Dr.1, Luque, Dr.7, Red Cross, Dr.8, Red Cross). For

example, a fetus that was considered large after performing medical analyses during pregnancy may not actually be as large as expected once born. The explanation for this occurrence was the use of medical technology during pregnancy, such as ultrasounds and fetal monitors that can falsely detect the presence of complications. Doctors use ultrasounds during the third trimester of pregnancy to help with the decision of whether a woman will have a vaginal birth or a cesarean section; however, according to the doctors interviewed, doctors over-rely on medical technology and women receive too many ultrasounds during pregnancy, especially in the private sector, where they are not as concerned about optimizing resources (Dr.8, Red Cross). Medical technologies were perceived as replacing clinical exams, with one doctor stating that:

> "The physical exam has been gradually deteriorating with the arrival of all of the auxiliary diagnostic methods, lab tests, images of blood, etcetera, etcetera, etcetera. The clinical evaluation of the patients is getting lost" (Dr.7, Red Cross).

When prenatal care focuses exclusively on medical analyses and identifying risks, it can result in a failure to provide appropriate education to the women in order to psychologically prepare them for birth:

> "Psychologically prepared would be better. Very little, I don't, I barely see those prenatal courses. There are prenatal visits, but they only examine the baby's heartbeat, the mother's blood pressure, if she has all of her tests, the growth of the baby and all of those things right, but they don't discuss the mother's education about birth" (Dr.9, Luque).

There is protocol for typical medical procedures that are considered necessary during prenatal care, but no protocol for the kind of education that women need to receive. This results in the absence of childbirth education in prenatal care.

Instead of having protocol for the kind of education that women receive during prenatal care, information is provided on a question and answer basis. This means that

the amount of information that women receive varies greatly depending on the woman, the amount of questions that she asks, and her facility and comfort in asking questions: "There are women who are, they have you sitting there and they ask you a lot of questions and there are people that ask you one question and they're finished" (Dr.5, Red Cross). Certain segments of the population, such as uneducated women and adolescents, were perceived as not communicating as easily and as asking less questions, resulting in these groups receiving less information about birth. Different amounts of information are provided not only based on a woman's ability to ask questions, but also on her previous experience. If the woman is going to have her first child, the doctors said that she needs more information because "Generally, for those who have already had, it is less because they already know" (Group Interview: Dr.10, Luque). This is important because doctors are unaware of the kind of previous experience that a woman had, but rather assume that if she had a previous birth than she does not need as much information in her current pregnancy.

Barriers that prevent educating women during prenatal care

Doctors identified multiple barriers that contribute to the inability to provide childbirth education to women during prenatal care. Doctors stated that often women do not receive appropriate prenatal care if they are of a lower socioeconomic status or if they are uneducated. When women do attend prenatal visits, culture and education also serve as a barrier along with the amount of time that doctors can spend with the patient and the other education that women receive from outside sources, specifically from their social networks.

Class differences

Doctors stated that class differences and a "Folkloric culture," perceived as basic and perpetuating ignorant ideas about birth, were barriers in providing prenatal care and information to women during their pregnancies. An idea that the doctors mentioned is that Paraguay consists of two different cultures, "two levels" (Dr.5, Red Cross) or "two medicines" (Dr.8, Red Cross), depending on a woman's socioeconomic status and education level. Uneducated women and women of a lower socioeconomic status were perceived as not arriving at the hospital for prenatal care. Furthermore, when these women do attend prenatal visits, doctors stated that they are unable to retain or understand information that is provided because of their level of education. Some doctors felt as though this failure to communicate appropriately with women of a lower education level is not the fault of the doctor, but rather the fault of the woman:

> "We have two levels… people who are very educated and people, I'm saying that they received education and they know perfectly their risks and people who don't. That does not depend on us, no. That depends more on their education or their literacy level or the level of comprehension that the patient can have. That no longer depends on us, but always the most important thing…is to converse, to explain to them, to talk to them, in any way possible to try so that all women have that security that they are being well attended" (Dr.5, Red Cross).

On the contrary, other doctors recognized education as a "barrier," but they also recognized that it is the doctor's duty to "Explain to the person in terms that they can understand" (Dr.7, Red Cross). Doctors who do not make the effort to explain terms in a language that the patient can understand will not be able to appropriately provide childbirth education to all pregnant women.

Time spent with the woman

Another barrier towards providing appropriate information was discussed at length in the group interview with doctors (Regional Hospital of Luque), specifically identifying government healthcare policies and hospital infrastructure as creating challenges toward preparing women for birth. According to these doctors, in December 2009, all primary medical care became free of charge, which increased the amount of women arriving at the hospital for both prenatal care and births. This increase in volume occurred quickly without any increase in the number of doctors working at the hospital. This resulted in a more difficult experience for women when they arrive at the hospital to receive prenatal care, requiring long lines and waiting times. Since the experience of going to the hospital is described as an unpleasant one, it is believed that some women may prefer not to receive parental care and wait until they absolutely need to go to the hospital in order to receive care. Again, this contrasts with the data from the ENDSSR, which shows that women are receiving prenatal care and that they were receiving prenatal care prior to the policy shift in 2009.

According to the doctors, when women do arrive at the hospital and are finally able to see a doctor, their visits are short and rushed because the doctor has a long line of women that he or she needs to examine. When prenatal visits are short, women are unable to receive appropriate education:

> "That needs to be improved too, the subject that with less, with the less patients you see, the more you can educate your patient because you have more time to talk to them" (Group Interview: Dr.10, Luque).

> "Here there are three hours of consultations and you have thirty patients. You have to measure their belly, listen to the heartbeats and give them everything that they are missing, so you cannot sit with the patient and explain to them because you have, you have an overload of patients" (Group Interview: Dr.11, Luque).

> "Some leave in fifteen minutes… it is hard that in fifteen or twenty minutes that you are going to also know the history of the patient" (Dr.4, Trinidad).

The social network as a source of information

According to the doctors, women receive information about birth from within their social networks instead of receiving appropriate preparation from doctors. Doctors stated that women are told that they should have cesarean sections:

> "If you are not careful, almost all, 80% of the women already come in brainwashed, 'I came in order for you to operate.' And later you ask, and why? No, because there they told me, the *chipera*[xvi] told me, the *yuyera*[xvii] told me, the woman who sells me the newspaper also told me that I should have a cesarean" (Dr.3, Trinidad).

Sometimes women hear contradictory information from women and the type of information that they hear can make the difference in their preference for a cesarean section or a vaginal birth:

> "The familial network and friends, they are the ones who say, 'are you going to have a vaginal birth? No, no, no, why are you going to have a vaginal birth?' They tell you that my daughter or my aunt or my grandmother had something happen to them and so they say, well they say no, so a cesarean, right. Others tell you 'why are you going to have a cesarean? No, vaginal birth, you know that right away you can eat, you do everything better immediately after with a vaginal birth,' yes, they tell them, yes, a vaginal birth is better. They are convinced, right. For more than I convince a patient as a doctor, as a professional, there is the familial network and her circle of friends that tell her no, yes, yes, no, so they come with something else in mind" (Dr.4, Trinidad).

Regardless of the information that a doctor tries to provide, the opinions of other women will take precedence over the doctor's opinion, creating a barrier in providing appropriate education to women.

[xvi] A *chipera* is a person who sells *chipa*, a popular Paraguayan food.
[xvii] A *yuyera* is a person who sells natural herbs, which are commonly used in Paraguay.

Preparing women for vaginal birth vs. cesarean sections

In addition to valuing the opinions of other women, the opinion of the doctor who the woman saw during her prenatal care also trumps the *guardia* doctor's opinion. In the public hospitals in Gran Asunción, there is little continuity of care, with women receiving prenatal care form a different doctor than the one who will assist her during labor and birth. The only exception to this was at the Red Cross Hospital, where residents perform prenatal care on some days and *guardia* on others. Most of the doctors who worked at Trinidad and Luque exclusively worked as *guardia* doctors in multiple hospitals; however, some worked as prenatal care doctors, though not in the same hospital where they worked as a *guardia* doctor.

Even though there are many barriers preventing prenatal care doctors from providing education to women during their pregnancies, education is still valued and in an attempt to prepare women for birth, opinions about the appropriate mode of delivery are often provided. However, there is variation in the way that doctors prepare women for birth, with different doctors preparing women for vaginal birth, cesarean sections, or the possibility of either. Doctors generally agreed that when a medical indication is not present, women should be prepared for vaginal birth, with some doctors being stronger advocates for vaginal birth than others. Preparing women for vaginal birth involves "convincing" women that a vaginal birth is more appropriate by explaining all of the potential risks involved in a cesarean section. Information provided during prenatal care therefore is not only about preparing a woman for a vaginal birth, but it is also about not preparing them for a cesarean section, informing them that a cesarean section is something that is only used in the case of an emergency or necessity. A minority of

doctors felt that even women who are not high-risk should be prepared for both vaginal birth and cesarean sections because birth does not always go as planned.

Though all of the doctors denied unnecessarily scheduling cesarean sections, they stated that some of their colleagues mentally prepare women for cesarean sections when they should not: “My colleague that I saw, she was seeing her and told her that she needed a cesarean section. She was preparing the patient for a cesarean and the patient comes in with the mindset that they are going to operate” (Group Interview: Dr.10, Luque). Especially in the Trinidad Hospital, there was criticism of the disconnect between the prenatal doctors and *guardia* doctors. This was perceived as especially problematic when prenatal doctors schedule cesarean sections that they will not perform themselves. Doctors stated that they do not like being told by other doctors that they should perform a cesarean section when no actual medical indication is present. Preparation for cesarean sections during the prenatal period was perceived as especially problematic for women who receive some or all of their prenatal care in the private sector because doctors in the private sector are known for preparing women for cesarean sections.

The use of medical technology during vaginal birth

In addition to medicalizing prenatal care, birth itself is experienced as a medical experience in Gran Asunción, with a high utilization of medical technologies during labor and vaginal birth. All doctors described the common and even routine use of medical interventions during labor and birth, including artificial oxytocin, artificial rupture of membranes, episiotomies, and in the Red Cross Hospital, epidural analgesia and forceps (forceps are used as protocol for vaginal births after cesareans). These medical

interventions are a part of routine protocol, and are considered necessary for the "*conducción*"[xviii] or "evolution" of labor. The consistent use of medical interventions means that birth never occurs naturally in Gran Asunción. One doctor stated that he had never seen a natural birth take place from start to finish without the use of any medical intervention (Dr.7, Red Cross).

The use of medical interventions generally occurs because they are perceived as beneficial or necessary. The use of artificial oxytocin to augment labor is described as necessary in order for contractions to be "effective" and to "provoke dilation and end with a vaginal birth" (Dr.8, Red Cross), implying that doctors believe that a woman's contractions cannot be effective without the artificial augmentation of labor. Furthermore, all doctors stated that the artificial rupture of membranes is a method for identifying risk, specifically identifying the presence of meconium[xix] and the possibility for infection, in addition to serving as a tool to accelerate labor. Episiotomies were perceived as beneficial because, according to the doctors, they prevent vaginal tears. However, not all doctors were in agreement on the benefits of medical technology. One doctor identified how episiotomies can increase prolapsed genitals, urinary incontinence, and sexual dysfunction without preventing the possibility of third and fourth degree tears (Dr.7, Red Cross).

In addition to perceived benefits, doctors also discussed how the lack of infrastructure in the hospitals and the lack of space require the use of interventions that accelerate labor:

[xviii] *Conducción* means "driving." This refers to doctors' management of labor.

[xix] Meconium is an infant's first stools. If meconium is present in the amniotic fluid it means that stools were made prior to being born, increasing the risk of infection and aspiration.

> "Routinely, oxytocin is used. It is used routinely. If you were to admit the quantity of patients that we have, you can't admit a patient and not accelerate her labor because the moment comes when you don't have a bed. You have to accelerate labor in a way so that the patient has her baby and goes to the other room and leaves her place for another person who is waiting. There are moments when we have, for example, nothing, not even a bed, not even a stretcher and there isn't space in the room either, so you cannot leave a patient so that her labor progresses spontaneously because she is going to be, she is going to be there all day and there are going to be a ton of people that you are not going to be able to provide care for and you are going to have to send them to another hospital and that hospital is going to get full of people and they are not going to have space. So, oxytocin is utilized routinely" (Dr.1, Luque).

> "Because we have a high flow of patients, we look for how to quickly accelerate the process of birth, so that instead of waiting for it to progress slowly, we can give a little bit of oxytocin and accelerate the process a little" (Dr.8, Red Cross).

> "In order to accelerate the strength [of the contractions] a little because many times the progression of labor takes more time and because here our physical space is little. In the labor room there are only three beds and we accelerate labor in order to free up more beds and to be able to receive more patients" (Dr.2, Trinidad).

When hospitals are full to capacity, it is not possible for doctors to allow labor to progress naturally, which demonstrates a limitation in hospital infrastructure.

Even though the use of medical interventions was perceived as assisting with the evolution of labor in order to achieve vaginal delivery, doctors also stated that the use of medical interventions can increase the possibility of needing a cesarean section:

> "Many times [oxytocin] can suddenly make it so that the labor is difficult and it ends in a cesarean section" (Dr.8, Red Cross).

> "It is an issue of the [epidural] analgesia so that there is less pain, right, but also some, or the medicine is questioned for the fact that it can produce hypotension, it can increase cesarean sections, because it can increase fetal suffering, etc." (Dr.7, Red Cross).

This idea that medical technologies increase the possibility of needing a cesarean section is specific to certain types of medical technologies, such as epidural analgesia or artificial oxytocin. Some doctors stated that it is not the overuse, but rather the lack of

medical technology, specifically technology involved in monitoring a woman, that causes an increase in cesarean section use:

> "If we could have [fetal] monitors to monitor the patients, if we could have ultrasounds, better-equipped rooms, we would be able to handle many things and avoid many complications. Or well, if we had a good infrastructure, good equipment and had everything available, we would work much better and that is yes, definitely because often we have to try to guess with what is happening without any direction. We don't have anything to do it. Sometimes, we can't even give an opinion or we don't have [the technology] in order to listen to the heartbeat. It is terrible, but we are already used to it and we do it a lot" (Dr.2, Trinidad).

> "If you have a hospital that gives you a lot, that has a lot of capacity, that gives you this… You are not going to be missing anything, vaginal birth. If you do not have a well-equipped hospital, it is better to operate so that you don't run the risk and it is no more than that" (Dr.3, Trinidad).

Improvement of monitoring during labor would reduce the need to "guess" about the health status of a woman and a baby and according to doctors, could potentially prevent cesarean sections that result from a more ambiguous decision-making process. Therefore, lack of hospital resources causes an increase in the use of certain medical interventions, such as artificial oxytocin; however, the lack of resources also causes an inability to always use certain technologies, such as fetal monitors. The overuse and underuse of these technologies simultaneously work to increase the use of cesarean sections.

Doctors' perceptions of social support and the doctor's role during labor

In public hospitals, family members and partners are prohibited from accompanying women during labor and birth. The reason for this was identified as a lack of infrastructure in the hospitals. The labor rooms in these hospitals contain multiple beds. There is little space for family members to enter and the structure of these rooms would not allow for privacy of women. Women are often left to labor alone, because the

role of the doctors generally does not include continuous accompaniment; however, this varies depending on the hospital and the doctor.

Doctors' perceptions of accompaniment during labor

Doctors noted that women are more afraid during labor because they are unaccompanied. This is specifically identified as a challenge in calming women's fears during labor. The feeling of being "*tirada*"[xx] (Dr.4, Trinidad) is also mentioned as a reason why women have negative birth experiences and want to have cesarean sections in the future. However, at the same time, doctors stated that the accompaniment of family members during labor is "a double edged sword" (Group Interview: Dr.11, Red Cross) because if a partner or family member is very nervous, this fear can be "contagious" and make the woman feel more scared. Furthermore, family members were often identified as pressuring doctors to provide the women with a cesarean section and allowing family members to enter could increase the pressure that doctors receive to perform cesareans.

The doctor's role during labor and birth

At all hospitals, with the exception of the Red Cross Hospital, the *guardia* doctor's role involves monitoring the woman during labor and birth in case there are any complications, while the *obstetra* monitors a woman's progress during labor (performs tactile exams, monitors contractions) and performs all straightforward vaginal births. There is no responsibility on the part of the doctor or the *obstetra* to provide continuous care and support during labor. At the Red Cross Hospital, where *obstetras* do not practice, but rather staff consists of attending doctors and residents, a first year resident

[xx] To be tossed out like trash

accompanies the woman continuously during her labor, monitoring her physical health and providing emotional support.

When doctors discussed the kind of emotional support that needs to be provided to women during labor, it involved the *obstetra* or the doctor providing information on the process of labor and talking to women in order to calm them down. However, doctors stated that this information would be more useful if provided during prenatal care. Two doctors, both women, discussed more in depth the importance of providing emotional support to women and having patience when the women get upset. These two female doctors (Dr.4, Trinidad and Dr.9, Luque) specifically stated that being mothers themselves allows them to be more empathetic and makes them more capable of providing women with emotional support.

Doctors' descriptions of maternal preference for cesarean sections

Doctors identified a strong maternal preference for cesarean sections, often resulting in women begging doctors to perform surgery. This suggests that women feel as though they have the agency to choose an elective cesarean section. Women's agency to choose a cesarean section varies in the public and private sector. According to the doctors interviewed and key informant interviews, if a woman has enough money, she can go to a private hospital and choose a cesarean section. However, the fact that women ask doctors to provide them with cesarean sections in the absence of a medical indication implies that women who birth in public hospitals also feel as though they can choose a cesarean section.

The role of the private sector

Doctors discussed the role of the private sector in impacting the experience of women choosing cesarean sections. Medicine within the private sector is performed differently, with the decision-making being described by doctors as a "matter of business" (Dr.7, Red Cross) where medicine is "guided by the desire of the patient" (Dr.8, Red Cross). Doctors perceived women "*del privado*"[xxi] as wanting cesareans because they do not want to experience pain. If a doctor denies a woman a cesarean section because she does not have a medical indication, it is believed that she will find another doctor to perform the operation, resulting in the doctor losing a client and losing money.

Even though this ability to choose elective cesarean sections exists exclusively at private hospitals, according to the doctors, the experience of being able to choose a cesarean in the private sector impacts the overall popularity of cesarean sections, resulting in an increased maternal preference for cesareans within both the private and public sector. Doctors described cesarean use as being "in style" (Dr.7, Red Cross) or "a cultural issue" (Dr.8, Red Cross). The popular use of cesarean sections within the private sector has resulted in cesareans becoming a marker of status: "Some think that it is an issue of status more or less, the *chuchi*, or the people of money, they operate, right, and me, if I have a vaginal birth, I am more or less of another category" (Dr.7, Red Cross). Since women of a higher socioeconomic status are the ones who are birthing in private hospitals and these are the same women who are choosing cesarean sections, other

[xxi] *Del privado* refers to women who attend private hospitals. These women were described as a completely separate population from those who utilize the public hospitals because they are of a higher socioeconomic status and have higher levels of education.

women then begin to believe that cesarean sections must be better if this is what the higher-class women are choosing. This implies that a woman who has a cesarean section is also a woman of a higher status.

When women beg for cesarean sections

In the public hospitals, doctors discussed how women often ask for cesarean sections, believing that they have the right to choose a cesarean section. The theme of women begging for cesarean sections recurred in doctor interviews. When a woman begs for a cesarean section, doctors described their role as convincing the woman to have a vaginal birth, by explaining hospital protocol, the risks of a cesarean section, and the benefits of a vaginal birth. Sometimes doctors are able to change a woman's mind; however, often this is not the case.

Women who desire cesarean sections during their labor are more likely to end up having a cesarean section. The increased need for a cesarean section can result from a woman's lack of "cooperation" during her labor, causing her to be more likely to have a complication that requires a cesarean section:

> "Generally, the patients are screaming, screaming, operate on me, operate on me, the moment arrives for the birth or well that we bring them to the birthing room and they do not push. Or well, they don't help with the labor, right, and the baby stays there suffering, almost ready to be born and you end up doing an emergency cesarean section because the baby does not come out. The baby is there and the heartbeat drops. She screams, screams, screams, cries, cries, cries, cries and the minutes are already passing by, right, so when we are with a patient that does not cooperate, we decide to operate because it is going to be worse in the moment of birth because they are not going to help you" (Group Interview: Dr.11, Luque).

> "Many times it [maternal cooperation] even affects the baby. It makes it so that there is fetal suffering and you have to go in [operate] urgently. It is difficult. It usually changes the progression of labor and sometimes they are births that are a little complicated and sometimes they arrive with a good ending. Sometimes it ends with a cesarean section…of course it has a lot to do with the cooperation in order to facilitate things" (Dr.9, Luque).

Women who beg for cesareans are also more likely to have their birth result in a cesarean section if the doctor loses patience, gets tired of fighting with the woman, and fears malpractice, therefore choosing to give in to the woman's pressure. When women ask for cesarean sections, they often threaten doctors: "They yell, yell yell… until you cannot take it anymore because they threaten you. 'If something happens to my baby… it is going to be your fault'" (Group Interview: Dr.11, Luque). Women are especially likely to threaten doctors if they heard from another doctor during their prenatal care that they needed a cesarean section, because these women genuinely believe that there is something wrong with their baby and they need to have a cesarean section. Many doctors stated that it is easier to perform a cesarean section on a woman who is threatening them:

> "Because they demand, because they pressure you, because they come brainwashed that they have to have a cesarean section…what do you do? Do you row against the current or pee against the wind? You can't, everything is going to come down on you later. You are just going to do it" (Dr.3, Trinidad).

> "You operate because you cannot have a patient screaming there all night, for the family to enter. They ask you what is happening. They threaten you. There is no way for them to understand that the baby is fine, that she is fine" (Group Interview: Dr.11, Luque).

Doctors are afraid that if they do not perform a cesarean section when a woman asks, then they may have to eventually deal with consequences, such as malpractice suits, discussed below.

Doctors' perceptions of cesarean sections

Doctors varied in their perceptions of cesarean sections, with some doctors acting as strong advocates for vaginal birth and others preferring cesarean sections. Even though none of the doctors specifically identified themselves as strong proponents of

cesarean sections, doctors discussed how some doctors are "*médicos cesariadores*"[xxii] (Dr.7, Red Cross) that prefer cesarean sections because they lack the patience necessary for a natural birth. These doctors perform cesarean sections without the presence of medical indications.

Even though none of the doctors considered themselves "*médicos cesariadores*," doctors did discuss the convenience of performing cesarean sections. Most doctors identified vaginal birth as easier than a cesarean section "when everything goes well" (Dr.4, Trinidad), especially because the *obstetra* takes on the primary role in a vaginal birth (this excludes the Red Cross Hospital, where they only use doctors during birth). However, some doctors expressed that performing a cesarean section is more "comfortable" than performing a vaginal birth, especially when a woman is begging for a cesarean section:

> "Because the screaming ends, the pressure ends, and suddenly you are there, the birth can become complicated and you see that you do not know. You are there 'at the extreme' like they say. So, you finish, you do the cesarean section and all of the mother's suffering ends and all of everyone's worries" (Group Interview: Dr.11, Luque).
>
> "Everything that you are afraid of, all of the pressure of a vaginal birth, with a cesarean section you cut and it lasts 40 minutes… the other can last hours" (Group interview: Dr.10, Luque).

Time was also considered a factor in the convenience of performing a cesarean section, because even though it is the *obstetra*'s role to conduct the birth, the doctor still needs to

[xxii] Cesarean-loving doctors

"be monitoring the patient" and "*conducir*"[xxiii] the labor (Dr.4, Trinidad), requiring them to stay awake and attentive for long hours.

Doctors' perceptions of risks and complications

Doctors had varying opinions regarding whether a cesarean section or vaginal birth is riskier, with most doctors stating that vaginal birth is the safest option because increased risks are always associated with surgery. Doctors who were the strongest advocates for vaginal birth were most knowledgeable regarding the literature that exists on cesarean sections, specifically citing the increased risks involved in having a cesarean section and commenting on the World Health Organization's recommendation for cesarean sections.

However, contradictions were present within the interviews, with some doctors associating vaginal birth with increased risks. While it was agreed that more risks might occur with a cesarean section, the potential risks that can occur in a vaginal birth were perceived as more frightening because the doctor has less control over fixing any potential problems:

> "You feel like your hands are tied… when you can't opt for a cesarean and the baby does not want come out vaginally, that is when the complications come… In the cesarean section, generally, that is better controlled, right, because you are in the surgical environment. She is already anesthetized and you can use many maneuvers to avoid [complications]" (Dr.2, Trinidad).

Doctors stated that if there is the possibility of any kind of risk than it is better to operate than take any chances: "Before any complication, I operate" (Dr.3, Trinidad). Taking risks with a potential complication in a vaginal birth is perceived as especially

[xxiii] *Conducir* means to drive. When doctors discuss how they *conducir* labor, they refer to actively assisting with the progression of labor through the use of medical interventions, such as artificial oxytocin.

problematic and fear invoking because doctors are concerned about being accused of negligence.

Malpractice

The issue of malpractice was a saturated theme within doctor interviews. The actual prevalence of malpractice cases is unknown; however, when asked about the experience of being an obstetric gynecologist, the issue of malpractice was prompted by doctors and discussed at length.

Almost all doctors perceived conducting vaginal births as being associated with an increased possibility of experiencing a malpractice suit, especially when a woman begs for a cesarean section. One doctor stated, “A surgeon operates first and argues later” (Dr.8, Red Cross). Doctors recognized that if a woman has a vaginal birth with complications, “the mother will always ask why didn’t you do a cesarean section;” however, if a cesarean section is performed and complications occur, “the mother is never going to say why didn’t you do a vaginal birth” (Dr.8, Red Cross). Doctors who perform cesarean sections are perceived as having done everything that they possibly could to help save the life of a baby or mother because they used all of the medical technologies available to them. However, one doctor at the Trinidad Hospital stated otherwise, that he does not like performing cesarean sections when they are not medically indicated because they come with an increased risk and therefore an increased risk of experiencing a malpractice suit (Dr.3, Trinidad)

Since most doctors felt that a malpractice suit is less likely to occur in the performance of a cesarean section, doctors often choose cesarean sections simply to avoid any problems:

> "Because if I become inflexible with the family, they are going to go to the director and accuse me, they are all going to accuse me here. They are going to call the media. They are going to say that the baby died and I am at fault. So, it is easier if you do a cesarean section. It comes out and it's over, in order to avoid a problem for me" (Dr.4, Trinidad).

> "They end up blaming the doctor that does, blame them for how the baby came out and whether or not it is accurate, the accusation has already come. Even if you defend yourself and the case ends in your favor, you already went through all of the stress and all of the costs that the case required and recently in obstetrics [malpractice] is very frequent. It is terrible. It increases the incidence of cesarean sections and you avoid those kinds of problems" (Dr.2, Trinidad).

Therefore, doctors' decisions regarding mode of delivery are not only driven by medical indications, but are also impacted by the legal system.

Doctors' recommendations

Doctors recommended improving the experience of prenatal care and the birth experience for women; however, doctors primarily focused on prenatal care and education as a factor in decreasing the cesarean section rate. In order to improve prenatal care, doctors discussed the need to educate women on the value of prenatal care in order to increase attendance for prenatal care visits. Doctors also discussed focusing more on the "education and not as much the medical testing" in prenatal care (Dr.8, Red Cross). Prenatal care should include providing women with education and even childbirth education classes that include *psicoprofilaxis*.[xxiv] In order to improve the experience of prenatal care, doctors also recommended increasing the number of doctors in order to reduce wait-time for women. This would make the experience of coming to the hospital easier and would allow women to have longer prenatal consultations. One doctor also discussed the importance of increasing the consistency between the practices of prenatal

[xxiv] *Psichoprofilaxis* is a type of childbirth education in which pregnant women learn about specific positions and techniques for naturally reducing pain during labor and making labor progress more quickly

care doctors and *guardia* doctors, by having the same doctor who recommends a cesarean section perform a cesarean section.

In order to improve birth experiences, one doctor stated that there needs to be improved equipment to better monitor women during labor; however, other doctors discussed the idea of making birth more natural. Doctors discussed the use of "*parto humanizado,*"[xxv] which was defined as a birth that is not interrupted with medical interventions to hurry labor along: "Allowing the patient to progress on her own, without the help of oxytocin or anything, yes, that she dilates, dilates, dilates, dilates like that, until she has [the baby]" (Dr.4, Trinidad). Doctors also discussed the accompaniment of women during labor, either by a family member or by a birth doula.

In order to the reduce the cesarean section rate, doctors also recommended increasing the control over doctors, by having doctors report to head doctors in the hospital regarding the reasoning behind each surgery that they perform. Doctors discussed the importance of holding doctors accountable if they perform an unnecessary surgery.

In-Depth Individual Interviews with Postpartum Women

Interviews with women both reinforced and contradicted statements made by doctors. Experiences between women had great variation, with the most variation occurring based on desire for a cesarean section or vaginal birth and hospital where the birth occurred. Though the study was designed to understand differences between women who had vaginal and cesarean births, surprisingly, there was not as much variation between these groups of women. Maternal desire for a cesarean section did not

[xxv] humanized birth

necessarily precipitate the occurrence of a cesarean section. Furthermore, across these groups, women had similar experiences of prenatal care, use of medical technologies during birth, and social support during labor and birth. The pattern that was identified in the data when comparing women who had vaginal births with women who had cesarean sections was that women who had vaginal births were more likely to report negative feelings regarding their birth experience; however, there was variation in feelings of negativity, with two women who had vaginal births reporting very positive experiences and one woman who had a cesarean section reporting a very negative experience. Negative experiences during vaginal birth were specifically related to doctor neglect, fear during labor, and pain.

Women's accounts of experiences of prenatal care

All twenty women described frequent prenatal visits, with women often stating that they had at least ten visits. Women with complicated pregnancies had even more frequent visits and were often admitted in the hospital, sometimes for weeks at a time. Most women attended their first visit upon realizing that they were pregnant, though this was often after completion of the first trimester. Only one woman stated that she waited until a complication occurred during her pregnancy that required her to attend the hospital (P3, Teresa, Vaginal Birth).[xxvi]

Some women received prenatal care from only one hospital, but many attended multiple hospitals, sometimes involving a combination of type of hospital, including public hospitals, private hospitals, social security hospitals, and the military hospital. Approximately half of the women saw the same doctor throughout all of their prenatal

[xxvi] All names presented here are pseudonyms in order to protect the participants' identities.

care, while other saw various doctors. The variation in the number of doctors seen during prenatal care occurred among women who attended prenatal care at all three hospitals included in the study.

When women were asked what occurred during prenatal care, all women reported that prenatal care consisted of a series of medical procedures that were meant to address problems during pregnancy. They did not state that prenatal care informed them about how to prepare for birth:

> "They weigh you, they monitor your blood pressure, they measure your belly, they listen to the baby's heartbeat, all of that, and they tell you how you should eat" (P19, Violeta, Vaginal Birth).

> "They examined everything, they monitored my blood pressure, they weighed me, they saw the estimated due date of the baby and all of those things. There they were very good. I didn't have any complications and well and all of the tests that they sent me to do" (P16, Claudia, Cesarean).

> "And I didn't have any problems with blood pressure, no problems, not a single sickness, nothing. They did all of my analyses first and in the first consultation they do everything, all of the analyses, and they give you folic acid and they do all of your analyses of hemoglobin, if you have AIDS, if you have any venereal diseases, all of the complete analyses" (P15, Magdalena, Cesarean).

Though most women said that they were "prepared" by their doctor(s) for vaginal birth, all women who received prenatal care exclusively at public hospitals or at the Red Cross said that they did not receive any information regarding what happens during labor or how a woman can prepare herself for vaginal birth:

> "They didn't give me any education, in that sense, they only, they did tests, the little things in order to do my analyses, my tests, and those things, and all of those things, that's it" (P17, Regina, Cesarean).

> "In the Red Cross with all of the doctors that consult with you, they looked at my tests and everything is fine, everything is fine they said and like I, like it is my first time, they didn't say to me, look, you have this and don't go and walk or don't move, do this or the other thing, take care of yourself, like that no, nothing, right" (P15, Magdalena, Cesarean).

The information (or lack of information) that women received was related to the amount of time that the doctor was able to spend with them. In the public hospitals, the experience of prenatal care was described as rushed: "There are a lot of people and they want to attend to everything quickly and they don't really explain anything" (P18, Karla, Cesarean).

Women who received prenatal care at private hospitals in addition to public ones often preferred the service that they received in the private sector, especially because private doctors spent more time talking to them:

> "[In a private hospital] they gave me more or less some instructions because it was my first baby and the doctor was very nice. She told me you are going to have this and suddenly the pains are going to come every ten minutes. If it is three times every ten minutes then you are already going to be in the moment of birth and prepare yourself or when you notice some liquid, that your water all of a sudden broke, you have to go to the emergency room and that's it" (P16, Claudia, Cesarean).

> "It was better. In the private hospital they always have more patience. They explain better because when I went for the first consultation doctor (*name*), he was with me for an hour, an hour explaining everything, right, about the development and that, that you are going to take this medicine, you are going to do this test and they indicate all of the first steps" (P15, Magdalena, Cesarean).

In the public sector, instead of being given information spontaneously, women obtained information by asking questions. However, some did not ask questions. Sometimes women did not ask questions because they did not want information. This was especially true for women who had previous births because they often felt like they already knew everything that they needed to know. Other women felt that they did not need to ask because they were told that everything was okay: "I wanted to know more but mostly I didn't ask questions because they told me that everything was fine, everything, and because I didn't have any discomfort either" (P16, Claudia). Since the primary focus

of prenatal care is the prevention and identification of potential complications, if risks were not identified, some women felt that they did not need to ask about other aspects of labor or birth. Furthermore, when women did ask questions, they were generally not to learn about what happens during labor, but rather they were related to concerns that the women had about potential complications during their pregnancies.

One question that women consistently expressed asking their doctors was regarding whether they were going to have a vaginal birth or a cesarean section. When women asked about mode of delivery in the public sector, doctors told them that they could have a vaginal birth and sometimes, doctors even explained why vaginal birth is better for a woman than a cesarean section. However, women who received prenatal care in the private sector were often told differently. Karla (P18, Cesarean) was told by a doctor at a private hospital that she would need a cesarean section because of her age (age=30) and Magdalena (P15, Cesarean) was told that if the ultrasound showed that the baby had exceeded 3.5 kilograms (7.72 pounds), that she should have a cesarean section "Because you are going to injure yourself and injure your baby… when the baby is very big, they have to turn the baby and you will suffer" (P15, Magdalena, Cesarean).[xxvii] These two women who were prepared by private doctors to have a cesarean section were the only women who more actively chose to have cesarean sections. Magdalena (P15) was the only woman who had a pre-scheduled cesarean section at the Red Cross Hospital. Karla (P18) had planned to birth at the Regional Hospital of Luque, but at the last minute chose to go to a private hospital because she could not handle the pains of labor any longer. During their prenatal care, three women at the Trinidad Hospital were also told

[xxvii] In Spanish, the word, "*golpear"* was used to describe being injured. *Golpear* literally translates as "to hit," "to beat," or "to bang," implying a violent act of injury.

that they were going to have a cesarean section; however, all of these births resulted in vaginal births, since the *guardia* doctor later informed them that they did not need cesarean sections (P2, Maria; P3, Teresa; P6, Beatriz).

Women's experiences with medical technology

Women discussed the use of medical technologies during labor and birth, expressing fear of the medical procedures that occur during vaginal birth, especially the use of episiotomies and forceps. Sometimes, women even expressed that the idea of using these medical interventions was so bad that they would prefer to have a cesarean section:

> "Some have [a cesarean] because of fear, because they don't want to be cut, because they say it is the same if you are going to cut me down there, it is better to have a cesarean section to not feel pain" (P8, Marta, Vaginal Birth).

> "Comments that you should not have a vaginal birth because it is going to hurt a lot, you are going to tear, they are going to cut you, they are going to use forceps, which is an apparatus that they put inside you to remove the baby, that it can hurt the baby, that this and the other thing. They are comments that a person, different people tell you and they scare you. With me, for example, it scared me. My God, what, what is going to happen to me" (P10, Julia, Vaginal Birth).

Women's fears of medical technology stemmed from other women's accounts and warnings regarding the use of medical technologies during labor.

When women discussed their own experiences of birth, they also stated their dissatisfaction with some of the medical interventions. Epidural analgesia during vaginal birth, which was only used with women at the Red Cross Hospital, was the only exception to the negative discussion of medical interventions, as it was generally discussed positively, helping women to not feel pain and to relax during labor. However, one woman stated that 42 days postpartum, she was still experiencing pain that she associated with the epidural (P8, Marta, Vaginal Birth).

Other medical interventions were not discussed in a positive way. One woman expressed feeling intense fear when she saw the doctor holding the scissors that she was going to use to rupture her membrane (P5, Barbara, Cesarean). Episiotomies were pervasively discussed by women and never discussed positively, with most women describing them as painful and bothersome. One woman even identified it as the only disadvantage of having a vaginal birth (P5. Barbara, Cesarean).

> "My birth was spectacular, or well, I can't complain. The only bothersome thing was when they cut you and sew you, right, that is the only thing that bothers you but the rest, the pain is bearable" (P10, Julia, Vaginal Birth).

> "I tore. I don't know what they cut for [the baby] to leave and they had to sew me… It is unpleasant because you feel everything. The anesthesia doesn't work… They gave me anesthesia, but I still felt everything" (P2, Maria, Vaginal Birth)

> "After, when they were sewing me there, it took a long time, it took an hour and a half or so for them to sew me… a long time because I didn't stay still because I felt a lot of discomfort" (P8, Marta, Vaginal Birth).

The use of medical technologies therefore contributes to women having negative experiences during vaginal birth.

Feeling "tirada" vs. experiencing continuous care: Social support during labor

Women expressed the desire to be accompanied by a loved one during labor. Not being accompanied during labor was directly related to the difficulty of having a vaginal birth. In the focus group discussion, one woman, who had a cesarean section at the Trinidad Hospital, described how her birth would have been different if her mother had accompanied her:

> "And that day I wanted my mom to be with me. Nobody can be with you. My mom was outside of the room there in the waiting room… Instead, if my mom was with me, I think that I would have been motivated to have for, or well for there, below, vaginally. Or well, for me, my mom is my support… because I wanted a vaginal birth. I had decided to have a vaginal birth, but suddenly

> because of the exhaustion that I already had, I was feeling tired, I wanted to sleep… There I could not handle it anymore, right, and it was almost 4pm and I said, or well, how much do I have to pay for you to give me a cesarean section because I can't take it anymore I said… I want a cesarean I said because I can't give any more. I don't know if I am going to be able to push. I don't know if I am going to be able to do this. For that, I chose a cesarean section. In that moment… if my mother was with me, I would have been encouraged to continue but I was motivated to have a cesarean section because I couldn't take it anymore" (FGD, Ramona, Cesarean).

Since women are unable to be accompanied by family members, doctor treatment becomes especially important because they are the only potential source of support that women receive during their labor and birth. The way doctors interact with birthing women strongly impacts birth outcomes, including the necessity of a cesarean section and the perceptions that a woman has about her birth. However, while some women experienced social support from doctors during labor, the experience of being supported during labor is not the typical experience of a woman giving birth in Gran Asunción. Even women who had positive experiences discussed the negative treatment that doctors provide to women in other hospitals, stating that doctors lack patience and often reprimand women when they complain about labor pains.

There was a great deal of variation in women's descriptions of treatment by doctors, depending mostly on the hospital where the woman gave birth, with women who birthed at the Red Cross Hospital reporting approval of the care that they received by the doctors, specifically because there was a doctor that provided continuous care during their labor. Women at other hospitals describe the experience of having doctors and nurses periodically and infrequently attend to them, which contributed to an increase in women's fears. However, the experiences of women at the Trinidad Hospital and the

Regional Hospital of Luque were not identical; with variation depending on the doctor or *obstetra* who cared for the woman during her labor and birth.

This variation is clearly represented with the stories of two women who both had vaginal births at the Trinidad Hospital. Teresa (P3) had a very difficult experience and was neglected by the medical staff, while Gabriela (P4) had a wonderful experience, with her birth being celebrated by the medical staff.

Teresa lives in a poor area of Asunción in a small one room home with a dirt floor. She had 6 children, but had experienced 7 vaginal births, with her birth prior to her most recent one resulting in her baby dying just after a few days. Teresa's previous birth experience caused her to be fearful in her current situation, which resulted in her desire for a cesarean section. Teresa had a complicated pregnancy and a doctor had told her during her prenatal care that she would have a cesarean section; however, her birth came prematurely, before a cesarean section was scheduled. Teresa was upset when the *guardia* doctors told her that she would have a vaginal birth.

During her labor, Teresa was neglected and experienced mistreatment. After Teresa's water broke, when she was about to give birth, Teresa informed the nurses and the *obstetra* that the baby was coming, but the *obstetra* did not believe her and she left to eat her lunch. During that time, the baby was born in the prepartum room without the assistance of medical personnel and the anesthesiologist had to run in and save the baby. The baby's cord was wrapped around its neck and the baby experienced complications as a result, with time spent in the NICU.

Gabriela's story was very different. Gabriela was having her first child and had an uncomplicated pregnancy. When she was 41 weeks pregnant, Gabriela went into

labor. Prior to giving birth, there had been conversation about having a cesarean because she was past her due date and because her baby was big, but Gabriela made it very clear to the doctors that she did not want a cesarean. On the day of her birth, the *guardia* doctor told Gabriela that it was up to her, that if she was able to get through it and do everything right, then she could birth vaginally.

Gabriela had a positive experience because she felt very supported her by the medical staff at the Trinidad Hospital, especially the nurses. Four nurses accompanied Gabriela during her entire labor. She said that they never left her side. The nurses performed massage and provided Gabriela with emotional support, which helped her a lot. When her baby was born, the birth was celebrated. Gabriela stated that she did not recall the pain from her birth, but did remember the support that she received.

These two stories represent the variation in women's experiences with medical staff, even when giving birth at the same hospital. These women's stories also represent the importance of doctor treatment when a woman is in labor; it is the doctor's influence that can make the difference between an empowering and beautiful experience like Gabriela's or a traumatizing experience like Teresa's.

Other women also discussed these differences, with women who were not accompanied by doctors during their labor describing birth as a dehumanizing experiencing, stating that they felt like an animal:

> "I think that when you are in the labor room and they leave you alone, as though you are a dog they leave you, because you are dying there, it is hurting you until you can't anymore and you need someone's help, or well the nurse or someone should be there. Instead they, they are there for a short while, they come and they look at you and they leave and that makes you more nervous. Or well, it made me more nervous because I am very nervous. I am not going to deny it" (FGD, Ramona, Cesarean)

> "I felt very bad when they left me. I felt like a, like an animal when they left me in the bed. You see that the dogs have their babies alone, right, and that is how I felt, that I had my baby alone" (P3, Teresa, Vaginal Birth).

Women also described the experience of doctors who constantly entered and left the room, only to perform some medical analysis and sometimes not saying anything. This made women feel more alone and contributed to an increase in nerves and depression during labor:

> "And the truth is that there was a moment that I, that I felt down because I was alone and I started to cry. A depression took hold of me, because I talked to the doctors and the one who came in and looked and [said] 'no, everything is fine,' that's it, he left… Or if they were less tolerant, they came and they looked at you and they didn't say anything. They touched you. They touched you and they left. So, that makes you more depressed. It makes you nervous. It grabs hold of you. There was a moment that it took hold of me, that I began to cry, to cry all night and I wasn't very, or well, it was very depressing, very upsetting, I don't know, something that you have to experience in order to understand" (P1, Sara, Vaginal Birth).

Women who were accompanied during labor described the doctor treatment as "excellent" or "super good." Being accompanied during labor made a huge impact on women's experiences, especially when they felt afraid:

> "It was evident that I was dying of fear and that I was in pain and everything else. There, she stayed with me, stood by my side when I was in the labor room. She stood by my side until I calmed down" (P11, Lucia, Vaginal Birth).

The experience of being treated well or poorly by a doctor also impacts a woman's ability to have a vaginal birth. Women who were supported by doctors during their labor felt an increased strength to be able to have a vaginal birth, even if they had previously desired a cesarean section:

> "She supported me a lot in order for me to calm down and have a vaginal birth, in order to get the idea of a cesarean section out of my head and that is how the doctors should tell their patients, for them to not be afraid, in order for them to be able to have a vaginal birth, in order to not cut" (P8, Marta, Vaginal Birth).

On the other hand, one woman (P16, Claudia, Cesarean) felt as though she did not receive the necessary motivation and patience from doctors in order to be able to have a vaginal birth and specifically felt as though that was the reason why she had a cesarean section. Claudia had reached complete dilation and stated that she had more energy to keep pushing during the second stage of labor, but that the doctors were tired because she had arrived in the middle of the night and they did not have the patience to allow her to keep trying for a vaginal birth. She recognized the importance for doctor's support in having a vaginal birth:

> "Well, maybe that they should attend to the patient better, no and so that they can encourage the person, motivate them so that they have the strength for the baby to come vaginally. No, and help them too… and give them time too" (P16, Claudia).

Talking to other women: The impact of the social network

The lack of preparation for birth, the overuse of medical technologies during labor and vaginal birth, and the lack of social support that women receive during labor all contribute to an overall negative experience of birth in Gran Asunción. When a woman is pregnant, she does not receive a lot of information from her doctor; however, she does receive information from other women. Women hear contradictory stories from other women; however, there is consistency in the fact that these narratives are not encouraging, as there is an absence of positive birth stories.

Women's interviews consistently represented a strong value for the information heard from other women while they were pregnant, with many decisions being made based on opinions and suggestions from other women, especially when choosing a hospital to attend for prenatal care and birth. Information received from other women also impacts perceptions that women have about labor and birth, especially with regards

to experiences of fear and preference for vaginal births or cesareans. Women often received information from other women or sought it from other women, instead of seeking it from doctors: "I only asked other people, everyone, or well to my sister, those who had vaginal births, how it was, if it was painful or not" (P14, Veronica, Cesarean).

Though it was uncommon, some women did not hear these contradictory stories from other women. Sandra (P12, Vaginal Birth), the youngest woman interviewed (age=17), said that she only heard stories from her mother and her grandmother. Sandra's family was supportive of her during her pregnancy and provided her with advice on how to have a vaginal birth and how not to be afraid. Sandra did not discuss hearing negative stories from other women. Sandra also did not discuss experiencing fear. Maribel (P20, Vaginal Birth), another young participant (age=18), stated that she did not hear too many stories because most of her friends had not had children yet. She recognized that most women do not want to discuss birth unless they have already experienced it or unless they are pregnant. Therefore, the knowledge that younger women receive may be different from that of women whose social networks include more mothers.

More commonly, stories that women heard from other women were varied in nature, with some women making statements that cesarean sections are better and others making statements that vaginal births are better. According to the women, these stories impact perceptions of fear about birth, since the stories that women hear from others are negative in nature.

Women's fears of vaginal birth and cesarean sections

The stories that women heard from other women combined with the fact that women did not receive information in preparation for birth from doctors contribute to women experiencing a great deal of fear regarding birth during their pregnancies. Women discussed fears of both vaginal births and cesarean sections. The most common fears that women had were related to the experiences of pain, either during vaginal birth or during the recovery from a cesarean section, and the potential for risks and complications, especially the possibility of a complication that could harm the health of their baby.

Regardless of which mode of delivery a woman is suggesting, stories were generally told within a negative context. For example, Magdalena (P15, Cesarean) stated "And my mother-in-law told me that she had a disastrous birth" and Maribel (P20) stated, "There are a lot of mothers that tell you the worst" (P20, Maribel, Vaginal Birth). Women often described the experience of hearing these negative and inconsistent stories as causing them to have increased fears about their labor:

> "The issue is that you see there are a lot of moms…my friends and they tell you different things. No, that you should have a cesarean section no, no that you should not have a vaginal birth because they are going to use forceps. They told me a million things and that scares you in the moment" (P10, Julia, Vaginal Birth).

Birth is always different for different women and experiences vary even more when they occur in different locations, with different doctors, and by different modes of delivery; therefore, it is logical that women are going to hear different opinions with regards to labor and birth. However, even though there was great variation in the stories that

women heard from others, some women received more persuasion for one mode of delivery than another.

Women heard negative accounts of vaginal births, with other women stating that vaginal birth is long and painful and that cesarean sections are better. Women who feared vaginal birth were most afraid of the pains experienced during labor and the length of the suffering that a woman experiences during vaginal birth.

> "I was always scared of birth and everything, of the birth pains, of all of that… everyone told me that it was painful and so I was guided with that… My grandmothers, my aunt, everyone, all of the people told me that vaginal birth is painful, that you need to be there for a lot of hours, that sometimes it is fast, sometimes it lasts a long time, all of those things, so I was a little scared and for that I always wanted a cesarean section" (P13, Elena, Cesaeran).

> "And now there are a lot of women who schedule their births in order to not feel pain. That is what I heard, in order to not feel pain because, or well, since technology is more advanced, so everyone wants to have a cesarean section and that's it. They cut you, the baby comes out, and that's it" (P18, Karla, Cesarean).

> "In all of the baby showers that they do for you, that is the commentary, the subject of birth and almost all, the majority had cesarean sections and the ones who had vaginal births tell you a terrible experience, a completely terrible experience, right, that they suffered pain" (P15, Magdalena, Cesarean).

Women who wanted cesarean sections were afraid that vaginal birth was very painful and believed that a cesarean section would be easier because it would allow them to avoid experiencing pain.

Women who feared vaginal birth were also concerned about potential risks and complications, especially with regards to the baby's health. Women who feared vaginal birth thought that their baby would be harmed during birth:

> "That was the idea that I had, that when you have a vaginal birth the baby supposedly, the baby wants to get injured and I am small and I was scared that my baby was going to get injured when he was born. So, for that also I wanted a

cesarean section" (P13, Elena, Cesarean).[xxviii]

> "I was scared. I said that I had a premonition that something was going to happen to my baby. I had a strong premonition because starting when I was 6 months pregnant I felt that something was going to happen to my baby, that he was going to asphixiate or that he was going to suffocate or something like that, that he wasn't going to be born, right. I thought that he was going to get stuck wtih his shoulder" (P3, Teresa, Vaginal Birth).

Women purvasively stated that their baby's health was their priority: "The only thing that I wanted was for my baby to be okay" (P9, Julia, Cesarean). Some women also felt that vaginal birth was potentially risky for the mother, but this fear was not nearly as prominent or as influential:

> "Because some women are scared that, like my mother says bringing a child into the world is like being between life and death because one doesn't know what the process is going to be in the moment of birth and so I said, if it is the will of god and I am in the hands of God it is going to be, or well that it is God who guides me" (P16, Claudia, Cesarean).

Claudia (P16) was not scared of the possibility of dying during childbirth; however, she was concerned about the health of her baby. Claudia wanted a vaginal birth, but she was willing to do whatever needed to be done for the safety of her baby; therefore, when she was told that she needed a cesarean section, she did not want it, but she felt that "there wasn't any other way" because she did not want to put her baby at risk.

Not all women feared vaginal birth. Women who already experienced vaginal birth were not afraid because they knew what to expect from birth. Of women who were having their first children, not having fear was atypical, but a few women stated that they were not afraid of the pain from vaginal birth. These women perceived vaginal birth as a normal and natural experience and perceived the woman's body as intended to birth vaginally:

[xxviii] Again, the word "*golpear*" is used to describe injury, implying a violent injury.

> "I wanted to have a vaginal birth. I didn't want to have a cesarean section because I had the understanding that here in Paraguay seventy percent of the women have cesarean sections and I asked this to women and they said that it is because they are scared of the pain that they have when they give birth vaginally and I said but that is the normal way to have a child, a woman, a baby, vaginally, without a cesarean section, no, and that. Well, it is God's command also, that is what his word says, no. So, I was not scared. It did not cause me any fear in the moment when my baby was going to be born, not even the pains and I said I am going to endure and all of that because there are also a lot [of women] who have vaginal births" (P16, Claudia, Cesarean).

> "But for me, in my head, the more that everyone said something it was clear that I had to have a vaginal birth because for me it is that the human has always given birth vaginally and only later came the issue of cesarean sections and the human body is prepared to birth vaginally because, like I said, God made us this way and he gave us the form to be able to [give birth] and that it hurts a woman, that's it, that it is going to hurt and that the pain is unforgettable and well and for me it was better vaginally and it is better to give birth vaginally" (P15, Magdalena, Cesarean).

The natural process of birth and the experience of suffering during birth was also perceived as a ritual to enter motherhood. In order for a mother to love her child and "in order to know what it is to be a mother" (P19, Violeta, Vaginal Birth), a woman needs to suffer. A woman who has a cesarean section can still have this valid experience of entering motherhood as long as she does not pre-plan her cesarean section and still experiences contractions:

> "My mother says that the women who don't suffer any pain during birth are not mothers and a woman is a mother when she knows what the pain is and it is true because you go, you schedule your [cesarean], you go, they remove it there and it's done. You don't feel anything. You feel the pain, the cut, everything you want, but the pain of the contractions and all of that you don't feel at all" (P18, Karla, Cesarean).

> "And before they said, or well, my mother always said that a person who has a cesarean section does not love their child she says because, they do not suffer, because that. The elders always said, my grandmother also said that and now I said to my mother, I had my daughter with a cesarean section and I adore her. Yes, but the difference is that you didn't schedule your cesarean section, you suffered all of the pain that a mother experiences…because I said it hurt when I

> was there, I suffered a lot. I am not going to deny that and I think that that is the difference with the affection" (FGD, Ramona, Cesarean).

Women who wanted vaginal births did not necessarily feel that vaginal birth was a positive experience, but rather they had heard from other women that cesarean sections required long and painful recoveries:

> "Everyone says to you, ay, my sister, you don't know what it is like. You scream, you kick, but they also said it is only a short while and then after everything passes. It is better to have a vaginal birth because everything is fast. You suffer a little but it is all fast. On the other hand, with a cesarean section, it takes longer with the issue of the cut that you have, that you need to be cleaning it, this and that. On the other hand, if you have a vaginal birth, it is just a short while and you get up as if nothing [happened]" (P14, Veronica, Cesarean)

> "[I know about cesarean sections] because of my cousin and because she told me how it was, that it hurt more, that the recuperation takes much longer than a vaginal birth. With a vaginal birth, one week later you can hold your baby and you can move and all of that. With a cesarean section, no, and that is what I didn't want" (P6, Beatriz, Vaginal Birth)

> "My friend, the one who had a cesarean section, said that she couldn't even dress herself because she would hurt her cut, so I didn't want that to happen and for that, because my sister-in-law when she had my little niece, the next day she was already doing very well. They discharged her from the hospital and she was already in her house and she could already wash clothes, mine, my little niece's, and I saw that she was doing very well so I wanted a vaginal birth" (P20, Maribel, Vaginal Birth).

Women who feared cesarean sections while they were pregnant were not as concerned about potential risks for the baby, but rather discussed fears of complications that were more related to their own health, identifying the possibility for complications that a woman can experience during cesarean sections, with the greatest fears being related to anasthesia. Women who actually had cesarean sections did not necessarily fear the idea of having a cesarean section during their pregnancies, but often experienced fear in the moment when they were told that they would need a cesarean section, because they were afraid that their baby was in danger.

Women's recommendations

To reduce the cesarean section rate and improve the experience of vaginal birth, women had a lot of similar recommendations to doctors, with the primary focus being on doctor treatment during both prenatal care and birth. Women said that during prenatal visits, doctors need to provide more information and clearer explanations about medical analyses, about the woman's health status, and what she should expect during her pregnancy and birth. These explanations need to be consistent between doctors, instead of having women hear different opinions from different doctors. According to women, there also need to be more doctors so that women can have an easier experience with less waiting when they attend prenatal visits. In order to reduce the cesarean section rate, one woman suggested having information sessions that discuss the benefits of a vaginal birth and the risks involved with cesarean sections.

Women also discussed the need to improve doctor treatment during labor. Women discussed the desire to be accompanied during labor, either by a family member or by a doctor. Women who gave birth at the Red Cross Hospital approved of the fact that they received continuous care by a doctor during their labor and recommended that this kind of care exist at all hospitals. In addition to continuous presence during labor, women also said that doctors and nurses need to be more patient, offer more emotional support during labor, and provide clearer explanations about what is occurring during labor.

Chapter 5: Discussion

This study used qualitative data collected from individual in-depth interviews with postpartum women and obstetric gynecologists to understand why there is a high cesarean section rate in Gran Asunción, Paraguay. High cesarean section use is not simply the result of maternal or doctor preference for cesarean sections, but rather study finding show that the high use of cesarean sections is the result of a complex interplay of many factors that all contribute to a medicalized birth experience. These factors include doctors' control over the birth process, a culture of fear around birth, an unpleasant vaginal birth experience, failure to educate women during pregnancy, lack of continuity of care, poor hospital infrastructure, and a legal system that causes doctors to be fearful of litigation in the presence of medical complications. Since the causes of the high cesarean section rate are complex, reducing the cesarean section rate is challenging. Interventions to reduce the cesarean section rate need to focus on improving vaginal birth. To be successful, interventions should occur on multiple levels, addressing doctors' practices, women's perceptions of birth, and hospital infrastructure and policies. Some of the interventions suggested here are part of a larger plan to improve birth in Gran Asunción, Paraguay. However, in the more immediate future, smaller and more realistic steps can be made to change the way that birth is experienced in Gran Asunción, including additional research and advocacy within the Ministry of Health.

Birth culture: Fear and the medicalization of birth

The normative experience of vaginal birth in Gran Asunción is a medicalized one, in which doctors control the birth process. Doctors consistently used the term, "*conducir,*" which literally means to drive, when describing their role in labor,

demonstrating their perception of the doctor's role as a very active one in which the doctor manages or "drives" labor. When a doctor drives labor, the woman's role becomes passive. Women's inability to play an active role in their own births stems from a patriarchic perception of birth, where women's bodies are not trusted to birth a baby, but rather uteruses are perceived as involuntary muscles.[38, 56] Lack of trust in the woman's body requires doctors to be the primary actors during birth, with the necessity of using numerous medical interventions, such as artificial oxytocin, in order to more quickly progress labor. The most passive role a woman can play in her own birth is during a cesarean section, where she lies on a surgical table, anesthetized, while the doctor removes the baby from her uterus.

On the contrary, the humanized birth model, also known as the midwifery model, allows labor to progress spontaneously and ensures that the woman is fully supported during labor. This model supports a holistic perspective of birth in which the woman's body is trusted in knowing how to birth a baby.[56] Women's autonomy, involving active participation in the decisions that are made during birth are an important part of the humanized model.[57] The humanized birth model also encourages that medial personnel pay attention to the suffering that women experience during labor and show kindness and empathy to birthing women.[57] The women in this study discussed the loneliness and fear associated with being ignored by medical staff during labor and expressed a desire for increased social support from doctors, midwives, and nurses.

The primary representation of birth in Gran Asunción is reflective of a lack of humanized birth care, with accounts of birth including frightening experiences, defined by pain and suffering. Women do not necessarily perceive cesarean sections positively

either because they have concerns about the potential for long and difficult recoveries. However, whether discussing a vaginal birth or a cesarean section, the stories told by women are negative and reproduce a culture of fear. In addition, when women advise each other on the mode of delivery that they should choose, there is an implication that women have the ability to choose between the two options of a vaginal birth or a cesarean section. This means that many women in Gran Asunción do not perceive cesarean sections as a medical technology to be used only in the case of emergency, but rather perceive the procedure as a way out of the suffering involved in vaginal birth.

Women's beliefs about agency in choosing a cesarean section are accurate according to the experience of birth in the private sector. A woman who has enough money to pay for a cesarean section can choose to have one in the private sector. The frequency and ease in which a woman can have a cesarean section in a private hospital (whether because she chooses the cesarean or because the doctor chooses the cesarean) creates a representation of cesarean sections as an accepted mode of delivery for women of a higher socioeconomic status. The use of cesarean sections as a status marker only increases the popularity of cesarean sections among women in the general population. However, the majority of women in Gran Asunción do not have the economic capacity to deliver in these private hospitals and therefore, technically speaking, the "option" to have cesarean section or vaginal birth does not exist for them.

The belief that a woman can choose a cesarean section results in women asking doctors in both the private and public sectors to perform cesarean sections. During their prenatal care or during labor, women often ask doctors about the possibility of having a cesarean section. Doctors reported that during labor, women beg them to perform

cesarean sections. These women are perceived as not "cooperating" during labor. The non-compliance of women during labor is described as women panicking during labor, asking for cesarean sections, and not pushing effectively. This non-compliance might be different if doctors, midwives, and nurses provided emotional support or encouragement to women during labor; however, while some *guardia* doctors (especially the female doctors) recognized that it is their job to calm a woman during labor, more commonly *guardia* doctors perceived a woman's lack of "cooperation" as resulting from a lack of preparation for vaginal birth, perceived as the responsibility of the women and the prenatal doctors. All medical personnel, including the *guardia* doctors should be taking a responsibility in helping to "prepare" women for vaginal birth, by providing support and childbirth education to women.

When women beg for cesarean sections in the public sector, a doctor is more likely to want to perform a cesarean section. The culture of fear around birth extends to doctors, who are afraid of the complications associated with vaginal birth. While doctors recognized that cesarean sections have a greater possibility of complications, doctors perceived the complications from a vaginal birth to be more alarming than those of a cesarean section. The complications from a cesarean section occur within a surgical space and doctors are trained to be surgeons. In fact, their primary role on the *guardia* shift is to perform a surgery in the presence of complications. Doctors are less familiar dealing with complicated vaginal births, but their training as surgeons enable them to feel more equipped to perform a cesarean section, even a complicated one. This leads doctors to be more fearful of a complicated vaginal birth, which in turn increases their utilization of cesarean sections.

The sensitivity that doctors have about potential complications during vaginal birth is also impacted by the Paraguayan legal system, in which doctors are afraid of being accused of malpractice. Almost all doctors believed that they are more likely to experience malpractice when assisting with a vaginal birth because even if a complication occurs during a cesarean section, the utilization of a cesarean section means that the doctor has used every available medical technology to avoid a complication. Therefore, decisions to perform cesarean sections are not always made based on the presence of actual medical indications, but rather a fear of potential complications. Since all discussions of malpractice came directly from doctors and research did not extend to gain a deeper understanding of the frequency of malpractice cases, additional research should be done to identify the extremity of this problem as it relates to the birth experience.

Interventions to reduce the cesarean section rate

To reduce the cesarean section rate in Gran Asunción, the beliefs that women and doctors have about birth need to change by shifting away from a birth culture of fear where doctors are drivers and cesarean sections are an option to avoid suffering to one where vaginal birth is perceived as a positive experience and cesarean sections are utilized only when necessary. Vaginal birth can only be perceived as a positive experience if women's lived experiences are more positive and humanizing. Vaginal birth experiences can be improved through interventions that more appropriately prepare women for vaginal birth while they are pregnant, increase the continuity of care that doctors provide, reduce the use of unnecessary and potentially harmful medical interventions and labor practices, and promote continuous care and emotional support for women during labor and birth. To address the cesarean culture that is being created by a

fear of birth and a woman's perception of her agency to choose a cesarean section, interventions need to change the system that has high legal consequences for doctors who perform vaginal births and no repercussions for the unnecessary use of cesarean sections in addition to reducing the number of cesarean sections occurring in the private sector. These interventions will require a great deal of time, money, and government support in order for appropriate implementation to occur. Therefore, more feasible and immediate steps to be taken include further research on birth in Gran Asunción and advocacy for humanized birth at a government level.

Childbirth Education

Interviews with doctors and women identified a clear gap in preparation for vaginal birth. Doctors stated that women did not receive a sufficient amount of prenatal care; however, results from the secondary data analysis of the ENDSSR 2008 show that in 2008, 99.3% of women in Gran Asunción received at least one prenatal visit, with 97.4% attending at least 4 visits. Furthermore, according to the analysis of the ENDSSR 2008, women who had more prenatal care had higher rates of cesarean sections. This means that it is not the amount of prenatal care that is creating this gap in preparation for vaginal birth, but rather the type of prenatal care that women are receiving. Prenatal care focuses primarily on medical analyses; however, there is no protocol for the kind of information that doctors need to provide during prenatal visits. Furthermore, prenatal visits are rushed, not allowing for sufficient time for doctors to properly explain to women any important information that they need to know in order to prepare themselves for vaginal birth.

Childbirth education during pregnancy is an appropriate intervention to increase women's preparation for vaginal birth and to reduce maternal anxiety.[58] In order to better prepare women for birth, information about what occurs during childbirth should be increased during prenatal visits with doctors. In order to do this, the need to provide information needs to be valued equally to the need to perform medical analyses. Including specific protocol requiring doctors to provide necessary information to women during their pregnancies would increase the importance that doctors place on the need to educate women about birth. In addition, systemic changes need to occur as well, with more prenatal doctors working at each hospital so that more time can be spent in each prenatal visit.

One option is to conduct prenatal care in groups, using the model created by the program called CenteringPregnancy. CenteringPregnancy is a model for prenatal care that consists of ten 2-hour sessions with groups of 8-12 women who share similar estimated due dates, beginning when women have a gestational age of 12-16 weeks and ending with an early postpartum meeting.[59, 60] Groups are led by an obstetric provider and an assistant trained in the CenteringPregnancy model.[59, 61] Sessions incorporate assessment, education, and support[62] by providing women with an "opportunity to build community with other pregnant women, learn self-care skills, get assurance about the progression of her pregnancy, and gain knowledge about pregnancy, birth, and parenting."[60] In their first group meeting, women begin with having individualized care, including one-on-one time with their provider, and individual risk assessment involving the self-implementation of necessary medical procedures, by teaching women to perform self-assessment activities such as measuring their own blood pressure and weighing

themselves.[59, 60] Individual follow-up sessions are available if necessary, but prenatal care is experienced within the group, with a focus on having the women learn and teach each other about pregnancy and birth.[59] The CenteringPregnancy model incorporates the following 13 basic elements:

1. Health assessment occurs within the group space.
2. Participants are involved in self-care activities.
3. A facilitative leadership style is used.
4. The group is conducted in a circle.
5. Each session has an overall plan.
6. Attention is given to the core content, although emphasis may vary.
7. There is stability of group leadership.
8. Group conduct honors the contribution of each member.
9. The composition of the group is stable, not rigid.
10. Group size is optimal to promote the process.
11. Involvement of support people is optional.
12. Opportunity for socializing with the group is provided.
13. There is ongoing evaluation of outcomes.[62]

This group experience of prenatal care innately educates women through active participation, provides a social support network among pregnant women, and empowers women, while also ensuring their safety and appropriate assessment of any potential complications. The CenteringPregnancy model addresses all of the recommendations for care suggested by the Institute of Medicine in 2001[63] (Table 11) and has been proven to be effective in improving perinatal outcomes, such as reduced incidences of low birth weight[61, 64] and preterm birth.[64]

There may be some barriers implementing the CenteringPregnancy model in Gran Asunción, Paraguay. It is recognized that 2-hour sessions are long and may be difficult for women, especially employed women or women with additional children; however, with the current system for providing prenatal care, women are already arriving at the hospital and spending many hours there (usually more than 2) waiting to be seen.

Women should be able to bring their children with them to the CenteringPregnancy sessions if they cannot leave them with a caretaker. Another challenge is that in order to allow for these 2-hour sessions, additional medical providers would need to be hired. However, currently, it has been recognized that there is a deficit of medical staff providing consultations and this increase in doctors needs to occur regardless in order to provide appropriate education during prenatal care.

Another useful intervention that might be less challenging to put into practice would be the implementation of childbirth education classes. Currently, according to the women and doctors interviewed, occasional information sessions are occurring at some hospitals; however, none of the women interviewed reported having attended any of these courses. There are also courses conducted privately available to women at a cost; however, the fees result in these courses being inaccessible to the majority of the population in Gran Asunción. Instead, childbirth education classes should be free of charge, available to all women, have specific dates and times so that the women know when to attend them. Women should be recruited by doctors and encouraged to attend these courses. Curricula, such as those created by Lamaze[65] and Bradley[66] can be altered to fit the specific cultural context of Gran Asunción, but should incorporate the same values of teaching women about what occurs during vaginal birth, about the benefits and pitfalls of the use of different medical interventions, and about natural ways to reduce pain.

Continuity of Care

Women are currently experiencing an inconsistency in the doctors that they see during their prenatal care and the doctors who attend to them during labor and birth. This

lack of continuity of care creates a disconnection in the information that women receive from doctors, which poorly prepares women for vaginal birth. Furthermore, a discontinuity of care does not allow for women to build trust with the doctor who is present at her birth, making it difficult for her to respect the *guardia* doctor's opinion, especially if it deviates from the opinion that she was provided from a doctor who she got to know during her nine months of pregnancy. This lack of trust also makes it difficult for doctors to provide women with appropriate emotional support because these doctors are essentially strangers to the women, meeting them for the first time upon initiation of labor.

It would be difficult to completely reconstruct the current system of how obstetric gynecologists work at public hospitals in Gran Asunción, by having doctors attend to specific women and work with an on-call schedule. However, currently, *guardia* doctors are working numerous *guardia* shifts at multiple hospitals. If *guardia* doctors offer prenatal care services, it is not at the same hospital where they work *guardia* shifts. In order to increase the continuity of care, all doctors working as obstetric gynecologists should provide both prenatal and birth care, with each doctor working at only one hospital. If a doctor works providing prenatal care and works multiple *guardia* shifts at the same hospital, then there is a greater possibility that a woman will see the same doctor during her birth who attended to her during her pregnancy. Furthermore, all of the doctors who work at the same hospital can work together and build relationships, in order to increase the consistency between doctors' opinions, especially regarding the indications for cesarean sections. The main barrier recognized in this intervention is the

change to how doctors' salaries are paid and potential resistance to the shift made in the way that doctors conduct their schedules.

Reducing the use of unnecessary medical interventions and practices

In order to improve the experience of vaginal birth, the paradigm in which birth currently takes place in Gran Asunción needs to shift from a medicalized paradigm to the practice of a humanized birth model. This means reducing the use of medical interventions, unless there is a present indication that requires the use of medical technology. The humanized birth model is based in evidence, showing that the use of unnecessary interventions does not lead to improved obstetric outcomes.[40, 41] The use of various medical interventions during labor often occur in unison, with one intervention leading to the necessity of another, often culminating in the use of a cesarean section.[40, 56] In these cases, the final outcome of the cesarean section is perceived to be necessary; however, when the need for a cesarean section is precipitated by the use of unnecessary medical interventions, a cesarean section can be avoided by abstaining from using medical technologies without clear medical indication.[40]

The use of a humanized birth model also includes the promotion of practices that are beneficial and provide women with the appropriate kind of support that she needs during labor, including allowing oral consumption of fluids and freedom of movement.[41] Restriction of consumption of liquids serves the purpose of avoiding aspiration of stomach contents in case the woman needs general anesthesia.[40, 41] However, while this was more of a concern in the late 1940s when women in the United States often received general anesthesia for childbirth, currently, this is rarely the case, making aspiration a very unlikely experience.[40] The use of intravenous feeding is restrictive for women's

movement and the inability to consume food and drink during labor creates increased discomfort and reduces women's energy.[40] Regarding freedom of movement, there is no evidence showing that allowing women to move around during labor has any negative effect on birth, with the exception of the need to restrict women's movement due to a complication during labor.[67] Instead, freedom of movement during labor has been proven to improve obstetric outcomes, including shortening the duration of labor and the use of movement as a pain relief tool.[67, 68]

Harmful practices should also be eliminated, including the use of enemas, pubic shaving, and the lithotomy position, in which a woman is required to lie flat on her back while pushing.[41] Enemas and pubic shaving are not recommended as they are uncomfortable and are not considered necessary or even beneficial to women in labor.[41] These practices can also cause harm to women, with enemas resulting in an increased risk of damage to bowel and pubic shaving resulting in an increased risk of hepatitis infection.[41] During the second stage of labor, allowing women to choose a position, instead of birthing in the lithotomy position is beneficial because the lithotomy position narrows the pelvis by placing the woman's body weight on her tailbone and reduces oxygen to the baby by compressing major blood vessels and decreasing blood pressure.[41, 56] The lithotomy position also reduces the strength and frequency of contractions and is considered to be more uncomfortable, painful, and restrictive by women.[41, 56]

In order to change doctors' and *obstetras*' use of medical interventions and harmful practices and create a shift to humanized birth, training of doctors and *obstetras* needs to change, teaching all birth providers about humanized birth and the value of allowing birth to progress spontaneously. This means expanding the doctor's role

beyond that of just a surgeon, or of a practitioner who intervenes during labor with multiple medical interventions, to include that of a provider whose primary goal is for both mother and baby to be healthy and happy. Furthermore, since doctors stated that hospital infrastructure and bed space often facilitate the need for a medical intervention instead of actual medical necessity, birthing areas of hospitals need to be expanded to allow for more beds. It is recognized that the expansion of hospital space is expensive and difficult to implement, but especially in larger hospitals, it may be possible to creatively utilize the space that exists to allow for more beds.

Accompaniment During Labor

To transform the birth paradigm in Gran Asunción to represent a more positive experience, women need to be emotionally supported during labor. Currently, women in Gran Asunción are unaccompanied during labor and birth, which, according to women interviewed, dehumanizes the birth experience. Birth can shift from this dehumanizing experience to a more nurturing one by providing women with continuous care and social support during labor.[46, 51] Providing social support during labor means being continuously present and giving encouragement, offering feedback about how the labor is progressing, and practicing comfort measures, such as comforting touch and massage.[51] To improve the support that women receive during labor and birth, women should have the right to accompaniment during labor by a companion, who can be a family member or other loved one, in addition to receiving improved continuous care by medical professionals.

Support during labor is important because it impacts a woman's satisfaction with her birth, with well-supported women having more positive experiences of birth.[46, 69]

Providing women with social support during labor can also help to reduce the use of medical technologies during labor and increase the frequency of spontaneous vaginal birth.[46] However, despite these benefits, in Gran Asunción, it is prohibited in public hospitals for women to be accompanied by family members during labor. Many women stated that they desired to have someone with them, usually their partner or mother. While some doctors may be concerned about the presence of family members or partners during labor, having additional support for the women can actually make the doctor's role easier by reducing women's fears and increasing their comfort.

Currently, hospital infrastructure is a barrier that does not allow for the accompaniment of women by companions during labor because labor rooms consist of multiple beds, with little space and no privacy. These rooms can be restructured, with the use of screens or some other inexpensive alternative, to allow for increased privacy and the ability for family members to join women during their labors. In order to ensure the restructuring of hospital space and the altering of hospital regulations, a policy change must be made, similar to that in Uruguay in 2001, when Congress passed a law stating that women have the right to companionship during labor.[46, 49] In the process of creating policies to improve the birth experience for women, additional research should be performed, reaching out to women who utilize public hospitals in order to ensure that all of their needs are met.

Medical professionals also need to provide improved emotional support during labor. USAID published a report in 2010 defining the experience of disrespect and abuse in childbirth, which includes physical abuse, non-consented care, non-confidential care, non-dignified care, discrimination based on specific patient attributes, and abandonment

of care.[70] The case study of Teresa, in which she was abandoned and received non-dignified care is an example of abuse during childbirth. Many other women also discussed the non-dignified care in Gran Asunción, with lack of patience on the part of doctors and nurses and fear of being reprimanded during labor.

In order for labor care to be more dignified, the role of the medical staff needs to shift. The women described the role of the doctors, *obstetras*, and nurses as infrequently entering and leaving the labor room in order to perform a medical test, sometimes without even saying anything to the woman. The priority to assess a woman's medical condition without a focus on the woman's experience of suffering dehumanizes the woman and fails to allow space for the medical staff to provide women with emotional support during labor. This can be changed by placing a value on emotional support in doctor training and providing doctors with methods on how they can emotionally support women during labor.

The presence of a birth doula during labor and childbirth has also been shown to be a very successful intervention for improving the experience of vaginal birth and reducing the use of cesarean sections.[45-50] Birth doulas assist women by providing physical and emotional support during labor and birth, through the use of emotional counseling and natural ways to reduce physical pain (e.g. massage, heat therapy, suggestions for positions that could reduce pain during labor).[51] In Gran Asunción, the implementation of a doula program can occur by including a birth doula with each *guardia* shift. Hospitals should also implement doula training programs, using models created by organizations such as DONA International.[71]

The Red Cross Hospital may be a good place to pilot a doula program because the current structure and existence of continuous care during labor would allow for a simpler, more cost efficient implementation of the program. The Red Cross Hospital currently uses first year residents to provide continuous care to women during labor; however, these doctors are not providing doula services (massage, emotional support, use of non-pharmacological ways to reduce pain, etc.). Piloting a doula program in the Red Cross Hospital could involve teaching residents to provide doula services in addition to monitoring the woman's physical status during labor. While doulas traditionally have the sole role of providing emotional support during labor, this program would be useful because it would simultaneously train doctors on how to provide emotional care and allow for women to be supported during their births.

Consequences for unnecessary surgery

Doctors currently fear legal consequences when a cesarean section is not performed in the presence of a complication. Additional research needs to be performed on the impact that legal malpractice suits have on the practice of defensive medicine and the costs and use of malpractice insurance to protect doctors from litigation.

The practice of defensive medicine causes doctors to unnecessarily perform cesarean sections because there are no consequences to doctors for performing a cesarean section when it is not medically indicated. Doctors in both individual in-depth interviews and key informant interviews recommended the use of increased monitoring over doctors' decision-making about cesarean sections as a way to control doctors' actions and reduce the cesarean section rate. With a fear of malpractice, doctors make quick decisions based on the convenience of performing a cesarean section and not taking risks.

However, if doctors needed to report all surgeries performed to a chief doctor at the hospital, with potential for repercussions in cases where cesarean sections are performed unnecessarily, doctors may think twice before deciding to perform a cesarean section based on convenience.

The Private Sector

The experience of the increased cesarean section use in the public sector does not occur within a vacuum, but rather is impacted by the practices of the private sector as well. The experience of birth in the private sector as a baby-making business, where women can pay for cesarean sections if they choose and doctors recommend cesarean sections when actual medical indications are not present (e.g. if a woman is 30 years or older) creates a cesarean culture that extends to all women in Gran Asunción, including those who birth in the public hospitals.

In order to decrease the cesarean section rate in the private sector, there needs to be a reduction in the economic incentive for doctors who perform cesarean sections. There also needs to be an increased amount of childbirth education, including providing information on the benefits of vaginal birth among women who deliver in the private sector to reduce maternal preference for cesarean section. Furthermore, women in the private sector should also have access to birth doulas in order to improve the experience of vaginal birth and increase women's desire for vaginal birth.

Additional research

A more immediate step that can be taken prior to the implementation of any of the previously mentioned interventions is the conduction of additional research on birth in Gran Asunción. This study was the first of its kind in the region and additional research

could inform the potential for feasibility with the implementation of these interventions. Research needs to evaluate current hospital policies and practices and identify specific barriers in providing interventions to improve vaginal birth. Research should incorporate all levels of medical personnel, including prenatal doctors, *guardia* doctors, and *obstetras* in addition to policy makers at the hospital and government level. This will allow for an understanding of medical professionals' perceptions and potential concerns regarding the feasibility and sustainability of projects towards humanizing birth. Research should also include women in order to ensure that their needs and desires are being addressed and to increase the usefulness in any programs geared towards improving women's birth experiences.

Government advocacy

In order for real change to occur in Gran Asunción, members within the Ministry of Health (MINSA) need to fully support the shift to a more humanized birth experience. There is already some evidence in Asunción that a shift to humanized birth is supported, since one of the teaching hospitals trains doctors with a promotion of humanized birth.[xxix] However, the formation of a committee within the MINSA to support humanized birth would allow for greater advocacy and support of the issue. This group of medical professionals would be responsible for assisting with the conduction of additional research, evaluating the capacity of hospitals to make changes towards humanized birth, and increase support for humanized birth among policy makers and hospital directors.

[xxix] Information obtained from IDIs with obstetric gynecologists and one key informant interview

Tables

Table 1: Language spoken in the home in Gran Asunción compared to all of Paraguay[10]

	Paraguay	Gran Asunción
Spanish (%)	29	48.6
Guaraní[a] (%)	27	6.9
Jopará[b] (%)	40	44

[a]Guaraní is the local indigenous language. [b]Jopará is a combination of Spanish and Guaraní.

Table 2: Demographics of Cesarean Sections in Paraguay in 2008 and 2004[10, 11]

	Cesarean Sections in 2008 (%)	Cesarean Sections in 2004 (%)
Residence		
Urban	40.9	35.9
Rural	23.1	15.6
Education		
0-5 years	14.6	12.1
6 years	24.5	18.0
7-11 years	29.1	26.5
More than 12 years	52.7	53.4
Socioeconomic Status		
Low	16.5	11.9
Middle	38.2	28.0
High	60.4	52.6
Language		
Spanish	54.0	43.5
Guaraní	16.0	12.9
Jopará	35.3	31.8
Region		
Gran Asunción	46.0	40.7
North	18.3	12.0
Central South	32.0	23.4
East	28.1	26.4
Total	33.1	26.9

Table 3: Studies Analyzing the Maternal Outcomes of Cesarean Sections

Reference	*Design*	*Sample*	*Outcomes*	*Adjustment*	*Results*
Villar et al, Latin America, 2006[4]	WHO global survey on maternal and perinatal health; multistage stratified sample	97,095 deliveries to women who had vaginal births, and cesarean sections (elective, intrapartum, and emergency) at a health facility	maternal morbidity or mortality (defined as at least one of: maternal death, blood transfusion, hysterectomy, maternal admission at an ICU, or maternal hospital stay for longer than 7 days), postnatal treatment with antibiotics, or perineal laceration or postpartum fistula	proportion of primiparous women, previous cesarean delivery, gestational hypertension or pre-eclampsia or eclampsia, referral from other institution for pregnancy complications or delivery, breech or other non-cephalic fetal presentations, epidural during labor, complexity of index of institution and type of institution	**Regression coefficients and p-values:** Severe maternal morbidity and mortality: 0.321 (p=0.002), Postnatal treatment with antibiotics: 0.591 (p=0.004), Perineal laceration or postpartum fistula: 0.063 (0.4)
Kilsztajn et al, Sao Paolo, Brazil, 2007[6]	information obtained from birth certificates	1,140,789 deliveries (cesarean and vaginal) by women in a public hospital in Sao Paolo	maternal mortality	hypertension, other disorders, problems and complications, maternal age, according to the International statistical classification of disease and related health problems, 10th revision	There were 311 maternal deaths. Women who had cesareans were 3.3 times more likely to die than women who had vaginal births (95% CI: 2.6-4.3).

(*continued*)

Reference	*Design*	*Sample*	*Outcomes*	*Adjustment*	*Results*
Souza et al, Asia, Africa, and the Americas, 2010[18]	facility-based survey	290,619 deliveries to women who had vaginal births (spontaneous and operative) and cesareans (antepartum and intrapartum, with and without indications) in health facilities	severe maternal outcomes (includes death, admission to ICU, blood transfusion, or hysterectomy)	maternal age, years attended school, birth weight, neonatal death or stillbirth, prelabor rupture of membranes, pregnancy induced hypertension, preeclampsia, eclampsia or chronic hypertension, vaginal bleeding in the second half of pregnancy, antenatal antibiotic treatment, non-cephalic presentation, referred for complication related to pregnancy or delivery, induced labor, HIV positive, any other medical complication during pregnancy, country, and incentive for cesarean section	**Odds Ratios and 95% Confidence Intervals:** Operative vaginal delivery: 1.84 (1.62, 2.1), Antepartum cesarean without indication: 5.93 (3.88, 9.05), Intrapartum cesarean without indication: 14.29 (10.91, 18.72), Antepartum cesarean with indication: 13.28 (12.3, 14.34), Intrapartum cesarean with indication: 12.05 (11.33, 12.82)
Lumbiganon et al, Asia, 2010[7]	WHO global survey on maternal and perinatal health; stratified multistage cluster sample	109,101 deliveries to women who had vaginal births (spontaneous and operative) and cesareans (antepartum and intrapartum, with and without indications) at a health facility	maternal mortality or morbidity (defined as at least one of: maternal mortality, admission to ICU, blood transfusion, hysterectomy, or internal iliac artery ligation)	maternal age, year of education, primiparous, birth weight, history of neonatal death or stillbirth, HIV, chronic hypertension, cardiac/renal diseases, sickle-cell anemia, severe anemia, other medical disorders, prelabor rupture of membranes, pregnancy-induced hypertension, pre-eclampsia, eclampsia, vaginal bleeding in the second half of pregnancy, any antenatal antibiotic treatment, referred for complication related to pregnancy or delivery, and country	**Odds Ratios and 95% Confidence Intervals:** Operative vaginal delivery: 2.1 (1.7, 2.6), Antepartum cesarean without indication: 2.7 (1.4, 5.5), Antepartum cesarean with indication: 10.6 (9.3, 12.0), Intrapartum cesarean without indication: 14.2 (9.8, 20.7), Intrapartum cesarean with indication: 14.5 (13.2, 16.0)

Table 4: Studies Analyzing the Neonatal Outcomes of Cesarean Sections

Reference	*Design*	*Sample*	*Outcomes*	*Adjustment*	*Results*
Villar et al, Latin America, 2006[4]	WHO global survey on maternal and perinatal health; multistage stratified sample	97,095 deliveries to women who had vaginal births, and cesarean sections (elective, intrapartum, and emergency) at a health facility	fetal death, neonatal death, 7 or more days on neonatal intensive or special care unit, and preterm delivery	proportion of primiparous women, previous cesarean delivery, gestational hypertension or pre-eclampsia or eclampsia, referral from other institution for pregnancy complications or delivery, breech or other non-cephalic fetal presentations, and epidural during labor, complexity of index of institution and type of institution, preterm delivery (for all outcomes except preterm delivery)	**Regression coefficients and p-values:** Fetal death: 0.201 (p=0.002), Neonatal death: 0.089 (p=0.1), 7 or more days on neonatal intensive or special care unit: 0.157 (p=0.2), Preterm delivery: -0.009 (p=0.9)
Lumbiganon et al, Asia, 2010[7]	WHO global survey on maternal and perinatal health; stratified multistage cluster sample	109,101 deliveries to women who had vaginal births (spontaneous and operative) and cesareans (antepartum and intrapartum, with and without indications) at a health facility	perinatal mortality or morbidity (defined as the presence of perinatal death or a stay in the neonatal ICU for 7 days or longer)	year of education, birth weight, history of neonatal death or stillbirth, cesarean delivery, chronic hypertension, chronic respiratory disorders, diabetes mellitus, condyloma acuminatum, other medical disorders, prelabor rupture of membranes, pregnancy-induced hypertension, pre-eclampsia, eclampsia, suspected fetal growth impairment, vaginal bleeding in the second half of pregnancy, any antenatal antibiotic treatment, breech or other non-cephalic presentation, referred for complication related to pregnancy or delivery, country, and gestational age	**Odds Ratios and 95% Confidence Intervals:** Operative vaginal delivery: 1.9 (1.6, 2.3), Antepartum cesarean without indications: 0.4 (0.2, 0.9), Antepartum cesarean with indications: 1.9 (1.7, 2.2), Intrapartum cesarean without indication: 0.9 (0.4, 2.3), Intrapartum cesarean with indication: 2.1 (1.9, 2.3)

Table 5: Studies Examining Interventions for Reducing Cesarean Sections

Reference	*Design*	*Sample*	*Intervention*	*Outcome*	*Results*
Althabe et al, Latin America, 2004[12]	Randomized Controlled Trial	All physicians deciding a non-emergency cesarean section in 36 hospitals in Argentina, Brazil, Cuba, Guatemala, and Mexico that had a baseline cesarean rate of 15% or greater, had more than 1,000 deliveries, and were able to implement the protocol clinical guidelines	Mandatory second opinion policy for attending obstetrician. Control: Not having a mandatory second opinion policy	Overall cesarean section rate in the hospitals after a 6-month period	There was a small but significant reduction in the rate of cesarean sections. Mean difference in rate change between groups: -1.9, 95% CI: -3.8, -0.1; p=0.044. The intervention had a greater impact on intrapartum cesareans. Mean difference: -2.2, 95% CI: -4.3, -0.1, p=0.041.
Homer et al, Australia, 2001[44]	Randomized Controlled Trial	1,282 women who gave birth at a New South Wales public hospital, who arrived at the hospital for their first prenatal care at this hospital at less than 24 weeks gestation, lived in the designated catchment area, and had planned to deliver at the hospital. Women who had maternal disease, two previous cesareans, or a classical previous cesarean section were excluded from the study.	Community-based model of care, including antenatal care from a team of midwives at one of two community-based clinics, care during labor and birth by a team of on-call midwives (and an obstetrician when necessary), and postpartum care performed by the midwives either in the hospital or at home. Control: Standard care, defined as having midwives and doctors attend to women in the hospital for antenatal, birth, and postpartum care; low-risk women were generally seen by midwives.	Rate of cesarean section	After controlling for known contributing factors to cesarean sections, women in the community based group were less likely to have a cesarean section than women in the control group (OR: 0.6, 95% Confidence Interval: 0.4, 0.9).

Table 6: General demographics of women in Gran Asunción, Paraguay

	%	n
Language spoken in the home		
Guaraní	7.4	112
Spanish	47.4	714
Spanish and Guaraní	45.2	681
Highest Level of Education		
Primary or less	25.6	388
Secondary	46.9	712
Higher[a]	27.5	417
Age Group		
15-19	18.9	286
20-24	20.9	317
25-29	20.4	309
30-34	14.1	214
35-39	14.5	220
40-44	11.3	171

[a]Higher includes “superior education” and “teaching formation”

Table 7: Demographics for Prenatal Care in Gran Asunción, Paraguay

	%	n
Received any prenatal care	99.3	538
Quantity of Prenatal Care[a]		
Had the 1st prenatal visit in first 6 months	97.0	522
Had the 1st prenatal visit in first trimester	68.8	370
Had 4 or more visits	97.4	519
Had 1st visit in first 6 months and had 4+ visits	95.3	508
Had 1st visit in the first trimester and had 4+ visits	68.3	364
Location of prenatal care[a]		
Public/Ministry of Health Establishment	45.9	247
Social Security Hospital[b]	9.9	53
Private Hospital/Clinic/Doctor	27.0	145
Other[c]	17.3	93
Medical Professional Performed Prenatal Care[a, d]	100.0	532
Procedures during Prenatal Care[a]		
Took blood pressure	98.9	530
Tested urine	92.7	498
Had blood test	97.2	522
Measured the belly	98.0	525
Listened to the baby's heartbeat	97.8	523
Had an ultrasound	97.8	525
Received a tetanus shot	97.0	524
Received education during prenatal care[a]		
Nutrition	81.2	436
Complications/Danger signs	68.2	366
Where to go if there is a complication	75.4	405
Danger signs of newborn	56.8	305

[a]Among women who received any prenatal care [b]A social security hospital is a hospital that accepts insurance provided through the workplace [c]Other includes military or police hospital, CMI, Maternal and Infant Hospitals, the Red Cross, The Hospital Nacional, CEPEP, Other, and Argentina [d]Medical professional includes doctor, obstetric midwife, and nurse

Table 8: Birth demographics in Gran Asunción, Paraguay

	%	n
Mode of Delivery		
Vaginal Birth[a]	50.2	263
Cesarean Section	49.8	261
Location of Birth		
Public/Ministry of Health Establishment	44.2	232
Social Security Hospital	12.8	67
Private Hospital/Clinic/Doctor	23.2	122
Other[b]	19.8	104
Who Attended Birth[c]		
Doctor	77.5	404
Obstetric Nurse/Midwife	22.5	117
Birth Outcomes		
Premature[d]	14.2	77
Weighed 2kg or less[e, f]	23.3	125

[a]Includes both operative and spontaneous vaginal birth [b]Other includes military or police hospital, CMI, Maternal and Infant Hospitals, the Red Cross, The Hospital Nacional [c]Two births were performed by nurses who were not midwives [d]Total n=542 [e]Total n=537 [f]Weight was not available for less than 2.5kg

Table 9: Demographics of cesarean sections in Gran Asunción, Paraguay

	% Cesarean (n)	Total n
Language spoken in the home		
Guaraní	34.1 (15)	44
Spanish	59.1 (137)	232
Spanish and Guaraní	44.1 (108)	245
Highest Level of Education		
Primary or less	40.4 (55)	136
Secondary	48.7 (128)	236
Higher[a]	62.4 (78)	125
Age Group		
15-19	29.2 (7)	24
20-24	36.3 (41)	113
25-29	48.8 (78)	160
30-34	53.1 (51)	96
35-39	61.1 (55)	90
40-44	70.7 (29)	41
Location of Birth		
Public/Ministry of Health Establishment	39.2 (91)	232
Social Security Hospital	35.8 (24)	67
Private Hospital/Clinic/Doctor	74.4 (90)	121
Other[b]	53.9 (56)	104
Who Attended Birth		
Doctor	60.9 (246)	404
Obstetric Nurse/Midwife	12.8 (15)	117
Prenatal Care[c]		
Had 1st visit in 1st trimester with 4+ visits	55.5 (198)	357
Did not have 1st visit in 1st trimester with 4+ visits	37.5 (60)	160
Had more than 10 prenatal visits	58.8 (140)	238
Had 10 or less prenatal visits	42.3 (118)	279
Location of prenatal care[c]		
Public/Ministry of Health Establishment	39.4 (93)	236
IPS	37.7 (20)	53
Private Hospital/Clinic/Doctor	71.7 (104)	145
Other[d]	48.9 (43)	88
Total	49.8 (261)	524

[a]Higher includes "superior education" and "teaching formation" [b]Other includes military or police hospital, CMI, Maternal and Infant Hospitals, the Red Cross, The Hospital Nacional [c]Among women who received at least one prenatal care visit [d]Other includes military or police hospital, CMI, Maternal and Infant Hospitals, the Red Cross, The Hospital Nacional, CEPEP, Other, and Argentina

Table 10: Cesarean demographics by birth outcome

	% Cesarean (n)	Total n
Premature		
Not Premature	46.0 (206)	448
Premature	72.4 (55)	76
Weight[a]		
Weighed 2kg or less	53.7 (65)	121
Weighed more than 2kg	48.9 (195)	399

[a]Information was not available for weight less than 2.5kg

Table 11: Institute of Medicine's Rules for Health Care Redesign[60, 62, 63]

Care is based on continuous healing relationships.
Care is customized according to patient needs and values.
The patient is the source of control.
Knowledge is shared and information flows freely.
Decision-making is evidence-based.
Safety is a system property.
Transparency is necessary.
Needs are anticipated.
Waste is continuously decreased.
Cooperation among clinicians is a priority.

Appendix 1: IDI Guide for Women who had Vaginal Births (Spanish)

Primera Parte: El Embarazo

1. **¿Vos me podés hablar sobre tu embarazo reciente?**
    - Sentimientos
    - Controles Prenatales
    - Relación con personal médico
    - Apoyo de personas que no son profesionales médicos
    - Conocimiento del parto que tenía en el momento del embarazo
    - Toma de decisiones durante el embarazo
    - Toma de decisión sobre si el parto iba a ser por cesárea o normal
    - Sentimientos sobre la cesárea en el momento del embarazo

Segunda Parte: El Parto

2. **¿Vos podés contarme la historia de tu parto reciente?**
    - Detalles de lo que pasó
    - Sentimientos
    - Relación con personal médico
    - Apoyo de personas que no son personal médico
    - Tecnología médica que se usó
    - Complicaciones

Tercera Parte: El Puerperio

3. **¿Cómo era el periodo puerperio?**
    - Duración y dificultad de la recuperación
4. **¿Cómo es que tu parto impactó tu experiencia como una mamá?**
    - Habilidad para cuidar el bebe
    - Conexión con bebe
    - Sentimientos como mamá

Cuarta Parte: Final

5. **¿Cuáles son tus planes o esperanzas para partos en el futuro?**
    - ¿Más hijos?
    - Esperanzas por similares con los partos en el futuro
    - Esperanzas por cambios con los partos en el futuro

Antes de terminar, quiero preguntarte sobre…

6. **¿Cuáles recomendaciones tenés para mejorar la experiencia del parto en Gran Asunción?**
    - La necesidad de bajar el uso de la cesárea
    - Como bajar el uso de la cesárea

7. **¿Hay algo más que querés que los médicos en Gran Asunción sepan de la experiencia del parto?**

Appendix 2: IDI Guide for Women who had Vaginal Births (English)

Part One: Pregnancy

1. **Can you talk to me about your recent pregnancy?**
    - Feelings
    - Prenatal visits
    - Relatinship with medical personnel
    - Support recieved from people who are not medical professionals
    - Knowledge of birth during pregnancy
    - Decisions that needed to be made during pregnancy
    - Decision-making about having a vaginal birth or a cesarean section
    - Feelings about cesarean sections during pregnancy

Part Two: Birth

2. **Can you tell me the story of your recent birth?**
    - Details about what occurred
    - Feelings
    - Relationship with medical personnel
    - Support from people who are not medical professionals
    - Medical technology that was used
    - Complications

Part Three: Postpartum

3. **How was the postpartum period?**
    - Duration and difficulty of recuperation

4. **How did your birth experience impact your experience of motherhood?**
    - Ability to care for the baby
    - Connection with the baby
    - Feelings as a mother

Part Four: Conclusion

5. **What are your hopes and plans regarding births in the future?**
    - Do you want more children?
    - Similarities to recent birth that wish for in future births
    - Differences from recent birth that wish for in future births

Before we finish, I'm going to ask you about…

6. **What recommendations do you have in order to improve the birth experience in Gran Asunción?**
    - The need to reduce the use of cesarean sections
    - How to reduce the use of cesarean sections

7. **Is there anything more that you would like doctors in Gran Asunción to know about the experience of birth?**

Appendix 3: IDI Guide for Women who had Intrapartum Cesareans (Spanish)

Primera Parte: El Embarazo

1. **¿Vos me podés hablar sobre tu recién embarazo?**
    - Sentimientos
    - Controles Prenatales
    - Relación con personal médico
    - Apoyo de personas que no son profesionales médicos
    - Conocimiento del parto que tenía en el momento del parto
    - Toma de decisiones durante el embarazo
    - Sentimientos sobre la idea de tener una cesárea

Segunda Parte: El Parto

2. **¿Vos podés contarme la historia de tu parto?**
    - Detalles de lo que pasó
    - Sentimientos
    - Relación con personal médico
    - Apoyo de personas que no son personal médico
    - Tecnología médica que se usó (aparte de la cesárea)
    - **La toma de decisión de la cesárea
    - La experiencia de tener una cesárea

Tercera Parte: Puerperio

3. **¿Cómo era el periodo puerperio?**
    - Duración y dificultad de la recuperación

4. **¿Cómo es que tu parto impactó tu experiencia como una mamá?**
    - Habilidad para cuidar el bebe
    - Conexión con bebe
    - Sentimientos como mamá

Cuarta Parte: Final

5. **SI NO ES NULIPARA: ¿Cómo se compara tener una cesárea y un parto normal?**
    - Diferencias
    - Semejantes
    - Maneras como la cesárea era una experiencia más positiva
    - Maneras como la cesárea era una experiencia más negativa

6. **¿Cuáles son tus planes o esperanzas para partos en el futuro?**
    - ¿Más hijos?
    - Esperanzas por semejantes por partos en el futuro
    - Esperanzas por cambios por partos en el futuro

7. **¿Si tuvieras la opción para tener un parto normal en el futuro, querías tenerlo así?**
    - ¿Por qué si o por qué no?

Antes de terminar, quiero preguntarte sobre…

8. **¿Cuáles recomendaciones tenés para mejorar la experiencia del parto en Gran Asunción?**
    - La necesidad de bajar el uso de la cesárea
    - Como bajar el uso de la cesárea

9. **¿Hay algo más que querés que los médicos en Gran Asunción sepan de la experiencia del parto?**

Appendix 4: IDI Guide for Women who had Intrapartum Cesareans (English)

Part One: Pregnancy

1. **Can you talk to me about your recent pregnancy?**
    - Feelings
    - Prenatal Visits
    - Relationship with medical personnel
    - Support received from people who are not medical professionals
    - Knowledge of birth during pregnancy
    - Decisions that needed to be made during pregnancy
    - Decision-making about having a vaginal birth or cesarean section
    - Feelings about cesarean sections during pregnancy

Part Two: Birth

2. **Can you tell me the story of your recent birth?**
    - Details about what occurred
    - Feelings
    - Relationship with medical personnel
    - Support from people who are not medical professionals
    - Medical technology that was used (apart from the cesarean section)
    - **The decision to have a cesarean section
    - The experience of having a cesarean section

Part Three: Postpartum

3. **How was the postpartum period?**
    - Duration and difficulty of recuperation

4. **How did your birth experience impact your experience of motherhood?**
    - Ability to care for the baby
    - Connection with the baby
    - Feelings as a mother

Part Four: Conclusion

5. **IF NOT A FIRST-TIME MOTHER: How does having a cesarean section compare to having a vaginal birth?**
    - Differences
    - Similarities
    - Ways in which the cesarean section was a more positive experience
    - Ways in which the cesarean section was a more negative experience

6. **What are your hopes and plans regarding births in the future?**
    - Do you want more children?
    - Similarities to recent birth that wish for in future births
    - Differences from recent birth that wish for in future births

7. **If you had the option of having a vaginal birth in the future, would you?**
    - Why or why not?

Before we finish, I'm going to ask you about…

8. **What recommendations do you have in order to improve the birth experience in Gran Asunción?**
    - The need to reduce the use of cesarean sections
    - How to reduce the use of cesarean sections

9. **Is there anything more that you would like doctors in Gran Asunción to know about the experience of birth?**

Appendix 5: IDI Guide for Women who had Antepartum Cesareans (Spanish)

Primera Parte: El Embarazo

1. **¿Vos me podés hablar sobre tu recién embarazo?**
    - Sentimientos
    - Controles Prenatales
    - Relación con personal médico
    - Apoyo de personas que no son profesionales médicos
    - Conocimiento del parto que tenía en el momento del embarazo
    - Toma de decisiones durante el embarazo
    - **La toma de decisión de la cesárea durante el embarazo
    - **Sentimientos sobre la idea de tener una cesárea

Segunda Parte: El Parto

2. **¿Vos me podés hablar sobre la experiencia de tener una cesárea?**
    - Detalles de lo que pasó
    - Sentimientos
    - Relación con personal médico
    - Apoyo de personas que no son personal médico
    - Aspectos Positivos
    - Aspectos Negativos

Tercera Parte: Postparto

3. **¿Cómo era el periodo puerperio?**
    - Duración y dificultad de la recuperación

4. **Cómo es que tu parto impactó tu experiencia como una mamá?**
    - Habilidad para cuidar el bebe
    - Conexión con bebe
    - Sentimientos como mamá

Cuarta Parte: Final

5. **SI NO ES NULIPARA: ¿Cómo se compara tener una cesárea y un parto normal?**
    - Diferencias
    - Semejantes
    - Maneras como la cesárea era una experiencia más positiva
    - Maneras como la cesárea era una experiencia más negativa

6. **¿Cuáles son tus planes o esperanzas para partos en el futuro?**
    - ¿Más hijos?
    - Esperanzas por semejantes por partos en el futuro
    - Esperanzas por cambios por partos en el futuro

7. **¿Si tuvieras la opción para tener un parto normal en el futuro, querías tenerlo así?**
    - ¿Por qué si o por qué no?

Antes de terminar, quiero preguntarte sobre…

8. **¿Cuáles recomendaciones tenés para mejorar la experiencia del parto en Asunción?**
    - La necesidad de bajar el uso de la cesárea
    - Como bajar el uso de la cesárea

9. **¿Hay algo más que querés que los médicos en Asunción sepan de la experiencia del parto?**

Appendix 6: IDI Guide for Women who had Antepartum Cesareans (English)

Part One: Pregnancy

1. **Can you talk to me about your recent pregnancy?**
    - Feelings
    - Prenatal Visits
    - Relationship with medical personnel
    - Support received from people who are not medical professionals
    - Knowledge of birth during pregnancy
    - Decisions that needed to be made during pregnancy
    - **Decision-making process to have a cesarean section
    - **Feelings about the idea of having a cesarean section

Part Two: Birth

2. **Can you tell me the story of your recent birth?**
    - Details about what occurred
    - Feelings
    - Relationship with medical personnel
    - Support from people who are not medical professionals
    - Positive aspects
    - Negative aspects

Part Three: Postpartum

3. **How was the postpartum period?**
    - Duration and difficulty of recuperation

4. **How did your birth experience impact your experience of motherhood?**
    - Ability to care for the baby
    - Connection with the baby
    - Feelings as a mother

Part Four: Conclusion

5. **IF NOT A FIRST-TIME MOTHER: How does having a cesarean section compare to having a vaginal birth?**
    - Differences
    - Similarities
    - Ways in which the cesarean section was a more positive experience
    - Ways in which the cesarean section was a more negative experience

6. **What are your hopes and plans regarding births in the future?**
    - Do you want more children?
    - Similarities to recent birth that wish for in future births
    - Differences from recent birth that wish for in future births

7. **If you had the option of having a vaginal birth in the future, would you?**
    - Why or why not?

Before we finish, I'm going to ask you about…

8. **What recommendations do you have in order to improve the birth experience in Gran Asunción?**
    - The need to reduce the use of cesarean sections
    - How to reduce the use of cesarean sections

9. **Is there anything more that you would like doctors in Gran Asunción to know about the experience of birth?**

Appendix 7: IDI Guide for Obsetric Gyneologists (Spanish)

Primera Parte: Historia del médico

1. **¿Ud. puede decirme cómo decidió ser un ginecólogo obstétrico?**
    - Hace cuanto tiempo
    - Educación

2. **¿Puede contarme sobre su experiencia como un ginecólogo obstétrico?**
    - Donde trabaja
    - Horas del trabajo
    - Dificultades de trabajo en obstétricas

Segunda Parte: Experiencia con el parto

3. **Como un ginecólogo obstétrico, ¿Cuáles servicios ofrece usted para las mujeres?**
    - Controles prenatales
    - Educación del parto
    - Cuidado durante el parto
    - Cuidado durante el puerperio

4. **¿Cómo es su papel cuando ayuda una mujer durante un parto normal?**
    - Apoyo emocional
    - Disminuyendo del dolor
    - La progresión del trabajo del parto
    - Diferencias entre un parto normal y una cesárea

Tercera Parte: El Uso de Cesárea y Otras Intervenciones Médicas

5. **¿Cuales tipos de intervenciones medicas usa durante un parto normal?**
    - oxitocina, anestesia epidural, fórceps, episiotomía, etc.
    - ¿Por qué?
    - ¿Quién decide en cuales intervenciones de usar?
    - Manera como cambia el parto
    - Manera como cambia el papel del médico

6. **¿Cuán a menudo usted hace una cesárea?**
    - Comparación con partos normales
    - Comparación de cesáreas programadas y no programadas

7. **¿Por qué se hace cesáreas generalmente?**
    - Las circunstancias en el momento
    - Las circunstancias de las cesáreas programadas

8. **¿Hay algunas mujeres que piden cesáreas?**
    - Razones porque mujeres eligen la cesárea
    - Reacción del médico cuando mujer quiere una cesárea cuando no sea necesaria

9. **¿Cómo se compara hacer una cesárea y asistir con un parto normal**
    - Cambio en papel del médico
    - Aspectos positivos de hacer cesárea
    - Aspectos negativos de hacer cesárea
    - Comparación de la dificultad de cada uno

Cuarta Parte: Intervenciones Posibles

10. **¿Es posible para mujeres tener un parto normal si han tenido cesáreas anteriores?**
    - Ventajas de parto normal después de una cesárea anterior
    - Desventajas de parto normal después de una cesárea anterior

11. **¿Cuáles son sus pensamientos sobre la frecuencia del uso de la cesárea que pasa ahora en Gran Asunción?**
    - ¿Alta o baja?
    - Ventajas de bajar la frecuencia del uso de la cesárea
    - Desventajas de bajar la frecuencia del uso de la cesárea

12. **¿Cómo se puede disminuir la frecuencia del uso de la cesárea en Gran Asunción?**
    - Intervenciones prenatal
    - Intervenciones durante el parto

13. **¿Usted tiene algunas otras recomendaciones más generales para mejorar la experiencia de los ginecólogos obstétricos en Asunción?**

14. **¿Usted tiene algunas otras recomendaciones más generales para mejorar la experiencia del parto para las mujeres en Asunción?**

15. **¿Hay algo más que usted quiere decirme?**

Appendix 8: IDI Guide for Obsetric Gyneologists (English)

Part One: Doctor Hisotry

1. **Can you tell me how you decided to be an obstetric gynecologist?**
   - How long ago
   - Education

2. **Can you tell me about your experience as an obstetric gynecologist?**
   - Where work
   - Hours of work
   - Difficulties of working with obstetrics

Part Two: Experience with birth

3. **As an obstetric gynecologist, what services do you offer to women?**
   - Prenatal visits
   - Childbirth education
   - Care during birth
   - Postpartum care

4. **What is your role when you help a woman during a vaginal birth?**
   - Emotional support
   - Reducing pain
   - Progression of labor
   - Differences between vaginal birth and a cesarean section

Part Three: The Use of Cesarean Sections and Other Medical Interventions

5. **What type of medical interventions do you use during vaginal birth?**
   - Artificial oxytocin, epidural analgesia, forceps, episiotomy, etc.
   - Why?
   - Who decides which interventions to use?
   - How the use of interventions changes birth
   - How the use of interventions changes the doctor's role

6. **How often do you perform a cesarean section?**
   - Comparison with quantity of vaginal births
   - Comparison of programmed and non-programmed cesarean sections

7. **Why do you generally perform cesarean sections?**
   - The circumstances for intrapartum cesareans
   - The circumstances for programmed cesareans

8. **Are there some women who ask for cesarean sections?**
   - Reasons why women choose cesarean sections
   - Reaction that doctor has when the woman wants a cesarean section and the cesarean is not necessary

9. **How does assisting with a cesarean section compare to assisting with a vaginal birth?**
    - Change in doctor's role
    - Positive aspects of doing a cesarean section
    - Negative aspects of doing a cesarean section
    - Comparison of difficulty of each one

Part Four: Conclusion

10. **Is it possible for women to have a vaginal birth after a cesarean section?**
    - Advantages of vaginal birth after cesarean
    - Disadvantages of vaginal birth after cesarean

11. **What are your thoughts about the frequency of the use of cesarean sections that is occurring right now in Gran Asunción?**
    - High or low?
    - Advantages of lowering the use of cesarean sections
    - Disadvantages of lowering the use of cesarean sections

12. **How can the cesarean section rate in Gran Asunción be reduced?**
    - Prenatal interventions
    - Interventions during birth

13. **Do you have any general recommendations on how to improve the experience for obstetric gynecologists in Gran Asunción?**

14. **Do you have any general recommendations on how to improve the experience of birth for women in Gran Asunción?**

15. **Is there anything else that you would like to tell me?**

Appendix 9: Codes and Code Definitions

Name of Code	Code Definition
Inductive Codes	
Choice	This refers to the decision-making process for a c-section and whose choice it really is to have a c-section. This includes any preference that a woman or doctor has towards having a c-section or having a vaginal birth and reasons given as to why there is a preference for one or the other (e.g. preference based on medical indications, convenience, safety, fear, pain, impatience, etc.). This also includes any discussion of preference for or against a vaginal birth after cesarean. It includes any discussion that takes place between the woman and the doctor about whether the birth will be a cesarean section or a vaginal birth (also includes when women specifically ask for one or the other). This code is also meant to address the level of control that women feel that they should have in the decision-making process for a c-section, which means that the code includes all discussions of women who feel as though they can choose whether to have a c-section or vaginal birth based on their preference and all discussions of women who feel that a cesarean section is a medical emergency that should not be chosen simply because of preference.
Fear	When a woman or doctor discusses fear (or lack of fear) of a vaginal birth or of a cesarean section. This includes fear of pain or fear of some kind of medical complication that may put her life or the baby's life in danger. This also includes any other fears related to the pregnancy, birth, or postpartum experience and why the woman experiences fear (or does not experience fear). This includes all doctors' fears (e.g. fear of malpractice suits, fear of possible complications that can take place during a vaginal birth or a cesarean section). This also includes discussions that recommend using fear as a way to impact women's birth experiences (e.g. making women more afraid of cesarean sections as a recommendation to reduce the cesarean rate).
Support/ Treatment	This includes all discussions about support (or lack of support) received from the family, social network, or from any medical staff during the pregnancy, birth, and postpartum periods. This includes any discussion of accompaniment (or lack of accompaniment) during labor by family members, friends, doctors, nurses, etc. and any feelings of loneliness (or not feeling lonely) that resulted from being alone or being accompanied. This also includes all discussion of emotional treatment (or physical treatment that impacts emotional response, such as a doctor not being gentle) by medical staff and social network (whether positive or negative) and the impact that this had on the birth experience (e.g. doctor holding the woman's hand, doctors treating women as "humans,"

	experiences of neglect by medical staff, domestic violence during pregnancy, women stating that they liked or disliked doctor treatment).
Knowledge	This includes all discussion of knowledge that women have about pregnancy, birth, and early motherhood. This also includes discussions on any type of **information received/given (or not received/given) from doctors and other people in the woman's social network during pregnancy, birth, or the postpartum period** (e.g. what birth is like, how to care for yourself during pregnancy, how to take care of a newborn) and how this information impacted women's birth expectations and birth experience. This also includes any moment where a woman portrays that she had knowledge (or did not have knowledge) about anything during the prenatal, birth, and postpartum periods (e.g. knew that oxytocin was in her I.V., did not know what was in her I.V., knew that c-sections had longer recoveries, knew that length of a vaginal birth could vary between women). **To be included in this code, a woman does not need to directly state that she received information**, but discussion is included if the woman shows that she is clearly educated (or uneducated) about the topic by expressing knowledge (or lack of knowledge) or if she expresses that there was a piece of information that she desired to know.
Pain/Suffering	This includes any discussion of emotional suffering, physical pain or suffering, and pain management that took place during any part of the prenatal, birth, and postpartum stages. Emotional suffering includes all discussion of negative feelings.
Risks/ Complications	This includes any discussion of any complications that took place (both actual and perceived complications), any potential risk of complications, or a fear of complications for either the mother or the child during the prenatal, birth, and postpartum periods (e.g. miscarriage/death, premature loss of liquid or blood, premature birth, problems with anesthesia, not dilating, cord around neck, episiotomy not healing properly, meconium present in amniotic fluid) during the most recent pregnancy/birth or any previous pregnancies or births. This also includes any idea that birth is a risky experience. It includes a complication from a c-section (e.g. infection, wound not healing properly), but it does not include discussion of the difficulty of a standard recuperation from a c-section.

Consistency/ Contradictions	This includes any discussion of hospitals not having uniform protocol, women receiving contradicting information (either from doctors, from their social networks, or a combination of the two), and any disagreement between different players within the medical system (e.g. disagreement between prenatal doctors and guardia doctors on whether or not a cesarean section should take place). Women receiving contradicting information from doctors or social networks can mean that various doctors or members of the social networks provided differing information or the information that was provided contradicted with the reality of the situation (e.g. not being given accurate information about the health of the baby). This also includes any discussion of women seeing many doctors vs. seeing just one doctor and the way in which this impacted the prenatal, birth, and postpartum experiences.
Medicalized vs. Natural Birth	This code defines all discussion of birth as a normal/natural experience and discussions of birth as a medical experience. It includes all **discussion of hospital stays** (including discussion of the frequency and length of stays and necessary hospital visits for "controls") **and medical interventions or technology** (e.g. use of a sonogram, tests that were performed during the prenatal period, postponing birth, oxytocin use, use of an I.V., artificial rupture of amniotic sack, use of a cesarean, forceps, etc.). Discussion of medical interventions refers to any discussion when medical interventions are used (either appropriately or inappropriately) or when the interviewer asks if an intervention was used and the participant states that it was not. This code also includes all discussion regarding factors that determine whether a birth is more medicalized or natural, including discussion regarding: use of medical interventions, walking during labor vs. being in bed, positions during labor/birth, standing during labor/birth, home birth vs. hospital birth, and eating during labor. **This code does not include the discussion of cesarean use, but does include how perceptions of birth as either medical or natural impacts the decisions or preferences for a cesarean section or a vaginal birth.**
Health System	This code refers to the structural component of the health system. This code includes any discussion of **hospital policies** (e.g. protocol or lack of protocol on prenatal care, women having many doctors vs. women having just one doctor through the prenatal period, amount of time spent between doctor and patient, family members not allowed to be present during birth, women not allowed to stand during birth, breastfeeding policies, doctor payment, doctor hours, payment of services, functionality of private vs. public vs. insurance-based hospitals), **doctor training**, and the **physical environment** of the hospital (e.g. not enough beds, comfort of hospital beds) and the way in which these aspects

	of the health system impacts the way in which women interact with the health system, the care that a woman receives, and the way that a woman experiences her pregnancy, birth, and postpartum periods. This code includes when hospital standards or rules are mentioned, but does not include the simple mention of the hospital or the mention of doctor treatment (without the explicit discussion of hospital policy).
Money	This includes any discussion regarding costs of any services that may be needed in the prenatal, birth, and postpartum periods (including the costs of losing work) and feelings about the need to pay for any of these services. This includes any discussion about payment at the Red Cross, at private hospitals, use of IPS, or payment of services that are not provided free of charge in the public hospitals (e.g. having an incubator is not free). This also includes any discussion of resources (e.g. equipment or anything else that would cost money) that are available (or not available) at hospitals and the way in which the availability (or lack of availability) impacts quality of care. This also includes any discussion of the variation of experience that takes place when a woman pays for the services vs. when she does not (e.g. any discussion of what happens in private hospitals, what protocol exists in private hospitals regarding cesarean sections, quality of care in private hospitals). This also includes the reimbursement/salary that doctors receive for their work.
Malpractice	This code includes any discussion of malpractice suits, including fears of malpractice suits or any discussion of accusing a doctor of not appropriately doing their job. This also includes any discussion of the way in which malpractice drives the decision-making process about whether to perform a cesarean section or a vaginal birth.
Doctor Role	This includes any discussion of the description of the responsibilities of a guardia obgyn, a consultation doctor, nurse, or midwife during the prenatal period, during labor, during a vaginal birth, during a cesarean, and during the postpartum period. This code also includes discussion of the difficulties that guardia doctors and consultation doctors face, including long doctor hours and low payment. This code also includes any statement that refers to the doctor as being "all-knowing." Excludes discussion of malpractice or needing to deal with patients who are described as problematic because they want a cesarean section.
Deductive Codes	
Preparation	This includes any discussion of preparation for childbirth, especially any experience regarding prenatal care (experience with hospitals, interactions between women and doctors during pregnancy, use of ultrasounds, etc.) and decisions regarding when to go for prenatal care or when to go to the hospital during labor.

	This also includes any discussion of family planning and statements regarding the way in which the woman planned her experience of having a child or the way in which doctors try to help women plan their pregnancies (e.g. discussion of the child being wanted or not). This also includes any discussion about how prenatal care is performed, what kind of education is provided during care, and what types of analyses are performed.
Postpartum	This includes any discussion that took place about events during the postpartum period, including all discussions of physical and emotional recuperation, breastfeeding, and the experience of motherhood. This also includes any discussion of the impact that having a cesarean section or having a vaginal birth had on any of these events **or the expectations/knowledge of how the type of birth impacts postpartum recovery.**
Recommendations	This includes any discussion of recommendations to improve the birth experience for women, reduce the c-section rate, or improve the experience for doctors. This includes all instances when the woman or doctor was directly asked to provide recommendations, but also includes when women and doctors offered recommendations without being probed to do so.

References

1. Cyr RM. Myth of the ideal cesarean section rate: Commentary and historic perspective. *American Journal of Obstetrics and Gynecology.* 2006;194(4):932-936.
2. World Health Organization. Appropriate technology for birth. *Lancet.* 1985;2(8452):436-437.
3. Althabe F, Belizán JM. Caesarean section: the paradox. *Lancet* 2006: 1472-1473.
4. Villar J, Valladares E, Wojdyla D, et al. Caesarean delivery rates and pregnancy outcomes: the 2005 WHO global survey on maternal and perinatal health in Latin America. *Lancet.* 2006;367(9525):1819-1829.
5. Gibbons L, Beliz·n J, Lauer J, Betr·n A, Merialdi M, Althabe F. The global numbers and costs of additionally needed and unnecessary caesarean sections performed per year: overuse as a barrier to universal coverage. *World health report.* 2010.
6. Kilsztajn S, Carmo MSNd, Machado JLC, Lopes ES, Lima LZ. Caesarean sections and maternal mortality in Sao Paulo. *European Journal of Obstetrics & Gynecology and Reproductive Biology.* 2007;132(1):64-69.
7. Lumbiganon P, Laopaiboon M, G¸lmezoglu AM, et al. Method of delivery and pregnancy outcomes in Asia: the WHO global survey on maternal and perinatal health 2007-08. *The Lancet.* 2010;375(9713):490-499.
8. Pan American Health Organization, World Health Organization. Health in the Americas. 2002;1:176-178.
9. Saisto T, Halmesmaki E. Fear of childbirth: a neglected dilemma. *Acta Obstetricia et Gynecologica Scandinavica.* 2003;82(3):201-208.
10. El Centro Paraguayo de Estudios de Población. La Encuesta Nacional de Demografía y Salud Sexual y Reproductiva. 2008.
11. El Centro Paraguayo de Estudios de Población. La Encuesta Nacional de Demografía y Salud Sexual y Reproductiva. 2004.
12. Althabe F, Belizán JM, Villar J, et al. Mandatory second opinion to reduce rates of unnecessary caesarean sections in Latin America: a cluster randomised controlled trial. *The Lancet.* 2004;363(9425):1934-1940.
13. Finger C. Caesarean section rates skyrocket in Brazil. *Lancet.* 2003;362(9384):628-628.
14. Kasai KE, Nomura RMY, Benute GuRG, de Lucia MCS, Zugaib M. Women's opinions about mode of birth in Brazil: a qualitative study in a public teaching hospital. *Midwifery.* 2010;26(3):319-326.
15. Ruoti AM, Ruoti-García de Zúñiga M, Ruoti Cosp MA. *Aspectos Bio-Pisco-Sociales de la Cesárea en Adolescentes de Hospitales Públicos: Estudio Mulicéntrico.* Asunción, Paraguay: Universidad Nacional de Asunción-Instituto de Investigaciones en Ciencias de la Salud;2001.
16. MacDorman M, Menacker F, Declercq E. Cesarean birth in the United States: epidemiology, trends, and outcomes. *Clinics in perinatology.* 2008;35(2):293-307.
17. Pan American Health Organization. Salud en las Americas: Paraguay. 2007;2.
18. Souza J, Gulmezoglu A, Lumbiganon P, et al. Caesarean section without medical indications is associated with an increased risk of adverse short-term maternal outcomes: the 2004-2008 WHO Global Survey on Maternal and Perinatal Health. *BMC medicine.* 2010;8(1):71.

19. Lavender T, Hofmeyr G, Neilson J, Kingdom C, Gyte G. Caesarean section for non-medical reasons at term. *Cochrane Database of Systematic Reviews.* 2006.
20. Hannah ME, Hannah WJ, Hewson SA, Hodnett ED, Saigal S, Willan AR. Planned caesarean section versus planned vaginal birth for breech presentation at term: a randomised multicentre trial. *Lancet.* 2000;356(9239):1375.
21. Hofmeyr G, Hannah M. Planned caesarean section for term breech delivery (Review). *Cochrane Database Syst Rev.* 2001;1.
22. Kamath BD, Todd JK, Glazner JE, Lezotte D, Lynch AM. Neonatal Outcomes After Elective Cesarean Delivery. *Obstetrics & Gynecology.* 2009;113(6):1231-1238.
23. Tita ATN, Landon MB, Spong CY, et al. Timing of Elective Repeat Cesarean Delivery at Term and Neonatal Outcomes. *New England Journal of Medicine.* 2009;360(2):111-120.
24. Zanardo V, Simbi AK, Franzoi M, Soldá G, Salvadori A, Trevisanuto D. Neonatal respiratory morbidity risk and mode of delivery at term: influence of timing of elective caesarean delivery. *Acta Pædiatrica.* 2004;93(5):643-647.
25. Clement S. Psychological aspects of caesarean section. *Best Practice & Research Clinical Obstetrics & Gynaecology.* 2001;15(1):109-126.
26. Lee Y, D'Alton M. Cesarean Delivery on Maternal Request: the Impact on Mother and Newborn. *Clinics in perinatology.* 2008;35(3):505-518.
27. Rosen T. Placenta accreta and cesarean scar pregnancy: overlooked costs of the rising cesarean section rate. *Clinics in perinatology.* 2008;35(3):519-529.
28. Lydon-Rochelle M, Holt V, Easterling T, Martin D. Cesarean delivery and postpartum mortality among primiparas in Washington State, 1987-1996. *Obstetrics & Gynecology.* 2001;97(2):169.
29. Clark S, Belfort M, Dildy G, Herbst M, Meyers J, Hankins G. Maternal death in the 21st century: causes, prevention, and relationship to cesarean delivery. *American Journal of Obstetrics and Gynecology.* 2008.
30. Potter JE, Hopkins K, Faundes A, Perpetuo I. Women's Autonomy and Scheduled Cesarean Sections in Brazil: A Cautionary Tale. *Birth.* 2008;35(1):33-40.
31. Ronsmans C, Holtz S, Stanton C. Socioeconomic differentials in caesarean rates in developing countries: a retrospective analysis. *Lancet.* 2006;368(9546):1516-1523.
32. Al-Mufti R, McCarthy A, Fisk NM. Survey of obstetricians' personal preference and discretionary practice. *European Journal of Obstetrics & Gynecology and Reproductive Biology.* 1997;73(1):1-4.
33. McCourt C, Weaver J, Statham H, Beake S, Gamble J, Creedy DK. Elective Cesarean Section and Decision Making: A Critical Review of the Literature. *Birth.* 2007;34(1):65-79.
34. Melender RH-L. Experiences of Fears Associated with Pregnancy and Childbirth: A Study of 329 Pregnant Women. *Birth.* 2002;29(2):101-111.
35. Foster J, Burgos R, Tejada C, et al. A community-based participatory research approach to explore community perceptions of the quality of maternal-newborn health services in the Dominican Republic. *Midwifery.* 2010.
36. Gaskin IM. *Ina May's Guide to Childbirth*. New York: Bantam Dell; 2003.
37. Osis MJD, P·dua KS, Duarte GA, Souza TR, Fa¯ndes A. The opinion of Brazilian women regarding vaginal labor and cesarean section. *International Journal of Gynecology & Obstetrics.* 2001;75(Supplement 1):S59-S66.

38. Martin E. *The Woman in the Body: A Cultural Analysis of Reproduction*. Boston: Beacon Press; 1992.
39. Diniz SG, Chacham AS. 'The cut above' and 'the cut below': The abuse of caesareans and episiotomy in Sao Paulo, Brazil. *Reproductive Health Matters.* 2004;12(23):100-110.
40. Goer H. *The Thinking Woman's Guide to a Better Birth*. New York, NY: Berkley Publishing Group; 1999.
41. World Health Organization. *Care in Normal Birth: a practical guide.* Geneva1996.
42. Chaillet N, Dumont A. Evidence-Based Strategies for Reducing Cesarean Section Rates: A Meta-Analysis. *Birth.* 2007;34(1):53-64.
43. Foster J, Heath A. Midwifery and the development of nursing capacity in the Dominican Republic: Caring, clinical competence, and case management. *Journal of Midwifery & Women's Health.* 2007;52(5):499-504.
44. Homer CSE, Davis GK, Brodie PM, et al. Collaboration in maternity care: a randomised controlled trial comparing community-based continuity of care with standard hospital care. *BJOG: An International Journal of Obstetrics & Gynaecology.* 2001;108(1):16-22.
45. Campbell DA, Lake MF, Falk M, Backstrand JR. A Randomized Control Trial of Continuous Support in Labor by a Lay Doula. *Journal of Obstetric, Gynecologic, & Neonatal Nursing.* 2006;35(4):456-464.
46. Hodnett E, Gates S, Hofmeyr G, Sakala C, Weston J. Continuous support for women during childbirth. *Cochrane Database of Systematic Reviews.* 2011.
47. McGrath SK, Kennell JH. A Randomized Controlled Trial of Continuous Labor Support for Middle-Class Couples: Effect on Cesarean Delivery Rates. *Birth.* 2008;35(2):92-97.
48. Mottl-Santiago J, Walker C, Ewan J, Vragovic O, Winder S, Stubblefield P. A Hospital-Based Doula Program and Childbirth Outcomes in an Urban, Multicultural Setting. *Maternal and Child Health Journal.* 2008;12(3):372-377.
49. Pascali-Bonaro D, Kroeger M. Continuous female companionship during childbirth: a crucial resource in times of stress or calm. *Journal of Midwifery & Women's Health.* 2004;49(4, Supplement 1):19-27.
50. Trueba G, Contreras C, Velazco MT, Lara EG. Alternative Strategy to Decrease Cesarean Section: Support by Doulas During Labor. *Journal of Perinatal Education.* 2000;9(2):8.
51. Klaus MH, Kennel JH, Klaus PH. *The Doula Book: How a Trained Labor Companion Can Help You Have a Shorter, Easier, and Healthier Birth*. 2nd ed. Cambridge, MA: Da Capo Press; 2002.
52. Family Health International. Research Ethics Training Curriculum (in Spanish). 2001.
53. Charmaz K. *Constructing Grounded Theory: A Practicual Guide Through Qualitative Analysis*. Los Angeles: Sage; 2006.
54. World Health Organization. *WHO Antenatal Care Randomized Trial: Manual for the Implementation of the New Model.* Geneva2002.
55. World Health Organization. Antenatal Care. http://www.who.int/gho/mdg/maternal_health/situation_trends_antenatal_care/en/index.html
56. Davis-Floyd RE. *Birth as an American Rite of Passage, Second Edition*. Berkeley: University of California Press; 2003.
57. Ministerio de Salud. *Manual de Atención Personalizada con Enfoque Familiar en el Proceso Reproductivo.* C. Vital, Editor. Santiago, Chile 2007.

58. Consonni EB, Calderon IMP, Consonni M, De Conti MHS, Prevedel TTS, Rudge MVC. A multidisciplinary program of preparation for childbirth and motherhood: maternal anxiety and perinatal outcomes. *Reproductive Health.*7(1):28.
59. Carlson NS, Lowe NK. CenteringPregnancy: a new approach in prenatal care. *MCN: The American Journal of Maternal/Child Nursing.* 2006;31(4):218.
60. Rising SS, Kennedy HP, Klima CS. Redesigning prenatal care through CenteringPregnancy. *Journal of Midwifery & Women's Health.* 2004/10// 2004;49(5):398-404.
61. Ickovics JR, Kershaw TS, Westdahl C, et al. Group prenatal care and preterm birth weight: results from a matched cohort study at public clinics. *Obstetrics & Gynecology.* 2003;102(5, Part 1):1051.
62. Centering Healtchare Institute. 2009; http://www.centeringhealthcare.org/.
63. Institute of Medicine. *Crossing the Quality Chasm: A new health care system for the 21st century*. Washington, DC: National Academies Press; 2001.
64. Grady MA, Bloom KC. Pregnancy outcomes of adolescents enrolled in a CenteringPregnancy program. *Journal of Midwifery & Women's Health.* 2004/10// 2004;49(5):412-420.
65. Lamaze International: Promoting Natural, Safe, and Healthy Pregnancy, Birth, & Beyond. 2010; http://www.lamaze.org/.
66. American Academy of Husband-Coached Childbirth. The Bradley Method of Natural Childbirth. 2011; http://www.bradleybirth.com/.
67. Storton S. Step 4: Provides the Birthing Woman With Freedom of Movement to Walk, Move, Assume Positions of Her Choice. *Journal of Perinatal Education.* 2007;16:25S-27S.
68. Simkin PP, O'Hara M. Nonpharmacologic relief of pain during labor: Systematic reviews of five methods. *American Journal of Obstetrics and Gynecology.* 2002;186(5, Supplement 1):S131-S159.
69. Leslie MS, Storton S. Step 1: Offers All Birthing Mothers Unrestricted Access to Birth Companions, Labor Support, Professional Midwifery Care. *Journal of Perinatal Education.* 2007;16:10S-19S.
70. Bowser D, Hill K. *Exploring Evidence for Disprespect and Abuse in Facility-Based Childbirth: Report of a Landscape Analysis*: United States Agency for International Development Traction Project and Harvard School of Public Health University Research Co., LLC;2010.
71. DONA International. 2005; http://www.dona.org/.