Doula Decisions: A Mental Models Approach to Understanding Lack of Doula Use Despite the Benefits

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Abstract

Research Question: Despite the proven benefits of utilizing a doula, only 6% of United States women choose to have a doula present at birth. What explains this lack of doula utilization?

Methods: This research employed the mental models approach, an in-depth interviewing and analysis method deriving from decision science, to examine the decision making process of expectant mothers with regard to the use of doulas. The process included 5 interviews with experts including OBGYNs, midwifes, and doulas, and 11 interviews with pregnant women.

Analysis: A gap analysis compares the mental models of experts versus pregnant women.

Results: Pregnant women have difficulty predicting what labor will be like, and thus how much continuous labor support they will need and want (a hot cold empathy gap). They also lack essential knowledge about what a doula is and does. They report not receiving information about doulas from their health care providers, which contributes to this gap in knowledge and is interpreted as a signal that the provider does not support the choice to use a doula. Lastly, pregnant women anticipate potentially negative relationship consequences when they imagine using a doula—both with their health care provider as well as with their partner.

Conclusions/Implications: Health care providers can provide preliminary information about doulas to their patients via methods such as a poster or pamphlet. This would not only give pregnant women basic information on the benefits of doulas but also signal that they support the decision. Doula communications can better address women's knowledge needs and relationship fears by including information about their role in supporting both women and partners in the child birth experience.

Introduction

A doula is a person who provides emotional, physical, and informational support to women and their partners before, during and after the birth of a child. A doula's support is also extended to nurses, midwives, and OB/GYNs tasked to provide care to a laboring woman. Though doulas do not supplant the care these health care professionals provide, they are meant to enhance it.[1,2] Most doulas do not have any formal medical training and as such are not responsible for medical decision making or procedures. However, while it is not required or mandated by law, doulas often receive a training certification from organizations such as DONA International, where courses cover evidence-based information about the benefits of doula support, the history of birth, the significance of doula support to families, and practical hands-on techniques regarding positions that can facilitate labor and pain management.[3] For the purposes of this paper, the term "doula" is meant to refer exclusively to birth doulas—as described above—and not postpartum doulas, doulas who support the mother and infant in the first couple of weeks after birth for an hourly wage. [4]

Benefits of Birthing with a Doula

Recently, studies have evinced positive outcomes from doula usage. For example, having continuous labor support from a doula decreases rates of regional anesthesia (such as an epidural),[5] forceps or vacuum deliveries,[6,7] and cesareans.[5,8] Additionally, women who have continuous labor support report greater satisfaction with the birth process, higher Apgar scores, and shorter labors overall.[8,9]

Perhaps these results should not be surprising. What doulas provide is continuous labor support. Historically and cross culturally, continuous labor support (CLS)—defined as emotional support, comfort measures, information and advocacy throughout the duration of labor and delivery— has been a norm and a practice accepted as beneficial to laboring mothers. More recently, this practice has been evaluated. One randomized control trial conducted in Botswana examined the effects of female relative support in labor. This randomized control trial found that the continuous presence of a female relative during labor and delivery proved to be beneficial to labor outcomes, and was most effective when the laboring woman was familiar and comfortable with the relative, or support person.[8] In the United States, where the nurse-patient ratio is similar to Botswana (1:4),[10] this study suggests continuous labor support might be valuable even if it is difficult to obtain.

Scholars have put forth two reasons why CLS may decrease the rate of labor interventions: a) CLS increases the mother's feelings of competence and control, and b) CLS provides pain management techniques. Regarding the first factor, a mother's feelings of competence and control, labor and delivery in a modern United States hospital subjects women to unfamiliar personnel, lack of privacy, and high rates of intervention. These factors contribute to increased stress and vulnerability for the mother.[11] This increased stress, vulnerability, and unfamiliarity may contribute to feelings of incompetence and lack of control. Further, increased stress during labor has been high levels of the stress hormone epinephrine, which leads to decreased uterine contractility, longer labor and possibly abnormal fetal heart rate patterns and thus a lower Apgar score.[11,12] Stress is not only characterized by challenged physiological states but also the

resources one has available to cope with those states.[13] Giving women more resources during labor and delivery could have positive benefits on women's perception of the stress of labor. Thus, to the extent that continuous labor support informs, comforts and empowers the laborer, it can decrease stress and contribute to better outcomes.

Technically, CLS may decrease the rate of intervention during labor because it prevents a "cascade of interventions." Labor and birth interventions increase the likelihood of other interventions, or "co-interventions,"[14] thus, decreasing the rate of a single intervention affects the rate of related interventions.

Critically, some of the results cited above support the use of doulas specifically, and others support continuous labor support, disregarding from whom it comes. Even those studies, however, show that CLS is more effective from doulas. Partners, friends, and family can provide continuous labor support, and commonly do, but the strongest results are achieved when the continuous labor support is provided by someone *not part of the woman's family, social network, or employed by the hospital*.[11] This appears to be because: a) people already in a woman's social network, such as a partner or parent, have little experience and knowledge about labor and delivery and often require support themselves; and b) hospital employees such as a physician, midwife, or nurse, are responsible for simultaneously supporting multiple patients, managing technology and pharmaceuticals, and keeping records; this leaves them little time for continuous labor support.

It may not just be differences in available time that separates the effectiveness of doulas and hospital staff. Doulas may also offer unique services, as they utilize emotional support strategies distinct from that of a health care provider such as a labor and delivery nurse. A recent study revealed 9 key strategies, five of which were unique to doulas: mirroring, acceptance, reinforcing, reframing, debriefing. *Mirroring* is the practice in which a doula encourages the mother to focus on the present with less anxiety by calmly clarifying the present situation. *Acceptance* is the strategy by which doulas, either verbally or non verbally, fully accept the response of the mother or fully accept a present situation. This strategy again encourages the agency of the woman and further reinforces the fact that doulas are not decision makers in the birth, but instead provide support. *Reinforcing* is the strategy by which doulas make stronger something a mother is feeling or doing that further support and encourages the mother's agency and competency. *Reframing* is the strategy by which a doula shifts the mother's perceptive to a more positive outlook which both requires extensive experience in birth and provides the mother with an understanding of the situation that increases feelings of competency and decreases stress. The final strategy, *debriefing*, is employed generally after the birth or a significant labor decision is made to engage in active listening and further promote the mother's understanding of the experience. These five unique emotional support strategies employed by doulas are argued to contribute to a reduction a mother's stress levels during labor, as well as increased feeling of agency and competency for the mother.[15]

Doulas also differ from nurses in the level of intimacy they may have with the mother, and their explicit commitment to be there solely for the mother, as an advocate encouraging her agency, and for the entirety of labor.

In essence, then, though continuous labor support from nurses may prove beneficial to birth outcomes, doulas should be recognized for their distinct role on a birthing team because they are not limited by the same time constraints and they bring different support strategies to bear. This unique contribution holds even in the case of labors supported by partners. An early trial of labor support with partners present found that women received more support from their partners when they also had a doula; moreover, the partners themselves reported feeling more support.[16]

The connection between doulas and positive birthing outcomes is substantial.[17] However, despite these benefits, a national U.S. survey shows that only 6% of women use a doula during childbirth.[18] Why is this the case? Is it simply lack of knowledge? That same U.S. survey shows that 75% of women who did not receive care from a doula had heard about them. In fact, 27% of those who had not used a doula and understood their care indicated they would have liked to have had doula care.[18] Given the effectiveness of doulas and the fact that women appear to know about them, why are more women not choosing to use doulas in their labors?

Decision Theory and Hypotheses

The study of judgment and decision making uses three interrelated forms of research to better understand how individuals make judgments and decisions. The first is a normative analysis which uses a decision maker's values to determine an optimal decision. The second is a descriptive analysis which requires observation of actual behavior, judgments, and decision making. The third includes prescriptive interventions, based upon a contrast of the normative analyses and descriptive studies, to help individuals make more optimal decisions. These three forms of research are intricately interrelated and all contribute to effective decision policies.[19]

This paper utilizes these fundamental forms of research to understand a pregnant woman's decision to use a doula. Current research on the positive effects of having a doula inform the normative analysis, revealing that many more women could benefit from using a doula. To understand the attitudes, beliefs, and values that underpin actual behavior, descriptive research is needed. This study seeks to better understand the knowledge, attitudes, and beliefs of pregnant women when deciding whether or not to use a doula. Based on its findings, it then offers suggestions for communications interventions.

Insufficient Knowledge

One hypothesis explaining the underutilization of doulas in the United States is that pregnant women have insufficient knowledge about what a doula is and does, and what effects doulas have on the experience of labor and delivery. Though a recent survey of pregnant women revealed that 75% of women who did not receive care from a doula had heard about them, what *exactly* they knew about doulas was not investigated. It is reasonable to assume that a majority of women have exposure to the word "doula" in a childbirth context but could not accurately define a doula's role or explain the benefits of using a doula. Not having the knowledge of a doula's role or the benefits of a doula could be a significant variable influencing a woman's decision to use a doula and thus an explanation for the underutilization of doulas. It is thus important to investigate women's primary sources of information during pregnancy and what those sources reveal about doulas.

Present Bias and Optimism Bias

Present bias refers to the tendency of people to more heavily discount the distant rather than the immediate future.[20] Recent research demonstrates that present bias may have tremendous effects on health related behaviors and decisions,[21] whereby individuals choose small immediate rewards over long term health benefits. This could affect pregnant women's behavior and decision making during pregnancy if she weighed the time and money costs associated with finding a doula in the present more heavily than the benefits she anticipated receiving during birth. Optimism bias refers to the tendency of people to believe they are less at risk of experiencing a negative event than the average person.[22] Optimism bias, like present bias, may affect health care decision making especially when considered in the context of risk perception. This may be contributing to a woman's perception her risks in labor and delivery and thus affecting her decision to use a doula.

Hot-Cold Empathy Gaps

Different affective states have proven to tremendously influence decision making. "Hot" affective states are defined as those in which the decision maker is under the influence of visceral factors such as hunger, fear, or pain. "Cold" affective states capture the opposite of "hot" states in which a decision maker is not affectively aroused. Research has revealed that when in a "cold" state, individuals have difficulty imagining what a "hot" state would feel like and thus their decision making is hindered. Additionally, individuals in a "hot" state may make decisions not in line with the long term interests of the decision maker. The resulting "hot cold empathy gap" is influenced by present bias, optimism bias, and has been shown to have a neural basis.[23]

Many medical decisions are made when individuals are in a negative affective state, for example when in pain or after receiving bad news. Research has shown that when in these states people will underestimate the effect that their current state has on their decision making and overestimate the how long the current state will last. This hot-to-cold empathy gap results in individuals making suboptimal long term health decisions.[24] Dr. George Loewenstein, a behavioral economist at Carnegie Mellon University, suggests that since some decisions made in a "hot" state prove to not be in line with the long term interests of a patient, that a physician in a "cold" state may provide a more stable basis for decision making. Alternatively, the presence of the hot cold empathy gap may reveal an obligation for the physician to provide additional information and encourage more thoughtful and deliberate decision making.

Cold-to-hot empathy gaps occur when an individual must make a decision while in a "cold" state that concerns an individual's future "hot" state. Cold-to-hot empathy gaps have been proven to have negative consequences on medical decision making concerning adherence to drug regimens[25] as well as suggest explanation for drug use and exercise habits. A cold-to-hot empathy gap exists in the experience of labor and delivery as many decisions are made when a pregnant woman is in a cold state and has no concept of what the "hot" state will be like. A woman in a "cold" state, that is before she is in labor, may not feel that a doula would be necessary because her misconception of what the "hot" state, or labor and delivery, will be like. Underestimating the amount of emotional support she would need as well as misconceptions about how often nurses and physicians will be present could contribute to the underutilization of doulas. If true, it might indicate a need for health care providers to encourage doula usage in the prenatal stages.

Access to Doulas

Another variable that could be influencing a woman's decision to use a doula is access. A woman's access to a doula may be impacted by doula availability or the cost of a doula, which is highly dependent on location and years of experience. A doula may cost as much as $3500 in large cities like New York or Los Angeles,[26] but Pittsburgh doulas interviewed for this study estimated the cost of a local doula to be between $300 and $1500. Doulas are not currently covered by most insurance providers, meaning they are instead paid for out of pocket by expecting mothers. However, this might be changing: Oregon and Minnesota have implemented policies that allow doulas to be reimbursed via Medicaid.[27,28]

What women know about doulas, what their attitudes are towards them, and what access they have to them, remains unknown. This question becomes especially important given the demonstrated health benefits that accrue with doula usage, combined with the knowledge that most women have heard about doulas and many of those women express a desire to work with one. Unfortunately, the answer is not found in the scientific literature on prenatal decision making, which focuses mostly on abortions. This paper reveals why pregnant women choose the care providers that they do, and what decision making processes lead them to those decisions.

Methods:

The Mental Models Approach

This paper employs the mental models approach to the question of prenatal decision making about doulas. The mental models methodology uses an in-depth interview process, beginning with open-ended questions that ask about broad topics, and narrowing to more specific questions—down to the level of quantitative risk assessments to reveal the knowledge, attitudes and beliefs associated with a given subject matter.[29] These in-depth interviews reveal the perception of risks and benefits associated with various behavioral options while highlighting assumptions underpinning these beliefs.

The first step in the mental models approach is to create a normative, or *expert decision model* of prenatal decision making regarding doulas, drawn from the literature and in-depth interviews with experts (e.g., doulas, midwifes and doctors). This normative model is compared with a descriptive, or *lay decision model*, drawn from in-depth interviews with currently pregnant women. The comparison reveals "gaps" between the expert and lay understandings of the current usage of doulas, which are used to identify behavioral interventions that may enhance women's prenatal decision making. This method has been applied to numerous similar studies, including parents vaccination decisions[30] and adolescent sexual behavior.[31]

Constructing the Expert Model:

Five local experts in Pittsburgh were interviewed, in person, for one hour. The experts consisted of one OB/GYN, one midwife, one labor and delivery nurse, and two doulas. All experts interviewed were female and currently practicing in Pittsburgh, PA.

The in-depth interviews (IDIs) asked questions about the experience of childbirth, from clinician and maternal perspectives, including topics such as: what the different steps of labor typically look like (active labor, pushing, etc.), what kind of support or care women might need, descriptions of what a doula is and does, risks and possible complications associated with child birth, and opinions on communication interventions. Table 1 below shows a sample open ended question, including prompts to extract additional information without leading.

Table 1: *Sample questions from interview protocol.*

In your own words, can you outline what the onset of labor looks like, before a woman arrives at the hospital or birthing center?
Who, if anyone, might be with her or who should she call to be with her?
During this time, how is she feeling?
What kind of support or care does she need?
In your own words, what role can partners take in the birth?
On a scale from 1-10, 10 being most important, how important is it that the partner is closely involved in the birth?

See Appendices A and B for further detail.

Coding and Analysis. An integrated assessment was used to identify, quantify, and analyze complex relationships between decision inputs per research question.[32] The resulting model is an influence diagram[33,34] in which each node represents a variable and arrows or links between nodes represent relationships. It is important to note that these links are unidirectional and thus the model serves as a map directing variable inputs to the decision output.

Interviews were audio recorded and transcribed verbatim. Three research assistants from Carnegie Mellon University used Dedoose coding software to identify nodes and links. Each interview was coded by two research assistants independently; new codes were discussed and added according to consensus decisions by the team weekly. Each interview was then adjudicated by the primary investigator and each coder was offered a chance to revise their initial codes if necessary. Each interview went through at least two rounds of coding until a kappa score, measuring inter-rater reliability, of 0.8 was reached. Both the expert and lay model were drawn using LucidChart, an online diagramming software.

Constructing the Descriptive Model

The lay interview protocol (Appendix B) closely resembled the expert interview protocol, and questions had the same open ended structure as those of the expert interview. An example can be seen below in Table 2.

Table 2: *Sample background questions from lay interview protocol.*

Do you have one or more primary prenatal health care providers such as an OB GYN, midwife, family practitioner, doula etc.?
Why did you choose that/those option(s)?
How did you find them?
On a scale from 1-10, 10 being the highest rating, how would you rate your experience with your primary care provider so far? Why do you choose that rating?

First, women were asked about their expectations of the experience of birth. A comparison of women's expectations of the experience of labor and delivery to experts' accounts was expected to provide insight on gaps in knowledge that might influence a woman's decision to use a doula, or provide evidence of a hot cold empathy gap.

Women were then asked about their primary sources of information during pregnancy, and whether these sources contained any information about doulas. Then, women were asked to define a doula in their own words, and explain the difference between a doula and other kinds of prenatal health care providers. Women were asked how women in general access doulas as well as how they personally might go about looking for a doula. Additionally, questions probed stereotypes associated with doulas or the women who utilize them, and beliefs about conflicts that could occur between doulas and health care providers.

The next section concerned the current relationship between the woman and her primary prenatal health care provider. Women were asked about five aspects of the relationship: warmth, trust, competency, knowledge, and how individually tailored they found the advice they receive. Women were asked to rate each aspect of the relationship on a scale from 1 to 10 (10 being the highest). Each rating was followed by a prompt for an explanation of the rating chosen, and a rating of 1 to 10 for how important this aspect of the relationship was to the woman. Lastly,

women were asked if they felt this score would change if they used a doula. This section concluded with questions on how a doula may affect their partner's involvement in the birth.

The next section concerned risks and possible complications of child birth. Women were asked to list risks and complications of natural, vaginal birth, cesarean birth, and analgesics such as an epidural. They were then asked how dangerous they felt this risk was and how likely they believe this risk is to occur to them. Lastly, they were asked if this risk would be affected by a doula.

The last section of the interview concerned opinions on policy measures. Questions probed how much influence hospitals and large health networks have on women's prenatal health care decision making and how much they contribute to current usage of doulas. Women were also asked if they felt a pamphlet or poster would be an effective way to increase utilization.

Participant Recruitment. Participants were eligible if they were female, currently pregnant, and over the age of 18. They were recruited via a flyer that read: "Pregnant Women Needed for Research Study / Researchers at Carnegie Mellon University are conducting a study to investigate how pregnant women think about prenatal care providers / Participate in a one-hour interview to discuss your personal reflections and experiences around prenatal care." This flyer was posted on Craigslist and on Facebook groups designed for local mothers and mothers-to-be. This outreach strategy enabled recruitment of a diverse sample. This flyer can be found in Appendix C.

Participant Attributes. Eleven pregnant women, ages 23-40, were interviewed over the course of 6 weeks. This was the first child for eight women interviewed. Two of those eight had previously experienced miscarriages; two women interviewed had one other child and one woman interviewed had three other children. 9 women identified as white and 2 identified as African American. 5 reported themselves to be low-income, and 6 middle income. One woman participated in The Special Supplemental Nutrition Program for Women, Infants, and Children (WIC). Two women reported that their pregnancy was considered "high-risk." Two women planned to use a midwife and nine women interviewed planned to use an OB/GYN. No women in this sample planned a home birth; 9 women planned to deliver in the hospital.

Interview Procedure. One-hour interviews took place in a private conference room on Carnegie Mellon University's campus and were audio recorded. Each interview was transcribed verbatim within 48 hours of the interview. Participants were compensated $50 cash. All interview protocols were submitted and reviewed via Carnegie Mellon University's Internal Review Board, IRB. All participants provided written consent. In addition to the audio recording, the interviewer took handwritten notes during the interview.

Expert Model:

Figure 1 depicts the expert model of a woman's decision to use a doula. Below, I define the nodes and links.

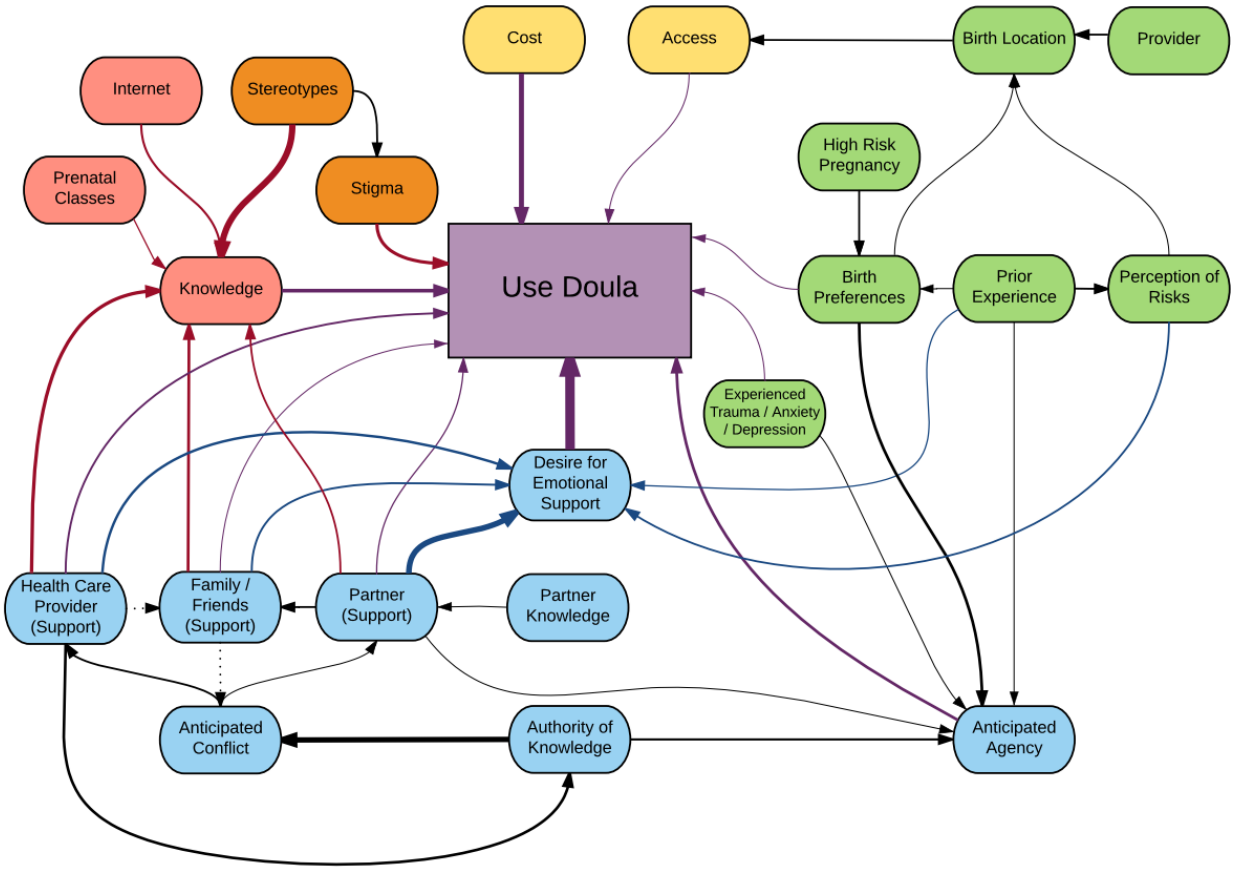

Figure 1: Expert Mental Model
The box "Use Doula" represents the decision point. Ovals are nodes which represent variables influencing this decision. Colored arrows correspond to the ending point of a unidirectional arrow. Dotted lines represent relationships the literature suggests but experts did not. Arrows linking nodes represent relationships between variables. Thickness of lines corresponds to the frequency with which that link was mentioned.

Knowledge

Beginning on the top right of the document, this node represents what knowledge pregnant women have about doulas. Local experts surmised that one of the main factors influencing a woman's decision to use a doula is the extent of her knowledge about what a doula is and does. This knowledge is influenced by prenatal resources such as prenatal classes, prenatal health books, and the Internet. Prenatal classes include any classes a pregnant woman would take concerning the birth of the child, infant care, or prenatal health; they may be recommended by their provider, friends, or found online. The childbirth educators that teach these classes may be nurses, midwives, or doulas. One doula mentioned that these childbirth educators often refer women to their own known networks of doulas.

Both local experts and the literature indicated that the Internet was the primary source women used to obtain information concerning prenatal care.[35] One OB/GYN interviewed said, "The internet is probably the number one way that women find doulas now." The Internet serves as both the first exposure to a woman's knowledge about doulas as well as the main resource women use to find more information about doulas. If one googles, "What is a doula?" the response page presents the following definition:

> "a woman who is trained to assist another woman during childbirth and who may provide support to the family after the baby is born."

Following that definition, the number one link result is the DONA website (Doulas of North America) which is, "the world's first, largest, and leading doula certification organization." Local doulas referred to this organization in interviews as the most common source of training for doulas. This google search reveals that a woman actively seeking more information on what a doula is and does could be successful with little effort.

Conversations with friends, family and prenatal care providers also contribute to a woman's knowledge about what a doula is and does. The node "health care provider," linking to the node "knowledge," indicates that a woman's health care provider has contributed to her knowledge about what a doula is or does. Experts predict that this is a main source of information for pregnant women. This information could be passed to the woman directly via a conversation during her prenatal visit or passively through materials such as a pamphlet or poster promoting doulas in the provider's office or exam room. One OB/GYN said that women "may be referred to doula services through their prenatal care provider." However, another interviewee, a doula, disagreed with this statement saying, "their doctors, I don't think, are telling them about [doulas]…there are doctors that don't even know this service exists." This disagreement made this link of particular interest to the study.

All experts interviewed suggested that friends and family contribute to a woman's knowledge about what a doula is or does, as well as give personal referrals to women who are seeking a doula. This is captured with the node "Friends / Family" linking to "Knowledge." One doula suggested that this may be "regionally or geographically" specific, but that in Pittsburgh, "there's definitely a lot of big word of mouth." Another doula mentioned that the majority of her business came from personal referral.

The node "Stereotypes" captures any stereotypes about doulas a woman has. This node links to "Knowledge," signifying that these stereotypes about *who doulas are* affect a woman's understanding of what a doula is or does. Stereotype formation is a consequence of the representative heuristic[36] and thus this node captures what experts and pregnant women said about "most doulas" as well as in response to specific "stereotypes associated with doulas." Stereotypes about doulas affect women's knowledge about what a doula is or does because these attributes or representations will come to mind first and thus will be overweighed in judgments.[37] Stereotypes about doulas may affect a woman's perception of their competency, as well as how the values of a doula may align with the values of the woman. Experts suggested that the main stereotype associated with doulas is that they are "hippy", "crunchy", or "new-age" people. One doula explained this stereotype to mean, "naturally minded or alternative healers." A labor and

delivery nurse suggested that doulas may be a part of the "yoga basket" which she explained to possibly include "people who eat kale" or prefer "crunchy" things. She continued:

> *"I think it's just really helpful to, like, open the basket. Like, toss the ingredients out, and remind people that there are crunchy things that are good. Kale is good. Granola is delicious on yogurt. And a birth doula can take a ton of the pressure off your whole family, and help you make it through any kind of delivery."*

Experts explained that this stereotype can lead to a belief that doulas are more inclined to encourage "natural" birth methods or be less supportive of mothers who prefer interventions. Another stereotype that experts suggested was that doulas were female. Experts overwhelmingly agreed that most if not all doulas are female, revealing that this is not only a common perception about a characteristic of a doula but a demographic fact. Little published demographic data exists concerning the gender, ethnicities, or socio-economic statuses of doulas in the United States. There is historical and anthropological evidence that most doulas are female. Ancient and modern cultures such in the Yucatan[38] reveal that doulas are and have been experienced women who assist with childbirth.[39]

A final stereotype experts suggested was that doulas were "white [and] middle class." In contrast, however, one doula said that in her experience, "community doulas tend to be more diverse whereas the private doulas are more white." Community doulas are those such as Birth Circle Doulas in Pittsburgh which are provided free of cost to women while private doulas are those which charge a fee for the service. Since there is no published data concerning the ethnicity, race, or socio-economic representation among doulas in the United States, it is difficult to gauge the accuracy of this belief.

The next node, "stigma," represents attributes associated with the women who use doulas or anticipated feelings of judgment of shame when choosing to use a doula. Consequently, this node captures main stereotypes associated with women who used doulas. Experts suggest there is crossover between the stereotypes associated with doulas and the women who use them. For instance, the predominant stereotype associated with women who use doulas is that they are "earthy" or "crunchy" and intend to have a "natural birth" with limited interventions. One doula suggested that this stereotype was false, however, because, "those super earthy crunchy people are having home births. They have their midwife, and they don't need a doula."

Another stereotype expert identify is that "upper class" women utilize doulas more than women from lower socio-economic statuses. One doula suggested this may come from the idea that a woman using a doula wants "more personalized assistant care." Unfortunately, little to no published data exists concerning demographic information about the women who use doulas.

Experts also suggested a possible stigma: that doulas are required for a high risk pregnancy. This would affect the decision to use a doula in that pregnant women who were not considered "high risk" would not seek out a doula because they did not think they qualified for the service. Conversely, some experts suggested that a common misconception is that doulas exclusively serve women with low risk pregnancies. This could have a similar effect on the decision to use a doula in that women whose pregnancies are considered high risk would not believe they were able to use a doula on that basis. Additionally, this belief that doulas are exclusively for "low-risk" pregnancies could contribute to the stereotype that women who use

doulas prefer fewer interventions. One OB/GYN noted that a high risk pregnancy is associated with more interventions, further indicating that a woman who knows she must have certain interventions due to the nature of her current pregnancy may feel she does not qualify for doula care.

Experts agreed that these common stereotypes about the women who use doulas may cause judgment or shame from the friends or family members of a woman considering a doula. Additionally, if a woman considers her pregnancy to be atypical for a doula based on these stereotypes, she may not think a doula would be of use.

Cost and Access

The node "cost" represents the anticipated cost of a doula's services. Experts suggested one significant factor in a woman's decision to use a doula if she feels she can afford it. One OB/GYN had heard women say they would like a doula but cannot afford it. She knew of some free doulas, but said that many women don't know if they qualify for these. Doulas revealed that there are many free and reduced price doulas who are either paid for by specific grants such as those at Birth Circle or who are currently in training. One doula said, "women think [doulas] are expensive and [that] they can't afford it." She continued to say that her group always tries to make it affordable. A labor and delivery nurse suggested that finding a free doula may be difficult and would require a more intense search. Women may not be aware of the possibility of a cost-reduced or free doula; having to search for these services would also contribute to the anticipated cost of a doula, affecting the decision to use one.

The node "access" represents the factors outside of cost that affect the accessibility of doulas. Experts were asked how easy it is to find a doula in Pittsburgh and the consensus was that it is very easy. This suggests that a woman seeking a doula in Pittsburgh should be able to locate one with ease.

Birth Location. The node "birth location" represents the location a woman has chosen to give birth in. This could be a hospital, a birthing center, or her home. This node links to "access" to represent the fact that a woman's chosen birth location may restrict doula usage. For instance, if a hospital has a policy whereby doulas are not allowed, this would restrict a woman's access to doulas. Experts suggested that this particular example was uncommon, but they noted other hospital policies—for example, limitations on how many people are allowed in the delivery room—that could influence doula usage. Doulas are often considered additional to a partner or other chosen support person, thus policies that prohibit more than one support person are seen as inhibitory to a woman's access to doulas. Lastly, experts noted that doulas are often perceived to be exclusively for home births. If a woman has chosen to birth in a birthing center or hospital, she may perceive her access to be limited.

Provider. A woman's choice of where to give birth is often dictated by factors out of her control, such as proximity to care centers, insurance coverage, and physician affiliation. This is captured by the node "provider" which links to "birth location" to indicate that the woman's provider has influenced where she chose to gave birth. This reveals that a woman may not have much choice as to where she gives birth and this could consequently affect her access to doulas.

High Risk Pregnancy. The National Institute of Health defines a high risk pregnancy as one that "threatens the health or life of the mother or her fetus." For the purposes of this paper, the node "high risk pregnancy" represents any pregnancy that has been classified or conceptualized as high risk by the pregnant woman. Some risk factors include: existing health conditions, overweight and obesity, multiple births (i.e. twins), or young or old maternal age. [40]

"High risk pregnancy" was linked to "birth location" to indicate that certain types of pregnancies require specific locations. One midwife interviewed said that high risk pregnancies she oversees must be delivered in a hospital and not the birthing center. This reveals that a woman may not have much control over the location in which she gives birth, which could affect her access to doulas.

Birth Preferences

The node "birth preferences" represents a woman's preferences for interventions during labor and delivery. These include (but are not limited to) the decision to have an epidural, to use forceps or vacuum delivery, to induce labor, and a planned cesarean. This node was intended to include what many childbirth professionals and pregnant women refer to as a "birth plan."

The node "high risk pregnancy" links to "birth preferences" as a high risk pregnancy may dictate which interventions will be necessary for a successful birth. For example, one OB/GYN discussed that a woman with a cardiac condition may require a vacuum delivery as to not strain her heart. This link is important as it reveals a woman's birth preferences may not entirely be in her control. The node "birth preferences" also directly links to the decision to use a doula. As one doula noted, some women might prefer a more private birth with a limited amount of people present; this preference would directly affect her decision to use a doula.

Anticipated Agency

The node "anticipated agency" represents a woman's anticipated ability to speak up for her labor and delivery preferences. This node is important as it captures a woman's anticipated ability maintain her position as the main decision maker. The United States emphasizes a patient centered model of health care in which a physician's role is as minimally paternalistic as possible.[41] This suggests that a pregnant woman should have as much agency as she desires and is freely able to make decisions concerning her care.

The node "birth preferences" links to the node "agency" to show that certain birth preferences may increase a woman's desire to have agency. The more atypical a woman perceives her birth preferences to be, the more she may feel she will need to advocate for them. One midwife interviewed said, "Our clients who use doulas generally have an idea of what they want their birth to look like…and they are looking to have someone be their advocate or their spokesperson"

The node "partner" links to "agency" indicating that there is an expectation that the partner will advocate on behalf of the woman's preferences. A partner can not only enhance a woman's anticipated agency by advocating for her wishes, but could also harm it if their preferences differ from the woman's or if there exists abuse of any kind.

The node "agency" links directly to the decision to use a doula because a desire for agency may be a woman's main reason for electing to use a doula. Experts agreed that one of a doula's main functions is to advocate on behalf of the woman. One doula said, "being a doula is about helping a woman achieve [her] ideal birth plan." She continued saying she has had women express things like, "I want an epidural when I walk in the door and I want you to help me get that." This doula acknowledged that this is not always possible but knowing a woman's preferences this explicitly is very important. An OB/GYN also stated that doulas help advocate for a woman's preferences as well as asking important questions relevant to their care. Another doula said that this was one of the best parts of her job and that, "when [women] are in a moment of pretty vulnerable space and [are] overwhelmed by a pretty intense medical system. [it is] "rewarding to empower them and advocate for what they want."

Trauma, Anxiety, or Depression

The node "experienced trauma / anxiety / depression" captures when a pregnant woman has experienced trauma or has a history of anxiety or depression that would affect her labor and delivery experience. One midwife discussed how the experience of labor and delivery may be a major trigger for a survivor of mental or sexual abuse. She said that she recommends a doula to any of her patients who are survivors or who have a history of anxiety or depression because she feels they contribute a significant benefit. In line with this, one doula reported that she serves as an advocate for her clients who are survivors who may be uncomfortable with a male physician or who are unfamiliar with the care team upon arrival to the hospital. This node links directly to the decision to use a doula as this may be a significant motivating factor for a woman to choose to have a doula. Additionally, this node links to "agency" as these experiences may lead a woman to desire more agency or ability to advocate for her preferences.

Prior Experience

The node "prior experience" captures any prior experience a pregnant woman has with labor and delivery. In most cases this refers to the previous births of the woman's other children, but also can refer to any births the woman was closely involved in such as the birth of a niece or nephew. This node links to the node "birth preferences" as a previous labor and delivery experience may directly affect a pregnant woman's birth preferences.

Perception of Risks

The node "perception of risks" represents a pregnant woman's perception of the risks involved with labor and delivery.

The node "prior experience" links to the node "perception of risks" indicating that prior experience has a direct effect on women's assessment and knowledge of birth risks. One

OB/GYN said, depending on if this is the woman's first experience with birth, she "could be quite scared and terrified of the unknown or even the known of what's coming." The node "perception of risks" links to the node "birth location" to indicate that how a woman views the possibility of complications could affect where she decides to give birth. One midwife said a few of her clients have told her that transferring from the birth center to the hospital would make them feel "safer." She continued to say:

> *"I think we have this move to birthing in a hospital because of the "danger" of birthing at home or in a birth center. But the reality is if you are a healthy woman, the danger is pretty low. Like, the negative outcomes are pretty low…Are there inherent risks of birthing in general? Well, yeah. That's why women died in childbirth years and years ago. …[But] for most women, things go alright because your body was made to do it."*

Emotional Support

The node "emotional support" represents a pregnancy woman's desire for and anticipation of needing emotional support during labor and delivery. Women require different forms of emotional support at different points in the labor and delivery experience. Each birth is different from the last and there is a wide range in the type of support or care a woman requires throughout this experience. One midwife said, "sometimes [a woman] needs one voice to focus... other times she needs a whole cheering section." Multiple doulas and an OB/GYN interviewed said that one way to support a woman emotionally during this time is to explain to her what is happening and reassure her of her safety. One doula emphasized the importance of what she called "normalizing support," that is, the reassurance that what the woman was experiencing was normal. One doula interviewed discussed that many of her clients need reassurance that what they are experiencing is "normal." Another doula said that "how comfortable and familiar [a woman] is with her body" will determine how stressful the labor is. Alleviating some of the woman's fears and uncertainties about the birthing experience is one way doulas provide emotional support to their clients.

The node "emotional support" links directly to the decision to use a doula as this may be one motivating factor in the decision to use a doula. Some women may realize their OB/GYN, midwife, or the labor and delivery nurses will not be present the entire time, and thus choose to have a doula for undivided and uninterrupted emotional support. One doula discussed that many of her clients need reassurance that what they are experiencing is "normal." Another doula said that "how comfortable and familiar [a woman] is with her body" will determine how stressful the labor is.

Affective Factors

The node "prior experience" links to the node "desire for emotional support" to represent that a woman's prior experience with birth may influence her anticipated need for emotional support. For instance, one doula explained that the need for emotional support, "depends a lot on whether it is [a] first baby or first labor," noting that these women require more emotional support. The node "perception of risks" links to the node "desire for emotional support" to represent the

relationship between how much a woman perceives the experience of labor and delivery to be risky and how much emotional support she anticipates needing. Experts suggested that the riskier a woman perceives birth to be, the more emotional support she would require.

Sources of Emotional Support

This model reveals four main expected sources of emotional support. The first is the "health care provider." This node represents whoever the woman has designated as her prenatal care provider and is often an OB/GYN or midwife but does not refer to a doula. One doula felt that many OB/GYNs are "lacking the verbal reassurance, the compassion, and the up to date research that doulas [push] for," suggested that many OB's cannot provide that. However, most non-doula experts in this sample took a different view. An OB/GYN reported that the amount of time she or a labor and delivery nurse can spend emotionally supporting a patient depends on how much support the woman is receiving from other sources such as her partner or family. She continued, "If I can be there, I really like being with women while they push… talking them through that process… giving them feedback and encouragement." This OB said that the reason she cannot be there for the whole labor and delivery experience and consequently cannot offer unlimited emotional support is because of the number of patients she sees and how limited her time with each patient is as a consequence. A labor and delivery nurse explained that her job is to "empower" women, noting the different ways she provides emotional support to laboring women, including by reviewing the medical terms and events that are repeatedly discussed during a labor such as percentage effaced and centimeters dilated.

Another source of emotional support represented in this model is "family and friends." Many women may choose to have their mother or another female family member present during their labor and delivery. Male family members are less common; as one labor and delivery nurse said, men "tend to trickle out as things get more intense."

A final source of support is the woman's "partner," usually the father of the child. Experts suggested that this is the main source of a woman's emotional support during labor and delivery. "If she has a really great partner," stated one, "she probably [does not] need a doula or chooses not to have one." This suggested when the primary emotional support person, in this case the partner, is sufficient, a doula is not necessary.

Authority of Knowledge

The node "authority of knowledge" is intended to capture the different power dynamics in a labor and delivery room. The node "health care provider" links to the node "authority of knowledge" to signify that a provider, in many cases the OB/GYN, possesses the locus of knowledge and experience and thus calls the shots during labor. The provider has discretion to share their knowledge as they see fit: Some do this effectively with patience and understanding, enabling women to make informed decisions and thus sharing decision power between the physician and the patient. In other cases, the locus of decision making is shifted away from the woman. This node is different from "anticipated agency" in that "anticipated agency" is the anticipated ability and desire to speak up for the laborer's preferences, while locus of

power/authority is what allows for such. A labor and delivery nurse gave a particularly illustrative example of this. She said:

> *"If we have some 17-year-old girl, and the doctor comes in and he's like…'If we just break your water, we can really get this moving.…I'm just going to break it.' He… puts his hand out for an amni hook……. there's no way we can instill that kind of terror in a woman [and] not address the fact that she might have a question about it, then proceed in taking away her agency and power. So, that's an important moment……for many nurses, and people who are interested in the agency of the patient. It's a 30 second conversation, but it's essential.'*

In this example the physician possesses power as he fully understands what it means to break a water, why it is necessary, and what the possible complications could be. If he does not attempt to explain it to the woman, it affects her agency; the locus of decision making is shifted away from her. This affects her agency and ability to speak up for her preferences. She cannot possibly speak up for preferences if she does not know what options she has. In this example, the nurse facilitates power sharing between the physician and the patient through a simple explanation of the situation. This allows the woman to voice her concerns ("Is it going to hurt?") and make a more informed decision. By sharing knowledge, the nurse empowers the woman and allows her to be a more informed decision maker. The node "power" thus links to "agency" to represent how the authority of knowledge may affect a woman's perceived or expected agency.

The node "authority of knowledge" links to "anticipated conflict" to represent ways in which the power dynamic—or attempts to shift it-- may cause conflict. The node "anticipated conflict" signifies any conflict between those involved in the woman's labor and delivery experience. In this model, we see that the authority of knowledge can be the source of conflict. One doula explained that physicians can kick doulas out of the room. When asked why this might occur she answered, "if [the doula] is fighting the doctor's decision." Another doula described what she called a "power and control issue" by saying, "[physicians] don't want other people involved… maybe [they] don't understand the role of a doula." One OB/GYN referenced this dynamic, saying she had had predominantly positive experiences with doulas, but she did have colleagues who had had negative experiences. These conflicts between doulas and physicians, she said, were the result of "[some doulas] trying to insert themselves into making healthcare decisions that they're not trained to make. So [they were] stepping out of their role." She continued to explain that a doula's primary role is to be an advocate: "Most of the time they're facilitators but sometimes they can be obstructive." A midwife made a similar statement, saying, "The hardest part [of a doula's job is] remembering what their role is in terms of comforting the family and making sure that they are their advocate, versus intervening on the medical side of things." The experts also acknowledged that a woman with a doula might ask more questions than a woman without a doula. This reveals one way in which a doula may encourage and empower a woman.

Additional Connections to Conflict

The node "anticipated conflict" also connects to "partner." Experts suggested that a woman may anticipate conflict between the doula and her husband, or even just tensions. One doula suggested that partners, "may not want to have somebody else there." The partner might say, "What am I going to do if there's a doula? Isn't that my job? Aren't they going to do the things that I would be doing?" which reveals an "insecurity."

The node "partner knowledge" represents what knowledge the partner has about the experience of labor and delivery as well as the different type of care and support a woman may need.

Sources of Support

The three nodes, "provider support," "friend / family support" and "partner support" each link directly to the decision to use a doula representing the relationship between each of these parties and their support of the woman's decision to use a doula.

Different provider types might be more or less likely to suggest and refer patients to use a doula. Both a doula and an OB/GYN thought that a midwife was more likely than an OB/GYN to recommend a doula to a soon-to-be mother. When asked why, the OB/GYN explained, "midwives have more time allotted to spend with each of their patients [and consequently] I feel like there's less education that happens with an OB than there is with a midwife."

A majority of the experts believed that one main source of encouragement to use a doula comes from friends who have previously used a doula and have had a positive experience. Doulas interviewed said much of their business comes from personal referral.

Experts only discussed partner support in the context of explicitly *not* supporting the use of a doula.

Descriptive Mental Model:

As expected, interviews with currently pregnant women revealed nodes and links not included in the expert mental model.

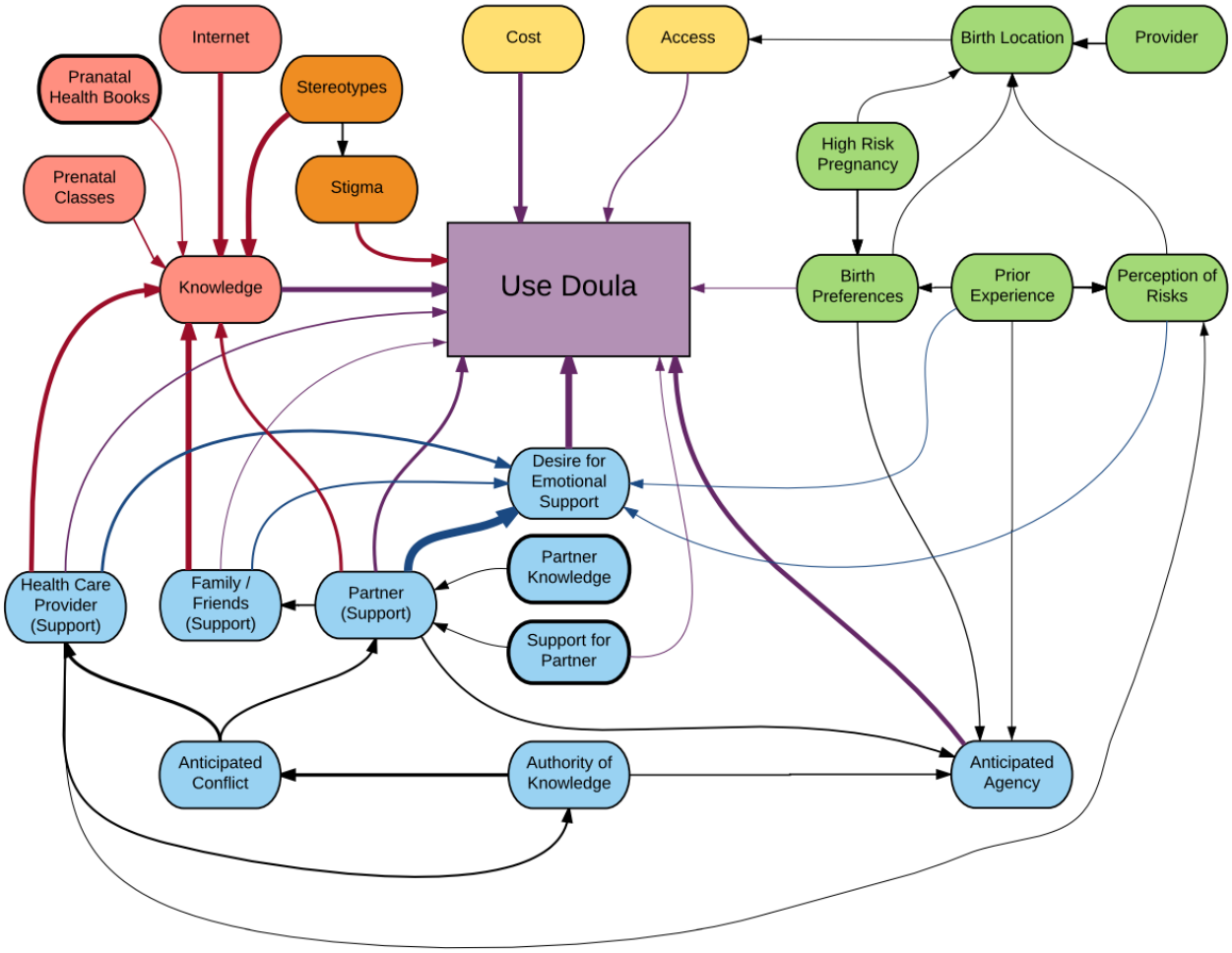

Figure 2: Descriptive Mental Model
The box "Use Doula" represents the decision point while ovals are nodes which represent variables influencing this decision. Colored arrows correspond to the ending point of a unidirectional arrow. Arrows linking nodes represent relationships between variables. Thickness of lines corresponds to frequency of relationships.

Birth Location

Three women interviewed stated that they will be delivering at the specific hospital their OB/OBs are affiliated with. Two women said they chose the hospital they will deliver at because it is where their insurance covers. One woman first chose to deliver at the hospital closest to her home and then selected an OB-GYN based on the fact that they delivered at that hospital. This is in line with what literature and experts predicted and thus reveals that often a woman's choice of where to give birth is largely dictated by external factors such as her

provider. However, no women interviewed indicated that the location they chose to birth in did not allow doulas nor did any experts interview indicate this is a common practice.

Expectation of the Experience of Child Birth

As stated before of the eleven pregnant women interview, eight had not given birth before. All participants were asked to outline three distinct periods of the labor and delivery experience: the time between the onset of labor but before arriving to the hospital/ birthing center, active labor in the hospital or birthing center, and when they begin to push. Women were asked who they expect to be with them or who they will call to be with them as well as how they predict they will be feeling and what support or care they will expect to need.

When asked about the onset of labor 4 women said they would feel excited while 5 women said they would feel anxious or nervous. 2 women answered that they were not sure and could not predict how they would feel. One woman explained her anticipated feelings, saying:

> *"I've never had to be in a hospital before. So the thought of being there and hooked up to things and having the situation be out of my control, per se, is a little frightening. But more so than that, the thought of in just a few hours, I'm going to have a human that I'm responsible for the next 18 years is, that's the exciting part, but also the scary part because it's a huge responsibility."*

All women said they would call their partner at the onset of labor to be with them and 3 women said they would additionally call a family member such as their mother or sister. When asked what kind of support or care she might need during the onset of labor before arriving at the hospital or birthing center, 6 women responded that they will need their partner to be present and calming. One woman said, "Just somebody who is calming, who has a clear plan, so that I don't have to think about anything."

Women were next asked to describe their expectations of active labor in the hospital or birthing center. Again, all women said that their partner would be in attendance during this time. When asked what medical care providers would be in attendance all women interviewed noted nurses and either their physician or midwife. 7 women noted that the nurse would be present more often than the physician or midwife during this time, while 3 women interviewed said they expected both the doctors and nurses to be frequently present. One woman predicted they would be in attendance, "Probably about every half an hour though the contractions." This reveals that a majority of women had reasonable expectations about how often their physician or midwife would be present. Additionally, when asked what support or care they might need, a majority of women interviewed revealed that their partner would be providing this and would be present during the entire duration of labor. However, one woman said, "that's a lot to put on one person, [laughs], to be that much support during labor," however she was not currently planning on using a doula or having any other family members present at her birth.

Women were asked how the care provider would know if something has gone wrong. A majority of women interviewed said the monitors will either tell the nurse (who will tell their physician) or the physician that something has gone wrong. An OB/GYN and labor and delivery nurse interviewed also gave this answer revealing that women have an accurate understanding of this.

When asked who would be present during the beginning of pushing and the duration of delivery, all women responded that their partner would be present along with their primary prenatal care provider. The majority of women interviewed said that they would be in pain during this time and that was the only feeling mentioned.

When asked these questions the main answer from experts was that each labor and delivery is unique and so what the experience looks like, what the women is feeling, and what kind of support or care she needs varies greatly. No woman interviewed suggested that this experience is highly variable and instead replied with relatively similar answers. A majority of women interviewed acknowledged that they would feel nervous, excited, and pain throughout the experience and that they would call their partner to support them during this time.

Relational Factors – Partner

When asked to rate on a scale from one to ten how important it was that their partner was closely involved in the birth ten of eleven women interviewed answered 10. A new node, "anticipated support for partner" was created to represent the support a partner may need during the labor and delivery. For many partners, the first labor and delivery can be overwhelming and stressful. Experts did mention this aspect of the birthing experience but did not discuss it as a factor that would influence a woman's decision to use a doula. Contrary to expert's analysis, women interviewed revealed that it was important that their partner felt supported during the birth and that the experience was pleasant. One woman interviewed who expressed interest in having a doula said, "[a doula] can help [my partner] relax. He could have someone to talk to during the delivery of my birth. If he has a question and he wants a real answer instead of just facts." This reveals that the knowledge of the supportive role doulas play for partners could motivate women to use doulas.

Another woman suggested that, "The doula could maybe answer [my partner's] questions while the doctor is trying to focus on me." Participants frequently mentioned their partners lack of knowledge about birth, noting that a coach for their partner might help relieve the pressure the partner was feeling.

"Anticipated support for partner" links to the node "partner support" to represent that this may be a factor influencing the partner's support for the woman's decision to use a doula. The partner may recognize they need support and ask for it. One woman even said that the decision to use a doula was now resting with her partner:

> *I think it would be mostly based on my husband. Whether he said he wanted the support or whether he said he didn't feel he would be able to provide adequate support. I don't want to put that pressure on him in any way, shape or form. So if he's telling me I need more support supporting you, or I need more support for you because I can't handle it, we'll get a doula.*

Another woman mentioned how previous experience was affecting her and her partner's decision to use a doula for their second baby, saying:

> *I talked to him about using a doula this time because they offer extra help that we may need. I want to make sure he has support too. Because the last pregnancy, he was nervous. He didn't know what to really expect.*

This node also links to the decision to use a doula, as the desire for partner support may be a direct influence in a woman's decision to use a doula. When asked how a doula may affect the involvement of her partner in the birth, one woman responded:

> *I think it would help him be more involved, more relaxed. And giving him tips to bond with the baby. Making him feel like he's more involved and it's not like it's just gonna be me and the baby. Including him more… This is something I want for him so maybe he can relax a little bit during this delivery.*

Another woman also commented on how a doula may affect her partner's involvement in the birth:

> *[A doula] takes a lot of pressure off of him… I think that [a doula] allows him to have his own kind of experience of his birth and not worry about me so much. [A doula will allow him to be] present in the moment.*

One woman interviewed said she took a birthing class that was taught by a doula and that affected her thinking about doulas and her partner:

> *I think that [a doula] would help him to be as involved as possible… the doula that we met was able to teach everyone in the room a couple different ways that he could apply pressure to my hips, or back, or something during a contraction that would help relieve pressure. And that's awesome!*

In general, interviews revealed that the anticipated relational consequences of having a doula significantly influence a woman's decision to use a doula. Even if her partner said he was comfortable with or supportive of a doula, women worried they might hurt their partner's feelings by making that choice. As one woman shared, *"He had said before, something like a joke, that he would be my doula. I think that he would take it [like] I didn't think that he would offer enough support to me so I had to bring somebody else in."*

If some women acknowledged that a doula may offer guidance to the partner, others asked: "If I had a doula, what would my partner do?" When asked how a doula may influence the involvement of their partner in the birth, these women foresaw a potentially negative effect. One woman was bothered by the fact that her partner "might back away." One woman who said she thought a doula would lessen the involvement of her partner said it was because a "[doula] would be an added distraction." Another woman said she worried a doula would "push [her] partner to the side and he would be less involved." This reveals a gap in knowledge of what a doula does, specifically that a doula can support a partner and encourage their involvement.

As expected, many women revealed that their partner may be supportive of the decision but they would need more information on what a doula is, does, and how much a doula costs. Interviews also revealed that a partner's knowledge about doulas could influence a woman's decision to use a doula. One woman discussed how her husband had a close friend who was a doula, making him "more open to it than [I] was, initially." Since financial decisions are made

together and doulas are a financial expense, women felt that their partners may need to be convinced that the cost of a doula was justified.

Women also felt it was important that the doula chosen was someone that was compatible with their partner. Women expressed that if they were to use a doula it must be someone their partner also liked and got along with. This revealed further relational consequences and how anticipated conflict between the partner and the doula would significantly influence a woman's decision to utilize a doula. Additionally, it suggests a barrier in that finding a doula that both the mother and partner liked could take additional time and research.

Compared to the anticipated conflict with the provider, the anticipated conflict between a woman's partner and her doula was more emotionally based. The women interviewed for this study did not fear their partner being angry or frustrated with the decision, but instead saw him hurt or upset.

Women were asked how a conversation with their partner about using a doula may go to which one woman responded, "*I think that he would say 'whatever you want to do but I'm really sad because I thought that I would be enough'*." Another woman used similar language saying, "*He might feel like he's not enough*," revealing that the doula may introduce or provoke an insecurity in women's partners. Another woman said her husband may feel "needy" and "pushed away," because a doula would do the things her husband thought he should do. Women also mentioned aside from their own feelings, their partners may feel overwhelmed by the number of people in the room. They felt an additional person may overwhelm their partner and that this influenced their decision to use a doula.

These statements reveal the necessity for education that can distinguish between the role of a doula and the role of a partner. Knowledge that a doula can contribute positively to a partner's knowledge of labor and delivery and enhance the partner's experience of labor would be a positive influence on a woman's decision to use a doula.

Evidence of the Hot Cold Empathy Gap

Women interviewed revealed that their partner would not only be their main source of emotional support, but that they were confident in his ability to do so (in this study, all partners were male). At times, they seemed to underestimate the amount of emotional support they would need during labor and delivery and overestimate their partner's ability to provide this support.

Partner to Emotional Support. Interviews with currently pregnant women revealed that women expected the majority of the emotional support they would need to come from their partners. Compared to interviews with experts, pregnant women asserted this connection much more frequently. Indeed, the more a woman expected her partner to support her, the less she felt the need to use a doula. Many women said that this was either the reason they were not using a doula or that they thought it was a main reason many women do not.

One woman who was planning on using a doula said, "[My partner's] not a great communicator, so that's why I'm really glad that my doula is there to speak for me. And I want

him to be there to, like, hold me," suggesting that the doula's ability to provide agency would be more important than her ability to provide emotional support. Many women revealed that they expected their partner to advocate for their preferences as well as provide emotional support, however doulas and other health care professionals suggested that this was a lot to ask of a partner, and could be overwhelming.

Anticipated Agency

Interviews with currently pregnant women revealed that the amount of agency a woman anticipated having was a significant influence on her decision to use a doula. This link appeared more frequently in interviews with women than with experts, indicating that a woman's anticipated agency might be more of a factor influencing her decision than experts had predicted. One woman discussed the importance of having someone advocate for you, saying, "*That is not going to be your husband or your birth partner. Not someone who is fatigued."* She continued: "*Having an advocate who has a relationship with you, but not a romantic relationship, [is important because] they can have that impartial kind of knowledge based decision making.*" When asked if receiving information about doulas from her current prenatal care provider would encourage her to use a doula, one woman reported that this would "*absolutely*" encourage her to use a doula, and that she, "*would not have felt like [using a doula] was such a combative thing to do*."

Relational Factors – Provider

When discussing conflict between the provider and doula this was quite antagonistic and implied the provider may have feelings of resentment or frustration towards the woman. One woman said that when she decided to use a doula her mother had a negative initial reaction, "*because she thought that I was not trusting of the doctor."* Another woman recalled a time that her physician reacted poorly to her choice to ask a pharmacist a question:

> *My doctor was like, 'No, you're supposed to call me! Don't go to somebody that's not as educated as I am and ask them and ask a question like that!'*

She continued saying that this was the main reason she was hesitant to bring up using a doula to her physician. Another woman discussed trust, saying, "*I have a very strong connection with my doctor. We've been through a lot. I don't want to do anything that would make him think that I don't trust him 100%. That I would want to bring in somebody else's opinion*."

The consequences of losing this trust can prove to be substantial. One woman shared:

> *I'm so afraid to question a decision because I don't want him to say well you told me this on this date, that you were going to give me 100% control over your care to make sure that everything goes the way it's supposed to go that's within my control, and now you want to change it… I'm afraid to lose this doctor.*

Women discussed the possibility of conflict between a doctor and a doula over medical decisions such as to use certain interventions. Many women brought up the idea that a doula is, "*extra opinions*" or "*might disagree with the doctor*."Another woman said, "*Most doctors don't want*

anybody else in their cookie jars." Another woman said a doula may interfere with a doctor's plan because*, "The doula is encouraging the mom to question things*."

When asked if there were ways to combat this, one woman suggested that physicians and doulas could work together more:

> *I think that if you know medical groups had a doula or a group of doulas that they worked with exclusively I think that would be amazing because then you would sort of have a lot of resources you would know immediately that you work well together… And you would there wouldn't be any of this. 'Oh no, is it going to make my doctor irritated if I bring a doula in?'*

Another woman agreed, saying, "*I would be really confident [in my decision to use a doula] if my team of doctors had a team of doulas or a couple on hand*."

Three women thought that a midwife and a doula are less likely to have conflict than an OB/GYN and a doula. One woman attributed this to the established relationship saying, "*the midwife center has worked with doulas in the past. And it sounds like it's been a pretty good relationship*." This indicates that the provider's support for the decision can be signaled to the woman in other ways besides the provider explicitly discussing doulas. A previous relationship with doulas or knowing the provider is affiliated with doulas may signal positively to women that their provider would support their decision to use a doula.

Women were also asked about five key aspects of their current relationship with their current prenatal health care provider: trust, knowledge, competency, warmth, and individually tailored advice.

Trust. Women gave an average rating of 9.05 for how much they trusted their current prenatal health care provider. They rated the importance of this trust a 10. 50 per cent of women interviewed said they felt a doula could increase how much they trusted their provider, while the other 50 per cent said a doula would have no affect on this score. One woman who rated her current trust of her OB/GYN to be a 9 said that this score could be a 10 if their OB was supportive of this decision, stating, "This is great, let's all work together Another woman currently using a doula said, "Actually, I think I have more trust in my OBs since having a doula because I don't expect my OBs to fulfill all of my needs."

Competency. Women rated health care provider competency a 9.6; they rated the importance of competency to be a 10. Only one woman said that a doula would increase how competent she found her midwife to be and she attributed this an increased level of communication that a doula brings. She explained that a doula could "facilitate conversation" that may lead everyone to be more "on the same page." The other nine women asked said they did not think a doula would affect this rating.

Knowledge. Women gave an average of 9.6 for how knowledgeable they found their current prenatal health care provider to be, and rated the importance of this to be a 10. One woman said she felt a doula could increase this score again because a doula could encourage more effective communication. Another said a doula could decrease how knowledgeable she found her OB to be because, *"[If] you're getting information from two sources [compared to]*

getting a single stream of information. If I had competing information that could change a perception." Another woman said if her OB was not aware of what a doula was that would make her feel the OB was less knowledgeable. The other seven women asked did not feel a doula would affect how knowledgeable they found their prenatal care provider to be.

Warmth. Women gave an average of 8.8 when asked how warm they find their current prenatal health care provider and rated the importance of warmth as 8.1. One who rated her provider's warmth as 9 said, "*I think it's important that it's a nine and not a 10, because you can't be all warm and fuzzy. Sometimes you need to say, 'Shut up and push!'"* Another woman who rated her OB's warmth as 7 said warmth was not as important to her because, *"[My OB] [sic] don't have to be like my dad or nothing. He's knowledgeable. He knows what he's doing. He's helpful. We don't have to hug."* Women who found their providers to be more warm also rated the importance of warmth higher, revealing that for women who prefer a warm experience, the choice in OB correlates. Only one woman said that a doula would increase how warm they found their provider to be and she again attributed this to increased communication.

Individually Tailored Advice. When asked how individually tailored they found advice from their current prenatal health provider to be, women gave an average rating of 6.8. Women rated the importance of individually tailored advice as 8. For women who rated the advice they receive as less than 5, they explained that this may be due to details of their pregnancy. One woman said, "*I think, because of my circumstances, being low risk…even though their answers are tailored towards my questions, and individual enough, a lot of it's based on a general knowledge of birth*." Another woman agreed saying, "*I mean I think all their advice in everything is start's more standard. And then it becomes tailored based on my questions*." This reveals that for some providers, a woman must ask more questions to receive more individually tailored advice.

Three women said they felt a doula would increase how individually tailored the advice they received was. These women explained this saying that a doula encourages communication and is, "sp*ecifically focused on you*" compared to a provider. Five women did not think a doula would change how individually tailored the advice they received was and two women were unsure of the effect a doula would have.

Overall it is clear that support from the provider is an essential factor in a woman's decision to use a doula. Some women hesitate to use a doula because they feel it will tarnish the relationship between them and their provider and this could have negative effects on their birthing experience.

Assessment of Risks

Since utilizing a doula has been shown to reduce rates of cesareans, analgesic use, and other interventions we wanted to assess how women were perceiving the risks associated with childbirth and if they felt a doula may affect these risks. Women were asked to list some of the risks associated with a vaginal delivery, a cesarean, and analgesics such as epidurals. Women were then asked if they believed a doula would change how likely, how dangerous, or anything else concerning the risks they listed. Local experts were asked these same questions.

Risk Perception

The tables below reflect women's responses to questions about risks associated with childbirth.

Table 3: *Pregnant Women's Reponses to "Risks of Natural, Vaginal Childbirth"*

"Baby gets injured on the way out"	"Bleeding"	"Length of Time" "Exhaustion"
"Tearing" "episiotomy"	"death of mother"	"Pain"
"Baby stops breathing"	"death of baby"	"Breach"
"Labor Not Progressing"	"cone head baby"	"Tangled Cord" "cord caught around baby's neck"
"Mother's blood pressure dropping"	"injury to other organs"	"stroke"

Table 4: *Pregnant Women's Reponses to "Risks of Cesarean Childbirth"*

"Recover is harder"	"Infection"*	"blood clots"
"cutting the baby"	"death of mother"	

*this was overwhelmingly the most common answer

Table 5: *Pregnant Women's Reponses to "Risks of Analgesics such as an Epidural"*

"can't feel natural urge to push"	"it wears off"	"baby could feel drowsy" "baby is groggy" "baby could come out a little on the drug side"
"paralysis"	"increases risk that you need a cesarean"	"slows baby's heart rate"
"decreases mother's breathing"	"severe headache"	"terrible back pain"
"you could be numb for several days" "prolonging labor"	"nerve damage"	"it doesn't take"

Perception of How Doulas Affect These Risks

Of the above mentioned risks women said doulas may decrease the risk of "labor not progressing", "tearing", "infection (cesarean)", and overall likelihood that a woman uses an "epidural" (but not affecting any risks inherent to an epidural).

Concerning how a doula may affect the progression of labor, the one woman who felt doulas could affect this risk said:

> *A doula would probably have some techniques [for example she would] firstly say 'hey, let's go for a walk. Let's try some squats. Let's try the birthing ball. Let's try this. Let's try that.' To to speed it back up or if it has slowed down to the point of almost stopping, getting it back going.*

Concerning how a doula may influence tearing, two women answered that a doula could decrease the likelihood that tearing occurs by offering ideas for new push positions or even just assisting the provider. One woman said, "*Sometimes extra hands with the hot towels are helpful*."

Concerning how a doula may decrease the risk of infection after a cesarean, one woman suggested that the doula would know how to properly care for the incision and that they would have more experience with the procedure. Only two women said that a doula would have an effect on this risk.

Several women mentioned a doula would decrease the likelihood of using an epidural. One women explained this by saying:

> *I think they just kind of help your body do what it's supposed to do. And I think, they can tell the position of the baby, the stage of labor I'm in, what position would be most helpful for me and baby to help baby start to move the way it needs to. And if it will be, like, a position that maybe would be like less painful. I don't even know if that's even possible though…*

Another woman agreed with this, saying, "I *guess my perception of a doula is that her role is to help identify good fits for pain management outside of medical or medicinal approaches.*" Four women believed a doula would decrease the likelihood of them using an epidural.

The majority of women interviewed did not think a doula could affect any of the risks associated with vaginal childbirth, cesarean, or analgesics. More importantly, women interviewed had difficulty naming more than three risks and often named events not commonly considered risks by health care professionals (i.e. "pain" or "exhaustion").

Another factor that may contribute to a pregnant woman's perception of her person labor risks is "perceived provider competency". Several participants shared that their confidence in their provider's ability to handle labor challenges minimized their risk, or made it seem less likely or as dangerous.

Cost

Experts mentioned cost as a factor affecting a woman's choice to use a doula only slightly more than the pregnant women interviewed. This slight decrease in the impact cost may have on the choice to use a doula could be linked to knowledge. Only two women felt confident that they knew how much a doula costs; nine women admitted to not knowing at all.

Women were also asked to give an estimate of how much they believe a doula costs as well as the maximum they personally would be willing to pay. Women estimated the cost of a doula to be $3000. Due to the small sample size, I report the median estimate here. Half of the sample estimated the cost of a doula relatively accurately, while the other half of the sample estimated the cost to be nearly 5 times actual cost. The median maximum women were willing to pay for a doula was $500. This not only reveals that women believed the cost of a doula was more than they were willing to pay, but also a gap in knowledge as the estimated cost of a doula was significantly inaccurate. The average cost of a doula in Pittsburgh varies, but on average a labor

doula costs $500 including prenatal visits and support throughout the entirety of labor and delivery.[42]

Most women said were unaware that free doulas existed. In Pittsburgh, a project called The Birth Circle provides free doulas to women with low cost UPMC for YOU. Only one woman explained that she was aware that free doulas existed and that she would find one through the WIC office. The only woman who was currently using a doula explained that her doula was still in training and thus was significantly cheaper. This is another option for women who find that they are unable to afford a doula but would still like to have one. In total four women interviewed (36.3%) had some knowledge of free or reduced cost doulas. Two of those four women had either contacted or planned to contact a doula.

Discussion:

Possible Interventions and Policy Measures

Currently pregnant women were asked how much influence hospitals and other large networks have on women's prenatal health care decision making. Women answered this question many different ways, but every woman interviewed revealed that hospitals and other large health networks have a significant amount of influence on women's prenatal health care decision making. When asked why she felt this way one woman said:

> *I think a lot of women just take what they say and just go with that.... So you need to really know what you're looking for and you need to really know that you might have another option besides what they're telling you. If you didn't know that then they're limiting what options, you have.*

Another woman had a very similar answer for why hospitals and other large health networks have a great influence on women's prenatal health care decision making. She said, "Unless you have information from somewhere else, when you show up you just do what they say..." The Listening to Mothers survey (2013) reports that 76% of first time mothers and 82% of experienced mothers cited maternity care providers to be a "very valuable" source of information most often. Additionally, the survey reports that 63% of mothers with primary cesareans indicated the doctor was the decision maker.[43] Physicians clearly have an immense amount of influence on not only a woman's prenatal health care decision making but also on what knowledge she has about the experience of labor and delivery.

This study asked women the following: "As it stands now, how much of a role do you think hospitals and other large health networks play in advocating for doula usage?" Only one of the 11 women interviewed responded positively, saying that they "*recently have turned more towards advocating for the doulas*." She explained that she thought this was the case, "*because of research studies that are showing benefits of doulas and more women have become aware of doulas, aware of what they do and they want that."* Eight other women interviewed (73%) disagreed and reported that in their view hospitals or other large health networks currently play no role in advocating for doula usage. One women explained: "The fact that insurance doesn't cover it is a pretty big indicator that they're not on team doula."

Another woman mentioned that her physician had not brought up doulas in any of her prenatal visits, so she did not know if he would support her choice to use one.

Lastly, women were asked if a pamphlet or poster with information about doulas would be a helpful way to increase utilization. 90% of women asked said that a pamphlet would be helpful and 40% of women thought a poster would be very helpful. The women who did not feel a poster would be helpful reported they felt a pamphlet was better because they could take it home to their partner or that they did not feel everyone read the posters. Every woman thought either a pamphlet or poster would be helpful.

One woman who thought both a poster and pamphlet would be helpful said so because she felt these resources give the patient the impression that, "*this is something my doctor's recommending. She is on team doula, she's pro-doula. You wouldn't feel like you were crossing*

some boundaries." Again, this shows that the anticipated conflict between a doula and a provider could be severely influencing a woman's decision to use a doula. Resources such as a pamphlet or poster in a provider's office could imply that this was a decision the physician was supportive of and would serve as an opportunity to pique a woman's interest in the option. One OB/GYN discussed that even though she agreed that a physician telling a woman about the work doulas do would be one of the most effective ways to increase utilization, her time with each patient was limited and thus she did not see such conversations as feasible. A pamphlet or poster in the physician's office or in the welcome packet many women reported getting could be a way to educate women on doulas and make a patient feel more comfortable asking her provider about using a doula.

Limitations

As noted above, only one OB/GYN was interviewed for this study. Since, many women interviewed for this study suggested that their OB/GYN would not be supportive of the decision to use a doula, more OB/GYNs, or a male OB/GYN, should be included in future studies.

Due to the labor intensive process of interviewing and coding as well as monetary constraints, only 11 current pregnant women were interviewed. Small sample sizes make it difficult to determine the reliability of generalizability of results. Using the findings from this study a survey could be developed to assess the attitudes, beliefs, and current knowledge of doulas of a larger, national sample of women.

Since this sample was limited to women in Pittsburgh, PA, its results should not necessarily be generalized beyond it. Other regions in the United States may produce different and novel results.

Minors were not considered for this study due to constraints on resources, but teen mothers are a population that could greatly benefit from doulas. Future research concerning adolescent mother's beliefs, attitudes, and knowledge of doulas may reveal new and important knowledge.

Future Directions

To further assess women's current knowledge and beliefs about doulas, a structured survey should be used. The findings of this study should inform the creation of such a survey. A survey may help guide the development of resources for specific populations and may inform whether different geographic regions would require different resources. Additionally, a sample poster or pamphlet could be used and assessed to test the effectiveness of this method of informing.

Conclusion

A gap in knowledge concerning what women know about doulas significantly contributes to the underutilization of doulas in the United States. Women need to know more accurate information about the cost of a doula as well as the benefits a doula could have on labor interventions. A hot cold empathy gap was shown to exist, resulting in women under-estimating the amount of emotional support they will need during labor and delivery and overestimating their partner's ability to provide this support.

Additionally, fear of the relational consequences of using a doula--both with their provider and with their partner--serves as a barrier to doula usage. Communication interventions are necessary to bridge this gap and supply pregnant women with adequate information on doulas. Passive communication techniques such as a poster or pamphlet containing information and facts about the benefits of doulas would not only inform women on what doulas do, but also signal to women that their provider was supportive of this decision. Providers are one of the women's main sources of information during pregnancy, thus they would be key sources of informational support.

Lastly, women lack information on the positive benefits a doula can have on their partner's experience. Both doulas and providers should provide this reassurance. Doulas should provide the specific information concerning how a doula may affect a partner's involvement as well as explaining how the emotional support they provide would be different compared to what a partner may provide.

Appendix A: Expert Interview Protocol

Interview Protocol

Doula Decisions: A Mental Models Approach to Understanding Lack of Doula Use

Thank you for joining me in this interview today. As mentioned in our phone/email correspondence I would like to talk to you about your perspectives on doulas in the United States.

Before we begin, let's walk through this consent form [give to participant to read].
Do you have any questions?
[Answer]
Next, I am going to ask if you give your consent to participate in this study. Before I do, I'd like to start taping our conversation so that I can take notes later. Is that ok?
[Answer]
Great.
[start recorder]
Do you consent to participate in this study?
[Answer]
Thank you. Let's begin.

I'd like to start today with a few brief questions about your experience with prenatal health and birth.

Knowledge

Let's start today by talking about some of the risks associated with childbirth, as well as the experience itself.

Experience of birth

Can you outline what the onset of labor to looks like before a woman arrives at the hospital or birthing center?

[Prompt] Who, if anyone, might be with her or who should she call to be with her?

During this time, how is she feeling?

What kind of support or care does she need?

Can you outline what the time between arriving to the hospital and when you begin to push will look like?

[Prompt] Who is or who should she call to be with her, if anyone?

What medical personal or care providers should be in attendance?

How long and often do you expect them to be present?

During this time, between arriving to the hospital and when she begins to push, how will you know when something goes wrong?

[Prompt] During this time, what kind of support or care does she need?

Can you outline what the experience of delivering specifically will be like (that is the time from when she starts pushing to when she delivers the baby)?

[Prompt] Who is in attendance?

What medical personal are in attendance?

During this time, what kind of support or care does the mother need?

What role should partners take in the birth?

On a scale from 1-10, 10 being most important, how important is it that the partner is closely involved in the birth?

Doulas

Now I'd like to talk briefly about a specific care provider called a doula.

Can you describe what a doula is?

What type of training do doulas have?

What types of things does a doula do before the birth? During the birth? after the birth?

What do you think are the hardest parts of a doula's job? The best?

What ways do women find doulas? Please list as many as you can.

On a scale from 1-10, 10 being the easiest, how easy is it for a woman to find a doula?

How much does a doula cost? Please give estimated range

Can you tell me the main difference between a midwife and a doula?

Can you tell me the main difference between a doula and an OB GYN?

What do you think the average woman knows about a doula, if anything?

[Prompt] Where do you think women get this information?

Do most women who use doulas have specific qualities?

[Prompt] Is there something about their pregnancy or birthing preferences that make them more inclined to use a doula?

Are most women who use doulas of any particular ethnicity, race, education, religion, or gender?

[Prompt] Can you think of any stereotypes that might be associated with women who use doulas?

Are most doulas a certain ethnicity, race, religion or gender?

[Prompt] Can you think of any other stereotypes that might be associated with doulas?

Do you find that, among healthcare providers, there are reasons one might not recommend a doula to a soon to be mother?

[Prompt] Does this differ by type of health care provider, e.g., OBGYN, midwife, PCP?

Do you find that there are institutional incentives in place--in some organizations-- either for or against recommendation of a doula?

[Prompt] In your opinion, do you think it is the responsibility of physicians to promote the usage of doulas?

Why or why not?

[Prompt] Do you feel that is the responsibility of pregnant women?

What challenges do OBGYNs face with patients utilizing a doula vs patients not utilizing a doula?
In your opinion, what are some reasons a woman would not utilize a doula (make a list)?
Do you think OBGYNs suggesting and referring patients to have a consultation with a doula would be an effective way to increase utilization?

[Prompt] Why or why not?

Can conflicts arise between a doula and an OBGYN? A doula and a midwife?

[Prompt] Why? Are there ways to prevent this? Or solutions?

[Prompt] What boundaries should be set to ensure things run smoothly?

Is there anything else you think is important for me to know concerning the current usage of doulas?

Risks

Great, now I'd like to discuss your perception of some of the risks involved in childbirth. Please again remember there are no correct answers I am looking for but instead am really interested in your experiences and personal perceptions.

What are some of the risks associated with natural birth? Try to list at least 5 if you can.

How dangerous are these risks? (scale of 1-10, 10 being most dangerous)

How likely are these to occur? (%)

Can you tell me what these risks would be with a doula present?

[Prompt]Can you explain why this is less/more/same?

Now I'm going to list a few specific risks (if not addressed before)
What are some of the risks associated with a cesarean?

How dangerous are these risks?

How likely are these to occur?

Can you tell me what these risks would be with a doula present?

[Prompt]Can you explain why this is less/more?

Many of the pregnant women we have spoken to have stated that needing a cesarean is their biggest concern or source of anxiety about the birth. Do you find this to be true among your patients?

[Prompt] Do you agree that this is what they should be most concerned with? Why or why not?

What are some of the risks associated with analgesics or pain medication such as an epidural?

How dangerous are these risks?

How likely are these to occur?

Can you tell me what these risks would be with a doula present?

[Prompt] Can you explain why this is less/more?

Many of the pregnant women we have spoken to have discussed using an epidural would make them feel less empowered. Do you find this to be true in your practice?

Opinion on Policy Measures

Lastly I'd like to end by asking your opinion on some ideas for policy measures or changes in communication that would increase the utilization of doulas.

How much influence do hospitals and large health networks have on women's prenatal decision making?

[Prompt] What role do you think hospitals and other large health networks play in advocating for doula usage?

If you gave your patients information about doulas in the form of a pamphlet do you think this would encourage them to use a doula?

[Prompt] Would you have any reservations doing this?

[Prompt] How about a poster to hang in your office?

Is there anything else you can think of that would encourage women to use a doula?

Is there anything else you think is important for me to know concerning the research question of this study?

End

I would like to thank you for volunteering to participate in this study. Your contribution to this project is greatly appreciated!

Do you have any further questions for me?

Appendix B: Lay Interview Protocol

Interview Protocol

Doula Decisions: A Mental Models Approach to Understanding Lack of Doula Use

Thank you for joining me in this interview today. As mentioned in our phone/email correspondence I would like to talk to you about your perspectives on doulas in the United States.

Before we begin, let's walk through this consent form [give to participant to read].

Do you have any questions?

[Answer]

Next, I am going to ask if you give your consent to participate in this study. Before I do, I'd like to start taping our conversation so that I can take notes later. Is that ok?

[Answer]

Great.

[start recorder]

Do you consent to participate in this study?

[Answer]

Thank you. Let's begin.

I'd like to start today with a few brief questions about your experience with pregnancy so far.

Background

How many months pregnant are you?

Is this your first child?

Do you have one or more primary prenatal health care provider such as an OB GYN, midwife, family practitioner, doula etc.?

[Prompt] Why did you choose that/those option(s)?

How did you find them?

On a scale from 1-10, 10 being the most, how would you rate your experience with your primary care provider so far?

Do you plan on using a doula?

Do you know where you would like to give birth?

Knowledge

Experience of birth

I want to talk a bit about your expectations of what your labor and delivery experience might be like. If there is an aspect of this experience, I ask about that you have not considered please do not worry; there are no correct answers to these questions!

First let's talk about the onset of labor, that is before you arrive at the hospital or birthing center.

Who, if anyone, might be with you or who will you call to be with you?

[Prompt] During this time, how do you predict you will be feeling?

[Prompt] What kind of support or care do you expect to need?

Now let's talk about the time between arriving to the hospital and when you begin to push.
Who might be with you or who will you call to be with you, if anyone?

[Prompt] What medical personal or care providers will be in attendance?

How long and often do you expect them to be present?

During this time, between arriving to the hospital and when you begin to push, how will the care provider know when something goes wrong?

[Prompt] During this time, how do you predict you will be feeling?

What kind of support or care do you expect to need?

Lastly let's talk about the experience of delivering specifically, that is the time from when you start pushing to when you deliver the baby.
Who might be with you?

[Prompt] What medical personal or care providers will be in attendance?

[Prompt] During this time, how do you predict you will be feeling?

[Prompt] What kind of support or care do you expect to need?

What role do you expect or prefer your partner to take in the birth?

On a scale from 1-10, 10 being most important, how important is it that your partner is closely involved in the birth?

What are your primary sources of information during your pregnancy?

[Prompt] Do you talk to family members such as your mother, aunt, or sister?

[Prompt] Do you talk to friends?

[Prompt] Do you talk to your primary prenatal health care provider?

[Prompt] Do you use books or other published literature concerning birth?

[Prompt] Do you use the internet to get information about prenatal health care?

[Prompt] how much/ how often

So far in any of these conversations with family members or friends have you discussed doulas?
So far in any reading you have done or internet searching have you come across information concerning doulas?

[Prompt] In your initial visit with your primary prenatal care provider, were you given any information about doulas?

Were you given resources for how to contact a doula?

Did you doctor/midwife suggest utilizing a doula?

Doulas

Now I'd like to talk more about the specific care provider called a doula.
Have you ever heard the word doula?

[Prompt] Where?

Can you describe what a doula is?

What type of training do doulas have?

What types of things do you think a doula does before the birth? During the birth? after the birth?
What do you think are the hardest parts of a doula's job? The best?
What ways do women find doulas? Please list as many as you can.
    On a scale from 1-10, 10 being the easiest, how easy is it for a woman to find a doula?
    How would you go about looking for a doula?
        [Prompt] Where would you look to find more information about doulas?
    How accessible do you think doulas are?
        Here in Pittsburgh?
        Across the nation?
Do you know how much a doula costs?
    [Prompt] Can you make an estimate?
    Do you think $300 is a reasonable amount to pay for a doula?
        How about $500?
        $1000?
    What is the most you would pay for a doula?

How did you learn about doulas or where did you hear about the work they do?
What do you think the average woman knows about a doula, if anything?
    [Prompt] Where do you think women get this information?
Can you tell me the difference between a midwife and a doula?
Can you tell me the difference between a doula and an OB GYN?

Do most women who use doulas have specific qualities?
    [Prompt] Is there something about their pregnancy or birthing preferences that make them more inclined to use a doula?
    [Prompt] Are most women who use doulas of any particular ethnicity, race, education, religion, or gender?
    Can you think of any stereotypes that might be associated with women who use doulas?
Are most doulas a certain ethnicity, race, religion or gender?
    [Prompt] Can you think of any other stereotypes that might be associated with doulas?

Do you find that, among healthcare providers, there are reasons one might not recommend a doula to a soon to be mother?
    [Prompt] Does this differ by type of health care provider, e.g., OBGYN, midwife, PCP?
    Do you find that there are institutional incentives in place--in some organizations-- either for or against recommendation of a doula?

In your opinion, do you think it is the responsibility of physicians and midwives to promote the usage of doulas?

[Prompt] Why or why not?

[Prompt] Do you feel that is the responsibility of pregnant women?

What challenges do OBGYNs face with patients utilizing a doula vs patients not utilizing a doula?

In your opinion, what are some reasons a woman would not utilize a doula (make a list)?
Do you think OBGYNs/midwives suggesting and referring patients to have a consultation with a doula would be an effective way to increase utilization?

[Prompt] Why or why not?

Can conflicts arise between a doula and an OBGYN? A doula and a midwife?

[Prompt] Why?

[Prompt] Are there ways to prevent this? Or solutions?

[Prompt] What boundaries should be set to ensure things run smoothly?

Relationships

Now I want to ask about your current experience and your relationship with your prenatal care provider.

I am going to ask you about different aspects of your relationship with your provider and for you to rank this on a scale of 1-10 (10 being the absolutely ideal). Again, please be reminded you can opt out of answering any question you don't feel comfortable with and we will move on. Also I would just like to remind you that this interview will be kept entirely confidential and your answers will not be associated with your name or contact information.

On a scale from 1-10, 10 being the most, how much do you trust your current prenatal care provider?

[Prompt] Can you tell me why you chose this number?

Do you feel that the above score would change if your patient utilized a doula? Why or why not?

On a scale from 1-10, 10 being the most, how important is it to you that you can trust your prenatal care provider?

On a scale from 1-10, 10 being the most, how competent do you find your prenatal care provider to be?

[Prompt] Can you tell me why you chose this number?

Do you feel that the above score would change if your patient utilized a doula?

Why or why not?

On a scale from 1-10, 10 being the most, how important is it that your prenatal care provider is competent?

On a scale from 1-10, 10 being the most, how knowledgeable do you find your prenatal care provider to be?

[Prompt] Can you tell me why you chose this number?

Do you feel that the above score would change if your patient utilized a doula?

Why or why not?

On a scale from 1-10, 10 being the most, how important is it that your prenatal care provider is knowledgeable?

On a scale from 1-10, 10 being the most, how warm do you find your prenatal care provider to be?

[Prompt] Can you tell me why you chose this number?

Do you feel that the above score would change if your patient utilized a doula?

Why or why not?

On a scale from 1-10, 10 being the most, how important is it to you that your prenatal care provider is warm?

On a scale from 1-10, 10 being the most individually tailored, how individually tailored do you find the advice from your current prenatal care provider to be?

[Prompt] Can you tell me why you chose this number?

Do you feel that the above score would change if you utilized a doula?

Why or why not?

On a scale from 1-10, 10 being the most, how important is it that the advice you receive from your prenatal care provider is individually tailored?

What does your partner know about doulas, if anything?

[Prompt] Where do you think they got this information?

[Prompt] Do you think your partner would be supportive of you using a doula?

Why or why not?

How would this conversation go?

[Prompt] Do you think your partner would be hesitant if you chose to use a doula?

Why or why not?

How do you think a doula would affect the involvement of your partner in the birth?
Do you believe that a doula could serve as an advocate for your personal birth preferences?

Risks

Great, now I'd like to discuss your perception of some of the risks and or complications involved in childbirth. Please again remember there are no correct answers I am looking for but instead am really interested in your experiences and personal perceptions.

What are some of the risks and/or possible complications associated with natural birth? Try to list at least 5 if you can.

- How dangerous are these risks? (scale of 1-10, 10 being most dangerous)
- How likely are these to occur? (%)
- Can you tell me what these risks would be with a doula present?
  - [Prompt] Can you explain why this is less/more/same?

Now I'm going to list a few specific risks (if not addressed before)

What are some of the risks associated with a cesarean?

- How dangerous are these risks?
- How likely are these to occur?
- Can you tell me what these risks would be with a doula present?
  - Can you explain why this is less/more?

What are some of the risks associated with analgesics or pain medication such as an epidural?

- How dangerous are these risks?
- How likely are these to occur?
- Can you tell me what these risks would be with a doula present?
  - Can you explain why this is less/more?

Opinion on Policy Measures

Lastly I'd like to end by asking your opinion on some ideas for policy measures or changes in communication that would increase the utilization of doulas.

How much influence do hospitals and large health networks have on women's prenatal decision making?

> [Prompt] What role do you think hospitals and other large health networks play in advocating for doula usage?

If you were given information about doulas from your current health care provider do you think this would encourage you to use a doula?

Is there anything else you can think of that would encourage you to use a doula?

Is there anything else you think is important for me to know concerning the research question of this study?

End

I would like to thank you for volunteering to participate in this study. Your contribution to this project is greatly appreciated!

Do you have any further questions for me?

Appendix C: Participant Recruitment Flyer

Pregnant Women Needed for Research Study

Researchers at Carnegie Mellon University are conducting a study to investigate how pregnant women think about prenatal care providers.

Pregnant women are needed for a one hour interview to discuss their personal reflections and experiences around prenatal care.

Compensation of $50 will be provided.
Participants must be at least 18 years of age.
Evening Appointments are available!

For more information call or email:
CMU Doula Study: cmudoulastudy@gmail.com
(412) 690-0403

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