INFORMATION, KINSHIP, AND COMMUNITY: PERCEPTIONS OF DOULA SUPPORT BY TEEN MOTHERS THROUGH AN EVOLUTIONARY LENS

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Title: INFORMATION, KINSHIP, AND COMMUNITY: PERCEPTIONS OF DOULA SUPPORT BY TEEN MOTHERS THROUGH AN EVOLUTIONARY LENS

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Human birth represents a complex interplay between our evolved biology and the cultural norms and expectations surrounding birth. This project considers both the evolutionary and cultural factors that impact the birth outcomes of teen mothers that received support from a trained labor support person, or doula. Doula support has repeatedly been found to decrease the length of labor, the use of pain medication, the rates of caesarian section, and instrumental births and to increase rates of breastfeeding and bonding. However, virtually no studies evaluate why these positive outcomes occur. Current life history models suggest that traits such as short inter-birth intervals, early weaning, extended dependency, and simultaneously raising multiple dependent offspring co-evolved with child-rearing support from multiple caregivers. These models suggest that mothers should be particularly sensitive to perceived cues of social and material

support for childrearing; doulas might provide such cues. The goal of this project was to explore how doula support impacted teen mothers' perceptions of their birth experience and outcomes. Data for the project were drawn from three sources: a 15-month participant observation at a non-profit organization providing doula support to teen mothers, 20 semi-structured interviews with mothers who received doula support for the birth of their babies, and by my attendance as a doula at over 50 births.

Results suggest that teen mothers experience upheavals in social relationships with their friends, families, and partners following the discovery of their pregnancy. Participants indicated that doula support increased their knowledge of the birth process, provided unbiased and non-judgmental support and information, gave them confidence in their ability to give birth, and encouraged mothers to be proactive in communicating with their care providers. Teens used friendship and kinship terms when describing their doula, suggesting that doula support provides cues of kinship that women have used throughout evolutionary history to assess the availability of alloparental care. While doulas themselves provide salient cues of social support, participants also indicated that doulas increased support from fathers and families, thus mobilizing support from existing social networks. Cues of adequate support may lead to increased maternal investment, thereby improving both maternal and fetal outcomes.

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CHAPTER I

INTRODUCTION

Project Overview

This dissertation focuses on the experiences of teen mothers who gave birth with the support of a trained labor support person, or doula. Teen mothers face a unique set of social and health challenges when they become parents, including the stress of completing their own physical and emotional development while simultaneously meeting the needs of their child (Furstenburg, 2007; Hans, 2005; Wen, Korfmacher, Hans &, Henson, 2010). Due to these social and health challenges, teen pregnancy is associated with increased health risks for both the mother and the baby (Furstenburg, 2007; Stevens-Simon, 2002). Doula support has been found to mitigate a number of the social risk factors associated with teen pregnancy and birth. The support of a doula reduces length of labor and the use of pain medication and reduces pre and postnatal complications, and rates of caesarian sections (Sosa, Kennell, Klaus, Robertson, & Urriutia, 1980; Kennell, Klaus, McGrath, Robertson, & Hinkley, 1991; Klaus, Kennell, Robertson, & Sosa, 1986). Doula support also facilitates mother infant bonding and breastfeeding (Hofmeyer, Nikodem, Wolman, Chalmers, & Kramer, 1991; Martin, Landry, Steelman, Kennell, McGrath, 1998), is associated with more positive feelings surrounding the birth experience (Langer, Campero, Garcia, & Reynoso, 1998) and may reduce rates of

postpartum depression (Wolman, Chalmers, Hofmeyr, & Nicodem, 1993). Although many studies document the benefits of doula support, almost none address *why* doula support positively affects birth outcomes. The goal of this project was to gain insight into teen mothers' perceptions of how working with a doula impacted their birth outcomes and experiences.

Theoretical Orientation

Humans show a number of distinct life history traits, including a long period of juvenile dependency, high levels of support to juveniles and between adults, and high investments in complex cognitive abilities and an associated large brain. These factors are proposed to have co-evolved with a distinctive pattern of human birth and childcare (Flinn, Geary, & Ward, 2005; Kaplan, Hill, Lancaster, & Hurtado, 2000). A number of anatomical, physiological, and psychological adaptations are thought to have been selected for to support this pattern of human birth and care. Selection has produced a wider female pelvis to allow birth of large brained infants through the birth canal (Tague & Lovejoy, 1986), and a characteristic birth presentation different from that of the great apes, with the majority of human infants born facing the mother's back instead of front (Trevathan & Rosenberg, 2000). The large brain size of human infants is thought to have forced human infants to be highly altricial, and extremely dependent upon their parents. The combination of altricial infants, still unable to support the weight of their own heads and born facing their mother's backs, means that it is difficult for human mothers to catch their own babies at birth, common practice in many of our primate relatives (Jolly, 2000).

This dissertation focuses on the evolution of assisted birth in humans by examining perceived effects of having a trained labor support person, or doula on the birth process and outcomes. Trevethan (1987; 1996; 1999) argues that birth assistants arose along with bipedalism and increased encephalization in the genus *Homo* around 2 million years ago. Morphological constraints posed by a bipedal pelvis, coupled with a rapidly expanding brain capacity, caused birth in humans to become an increasingly complicated, tight fit (Lovejoy, 1988; Rosenberg & Trevethan, 1996). This evolutionary perspective led Trevethan to argue that women who were assisted during the birth of their babies were more likely to survive birth and thus to produce more surviving offspring than those who did not (Trevethan, 1987; 1996; 1999). As Trevethan is careful to point out however, it is unlikely that the desire for assistance during labor was brought about by conscious recognition that companionship increased survival or reproductive success. Rather, assistance during birth was likely driven by proximate emotions such as fear and anxiety associated with giving birth. These emotions could have been mitigated by the reassuring presence of a woman who was experienced in birth herself (Trevethan, 1999). Indeed, women often report that having another person present; especially other women experienced in childbirth, significantly reduced their fear and anxiety surrounding the birth experience (Campero et al., 1998; Hofmeyer et al., 1991; Manning-Orenstein, 1998) and increased their confidence in the process. Furthermore, because of their altricial state and the high levels of provisioning necessary to raise a human infant to adulthood, support prenatally, during labor, and in the postpartum may signal to mothers that the adequate resources exist to raise her offspring to adulthood, and may underlie the human reproductive pattern of having multiple dependent offspring simultaneously (e.g. Hill &

Hurtado, 2009; Kramer, 2009). Thus, for most of the last 2 million years, it is likely that successful births were closely and positively associated with having experienced birth assistants and that women who sought out and responded positively to such aid had better birth outcomes and higher fitness, than those who were indifferent to help with their births. Indeed, if preindustrial societies serve as a proxy for how humans gave birth in the past, women typically gave birth in familiar environments, surrounded by friends and close kin (Davis-Floyd & Cheyney, 2009). If this assistance improved birth outcomes and/or allowed shorter inter-birth intervals, then maternal psychological adaptations for seeking out, evaluating, and responding positively to cues that one has experienced and trusted support during pregnancy and labor, and that one has adequate support to raise the offspring are expected.

In this dissertation I argue that in the modern context, support from a doula acts as a proxy for family and close kin, providing additional, salient cues of adequate support which may function to increase a mother's feelings of support and increase the likelihood that she will have positive birth outcomes and invest in her offspring. I focus particularly on teen mothers because, at least in the United States, teen mothers face a complex set of social and health challenges when they become parents, particularly with regard to the levels of social support they receive during their pregnancies (Furstenberg, Brooks-Gunn, & Chase-Lansdale, 1989; Furstenburg, 2007). Teenaged pregnancy not only carries a social stigma, but teen mothers face the added biological stress of completing their own physical and emotional development while simultaneously meeting the needs of their child (Furstenburg et al., 1989; Stevens-Simon, Beach, & McGregor, 2002). Due to these social and health challenges, teen pregnancy is associated with increased health risks for

both the mother and the baby. Teens tend to delay prenatal care until later in their pregnancy and experience higher rates of poor nutrition, pre-term labor, low-birth-weight babies and other negative birth outcomes (Hans, 2005). Teen pregnancies are often associated with increased risk factors, resulting in efforts both to reduce the rates of teen pregnancy and to increase support for programs to assist pregnant teens (Hans, 2005; Furstenburg, 2007). Furthermore, the environments experienced by many teen mothers are precisely the contexts in which the effects of having support from a known, trusted, experienced birth assistant should be salient, and in which women's responses to their presence should be particularly strong.

After working as a doula in Alaska for two years, I returned to Eugene, Oregon during the summer of 2009 to conduct semi-structured interviews with teen mothers who received the support of a doula through Doulas Supporting Teens (DST), a local non-profit. DST provides free teen childbirth and parenting classes as well as doula support to teen parents. I chose to interview teen mothers who had received support from a DST doula because DST offers one of the most intensive home visiting, doula support programs in the United States. Thus, the support provided by DST doulas represents a good model for the type of support that women may have evolved to be attuned to during pregnancy and birth.

Research Questions

The purpose of this research is to 1) explore the challenges associated with teen motherhood, 2) gain insight into teen mothers' perceptions of how doula support impacted their birth experiences and outcomes, 3) evaluate how teens described their

relationship with their doula, and how the doula/client relationship impacted other relationships and 4) evaluate participants' level of involvement and perceptions of DST.

Here I report on insight gleaned through two independent sources of participant observation as well as a series of semi-structured interviews with teen mothers who had doula support during their pregnancy and birth. I then analyze the degree to which their perceptions reflect those predicted if humans' evolved psychology is adapted to track cues of social support specific to obligate midwifery, and cooperative breeding. Results suggest that doula support provides cues of kinship and friendship that women have used throughout their evolutionary history to assess the availability of alloparental care. Participants also reported that doulas also helped fathers and families provide additional support, thereby increasing levels of support from already existing support networks. Indeed the socioenvironmental cues of support both provided and facilitated by the presence of a doula may explain doulas significant impacts on birth outcomes.

Dissertation Overview

In the following chapters, I explore how the evolutionary context of human birth interfaces with current cultural practices surrounding birth. I argue that doulas function to signal levels of support and investment necessary to adequately raise an offspring to adulthood, and that a functional explanation for why doulas significantly impact birth outcomes may be found in the social support both provided and facilitated through the presence of a doula.

In chapter two, I begin with a discussion of humans' unique set of life history characteristics relative to other non-human primates; difficult births, close inter-birth-

intervals, altrical infants, and multiple, dependent offspring. I then discuss cooperative breeding as an explanatory model for these life history traits, and describe human birth in an evolutionary context of birthing mothers desiring assistance from other women experienced with the birth process. Finally, I provide a description of the cues that may impact a mother's willingness to invest in an offspring.

In chapter three, I describe the predictors of teen pregnancy, including age of menarche and unstable social environments; and, I also examine why teen pregnancy is associated with increased rates of adverse outcomes in the United States, but not in other societies where early childbearing is normative.

In chapter four, I describe the interventions associated with a typical hospital birth in the United States and highlight key research on how doulas positively impact birth outcomes.

In chapter five, I describe the methodology used in this research: participant observation at Doulas Supporting Teens (DST), participant observation as a doula at over 50 births, and semi-structured questionnaires with teen mothers who had DST doula support for the birth of their baby.

Chapters six, seven and eight detail the results of my research. In chapter six I present data from a 15-month participant-observation at DST, and from attending over 50 births in Oregon and Alaska. In chapter seven, I describe the quantitative birth outcomes from the interviews I conducted with teens that had doula support. In chapter eight, I describe the themes that emerged from interviews with DST clients regarding their perceptions of support from working with a DST doula.

In chapter nine, I present a detailed discussion of my results, along with recommendations for future research. Chapter ten concludes the dissertation with a review of critiques of doula support, and policy recommendations for the creation of doula programs which this research suggests would generate the most positive outcomes.

CHAPTER II

EVOLUTIONARY LIFE HISTORY THEORY AND THE OBSTETRICAL DILEMMA

Life History Theory

Evolutionary life history theory is the branch of evolutionary biology that examines the tradeoffs in the timing of critical life events, such as growth, development, self-maintenance, and reproduction both within and between species (Charnov, 1993; Hawkes, Connell, & Blurton Jones, 1997). Life history theory is based on the premise that all organisms face tradeoffs in their allocation of available energy or life resources: energy or resources used for one aspect of life are unavailable for others. For example, resources used for growth are unavailable for immune function, or for reproduction (Blackwell, Pryor, Pozo, Tiwi, & Sugiyama, 2009). Moreover, resource allocation tradeoffs are expected to change over the life span, and the timing of these changes are also subject to selection. The life history characteristics of a species can therefore help us infer the long-term patterns of tradeoffs a species has experienced in its evolutionary history (Bonner, 1965; Stearns, 1992).

Parental investment theory is a subset of life history theory that focuses on tradeoffs between investment in current and future offspring, and in the quality and quantity of offspring. All organisms face decisions between investing currently available

resources on reproduction, or on self-maintenance that will contribute towards future reproduction. And, given finite resources, organisms face tradeoffs between how many offspring they produce and the quality of those offspring. Trivers (1972) pointed out that in parentally investing species, we should expect available parental investment to be allocated as if in response to three questions: 1) what is the probability that the offspring is mine 2) what is the probability it can translate investments into future reproduction, and, 3) what are the alternate uses available for this investment (e.g., additional reproduction, mating, bodily maintenance and so on). It is important to note that parental investment and life history theory do not predict that selection maximizes the number of offspring produced, but instead that it maximizes the number of offspring that will themselves survive and reproduce (Charnov, 1993; Chisholm & Coall, 2008; Stearns, 1992).

Human Life History Patterns

Among primates, humans are unique for their extraordinary cognitive abilities, difficult labors and births, highly altricial infants, juvenile period lasting nearly twice as long as other great apes, short inter-birth intervals, and long post-reproductive female lifespan (Hawkes, O'Connell, Blurton Jones, Alvarez, & Charnov, 1998, Hill & Hurtado, 2009; Kaplan, Hill, Lancaster, & Hurtado., 2000; Flinn, Geary & Ward, 2005). Such divergent life history patterns beg the question of why humans evolved such a unique life history pattern. In this section I begin by outlining how humans deviate from non-human primates in their life history patterns, and then present three current theoretical models used to explain the evolutionary pressures that led to these changes in life history

patterns. As I will argue, better understanding the precursors to our unique life history patterns is critical for understanding our evolved life history patterns, in particular the patterns of human birth and the factors that affect birth outcomes. Furthermore, a life history approach gives us insights into birth and maternal behavior that are central to understanding the effect of doula support on women's perceptions and birth outcomes.

Extraordinary Cognitive Abilities and the Costly Human Brain

Details of the vast number of cognitive and emotional adaptations embodied in our neuro-endocrine system (e.g., Tooby & Cosmides, 2005; Buss, 2005) and the importance of these adaptations for multi-generational cumulative cultural transmission that underlie the extraordinary complexity of human culture (e.g., Hill & Hurtado, 2009) are well beyond the scope of this dissertation. However, relevant here is the fact that our large and energetically demanding brains account for approximately 20-25% of adult's total daily resting metabolic costs (Leonard, Robertson, Snodgrass, Kuzawa, 2003; Leonard & Robertson, 1994). The most efficient way for mothers to provide the energy necessary to support their offsprings' brain growth is directly, via the placenta in utero (Ellison, 2001). And yet, at birth our brains are only about 25% of adult brain size, compared to nearly twice that development in chimpanzees (Bogin, 1991). Nevertheless, at birth human brains still demand nearly 80% of the total energy that an infant obtains (Bogin, 1999). In infancy the human brain grows more rapidly than any other tissue or organ in the body and this growth continues long after birth, with brains not reaching adult size until approximately 7 years of age (Bogin, 1999). Fully adult cognitive-emotional development is not reached until the early 20's, and changes that could not be

identified as senescence continue at least into middle age. If, like our chimpanzee cousins, at birth our brains were nearly half of adult size, either women would not be able to pass the large-headed offspring through their pelvis, or the pelvis would need to widen so much that it would entail bio-mechanical problems with upright locomotion: this problem is known as the obstetric dilemma (see below).

Humans' extreme encephalization quotient, and the obstetrical dilemma of passing such large brained infants through the pelvis, results in human infants being highly altricial, that is, born at relatively early stage of development. Non-human primate infants are also small and dependent, but they can cling, move around, and have completed a much higher percentage of their total brain growth prior to birth (Hrdy, 1999; Bogin, 1999). Human offspring are comparatively helpless at birth, they don't have grasping feet nor can they hold their heads up, so from birth and for several years afterward, ancestral humans must have carried their offspring, another energetically costly proposition (Wall-Scheffler, Geiger, & Steudel-Numbers, 2007).

In addition to the costs of carrying our infants, the transition from placentally nourishing our infants to lactation imposes a significant caloric cost to mothers as well. Pregnancy requires an average of 300 calories per day, while lactation requires upwards of 500 calories per day at birth (Bogin, 1999; Trevathan, 2010). The bulk of the nutrition that the infant receives in utero comes from simple sugars like glucose, and towards the end of pregnancy when the infant's caloric demands peak, converting all fetal resources to sugars becomes an increasingly difficult metabolic task for the mother to perform (Ellison, 2001). Indeed while the actual mechanisms that trigger human parturation are still unclear, it appears that birth occurs when the demands of the fetus outstrip what the

mother can provide in utero (Ellison, 2001). The onset of labor, then, may represent the moment when infants are unable to obtain the nutrition they need placentally, and a transition to the extra-uterine environment and breast milk becomes a better option. This transition to the outside world exerts additional costs on the infant, as it must now take over many of the metabolic tasks (heating its body, breathing, etc.) that its mother previously performed for it. The trade-off is that this transition to the extra-uterine environment allows a nutritional shift from sugars to milk fats that allows the mother to pass this energy source more directly to her offspring, rather than converting her fat reserves to glucose and then transferring them across the placenta (Ellison, 2001).

Due to the caloric demands of humans' large brains, human infants commonly begin taking supplemental food at around 6 months of age, when the caloric demands of their brains and bodies are often greater than their mothers are able to provide through breast milk alone (Bogin, 1999; Dettwyler, 1995; Ellison, 2001). In preindustrail countries, human infants are usually weaned between 2-3 years of age (Sellen & Smay, 2000) but, in most cultures, they remain largely dependent on adults for a significant proportion of their diets until their teens. Among extant foraging societies, offspring remain dependent on adults for care and provisioning until they reach adult body size (Hill et al., 2009), and are often not net food producers until their early 20s (Hill & Kaplan, 1999; Kaplan et al., 2000; Kramer, 2009) although they may make significant contributions to their overall food intake (Reiches et al., 2009). Further, juveniles and their parents receive substantial support from other individuals, primarily those who currently don't have dependent offspring of their own at the time of provisioning (Hill & Hurtado, 2009).

Chimpanzees, on the other hand, wean from the breast around 5 years of age, and inter-birth intervals (IBI) between chimpanzee offspring is roughly five and a half years Wallis, 1997). However, despite this relatively longer IBI, chimp juveniles are functionally independent from their mothers and able to forage efficiently on their own much earlier than human juveniles (Bogin, 1991; 1999). Although the earlier weaning age among humans allows for shorter IBIs in humans than in chimpanzees, natural foraging populations have 3-4 year IBIs, and are not capable of foraging to fulfill their own food requirements at weaning, and so require provisioning, protection and care into early adolescence (Draper & Harpending, 1987; Hames, 1988; Hawkes, O'Connell, & Blurton Jones, 1995; Hrdy, 1999). In addition to differences in weaning and provisioning, humans also deviate from chimpanzees by the presence of an adolescent growth spurt. Chimps, like humans, have a period of growth prior to sexual maturity, but it is primarily a growth spurt associated with soft-tissue growth rather than bone growth (Bogin, 1999). For example, at the time of the adolescent growth spurt, chimps have completed nearly 90% of their long bone growth, whereas humans have only completed 75% of this growth (Bogin & Smith, 1993). Further, chimps reach sexual maturity between the ages of 13-15 (Wallis, 1997) whereas in most extant forager populations sexual maturity is not reached until between the ages of 18-20 (Kaplan et al., 2000). Unlike non-human primates, human fecundity in females begins dropping sharply at age 40 (Faddy, Gosden, Gougeon, Richardson & Nelson, 1992). Cross-culturally most women experience menopause around age 50 (Gosden, 1985), and typically live many years in a post reproductive state (Lopez and Ruzicka, 1983).

So, humans have large, calorically costly brains that require birth of altricial helpless infants who require extended care, carrying and provisioning. Women delay reproduction until relatively late in their lives, and then have short inter-birth intervals and cease bearing children two decades earlier than other organs senesce. This human reproductive pattern means that reproducing adults regularly have multiple dependent weaned offspring at the same time. Clearly, the evolution of this complex of suite traits calls for explanation.

Why Such Divergent Life History Patterns? Practice, Learning, Grandmothers, and Cooperative Breeding

There have been a number of models proposed to account for our unique life history patterns, here I focus on insights from three inter-related ones: practice theory, the embodied capital theory, and the cooperative breeding model.

The first, practice or learning models, hypothesize that the extension of our juvenile period evolved to facilitate the learning of complex foraging skills, and the need for a long learning period to acquire the skills to become an effective forager. Versions of this idea have been recognized for a long time (e.g., Bowlby, 1966), and indeed learning models are often presented in anthropological textbooks.

This theory, often termed the "practice theory," suggests that it takes much of the nearly twenty years before we reach reproductive maturity to learn the requisite skills to forage effectively. Blurton-Jones and Marlowe (2002) tested this idea among Hadza of Tanzania with what they called the "forager Olympics," to determine whether or not practice seriously affected and individuals efficiency as a forager. To perform this test

they experimented with three foraging skills, climbing baobab trees, digging tubers and target shooting. Since many of the young Hadza who participated had been living at boarding schools, their experimental setup evaluated the capabilities of individuals who had had varying levels of experience and opportunity for practice. They found reliable effects of age, size and strength on these essential foraging skills, but no significant effects of long opportunities for practice (Blurton-Jones & Marlowe, 2002). While Blurton-Jones and Marlowe are quick to point out the limitations of their study (self-selecting subjects, and limited range of skills being evaluated), and go on to state that they don't believe that learning and practice are unimportant, at least among the Hadza and with the particular foraging skills they evaluated, the need for foraging practice doesn't seem to account for the fact that humans mature some five years later than do chimps.

Similarly Bliege-Bird and Bird (2002) studied fishing and shellfish foraging among the Meriam of Australia and found that children learn quickly how to forage efficiently, despite the constraints that their size places on them. Children effectively performed even what Bliege-Bird and Bird identify as more complex foraging tasks, such as line and spear fishing. While these results also seem to call into question the validity of the "practice theory" as a pressure for the evolution of delayed maturity, Bliege-Bird and Bird suggest that foraging for other resource types may show different age-related degrees of efficiency. They argue that their results are only indicative of certain resources and suggest that there may indeed, be resources which require additional time and learning to master, such as fishing for large fish, digging for deeply buried tubers and hunting large game (Kaplan et al., 2000).

In fact, the proximate motivation for both the Hadza and Meriam Islander studies focuses primarily, but not exclusively, on the knowledge-based skills necessary to effectively hunt game. The embodied capital theory argues that humans' entry into a foraging niche based on nutritionally rich foods that required extensive knowledge-based skills, primarily for game acquisition, and that weaned juveniles could no longer reliably support themselves through this period of knowledge acquisition, setting up selection pressure for the co-evolution of a number of distinctive human life history traits. The extended juvenile period is hypothesized to have co-evolved as a period in which to acquire the knowledge based skills necessary to become an efficient forager. Food transfers to weaned juveniles evolved to support juveniles during this period, with the extension of this provisioning to other adults (Kaplan et al., 2000). And, the long human lifespan co-evolved with this complex of life history traits as a time in which the long period of knowledge acquisition could pay off in increased fitness.

To be clear, rather than technical skill with the bow, for instance, the embodied capital theory suggests that the knowledge-based skills that really take a long time to master are those necessary to bring the hunter into close enough proximity to game to achieve the kill (Hill & Kaplan, 1999; and see Bock, 2002). As Kaplan and Hill (1985) point out, anthropologists working with foraging groups can often kill local game, but only after their informants have brought them close enough to the game to make the kill. They know of no anthropologist who can achieve return rates close to that of adult male local hunters on their own.

One line of evidence in support of the hypothesis that particular kinds of knowledge-based skills do require 20 years to master comes from studies of hunting

return rates across the lifespan. For example Walker and Hill (2003) evaluated changes in hunting ability through life for members of Ache foragers in Eastern Paraguay. The Ache rely on game animals for up to 80% of their dietary intake (Kaplan et al., 2000) and hunting return rates (measured in kg./hr. hunted) peak between the ages 37-42 (Walker & Hill, 2003). Increasing strength and speed cannot account for these results because Ache male strength peaks in the early 20's, about the time that men are just making the transition from net consumers to net producers, a time when they have not yet reached peak efficiency but are also not yet married and so effectively support the reproduction of reproducing couples via food sharing (Hill et al., 2009). Traditional hunters from other foraging groups take a similarly long time to reach peak hunting returns—Hadza hunting returns peak between 45-50 (Marlowe, 2000) and return rates peak around 35 for the Hiwi (Kaplan et al., 2000). Among the Yora, time allocated to hunting across the lifespan mirrors the return rates found in other societies, with peak time allocated to hunting beginning in the late 30s, whereas time allocated to less knowledge intensive fishing peaks in the early 20s (Sugiyama & Chacon, 2005). Increasing strength into the early 20s can account for some of this age-related increase in hunting efficiency, but clearly not all of it. In short, although local ecological and technical variation means that different , foraging skills may take different amounts of time to learn, adult male hunting return rates do not peak until relatively late in the lifespan, and it is not until the early 20s that men move from net consumers to net producers in foraging societies for which data are available.

Cooperative Breeding

Although well known and the basis for some insights that underlie the embodied capital theory, the grandmother hypothesis, the idea that grandmothers are particularly important sources of alloparental care to their grandchildren and that the evolution of the long post-reproductive female lifespan is a consequence of selection for a life-history shift from investment in reproduction to investment in alloparenting—has given way in recent years to broader agreement that in most societies grandmothers are not particularly important in providing alloparental care in humans, and that reproduction and childrearing support is provided by a variety of individuals (Hagen & Barrett, 2009; Hrdy, 2005; Kramer, 2009).

Cooperative breeding is a reproductive strategy where non-parental individuals assist with provisioning and caring for young (Clutton-Brock, 2002; Emlen, 1991). While cooperative breeding is relatively rare in most organisms, it has been well documented in a variety of vertebrates including fish, birds and several species of primates (Brown, 1987; Emlen, 1984; Cockburn, 1998). Humans commonly rely on the assistance of other individuals to raise their offspring from infancy to adulthood. Indeed, among anthropologists, it is becoming increasingly accepted that in order to maintain rapid rates of reproduction and support their highly dependent offspring, humans likely evolved to be cooperative breeders (Hill & Hurtado, 2009; Hrdy, 2005; Kramer, 2009; Sear & Mace, 2008) with mothers dependent upon alloparental care from relatives to successfully raise their offspring to adulthood (Reiches et al., 2009). This model deviates from previous conceptions of the family where familial units and ideas of provisioning were based primarily upon male and female pair bonds (O'Connell, Hawkes, Lupo, &

Blurton Jones, 2002). In all known human societies mothers provide the bulk of caregiving, however, alloparental care is often provided by others (Hagen & Barrett, 2009; Hames, 1988; Kramer, 2009; Sugiyama & Chacon, 2005). The alloparental care of grandmothers has been argued to have had such significant impacts on the evolution of human life history traits that that they generated the short IBIs seen in humans and the evolution of menopause (Hawkes et al., 1998). Although grandmothers may make significant contributions to care and the success of offspring, among the majority of cultures, the bulk care giving is provided by a variety of different individuals. For example, among the Ifaluk islanders of Micronesia, women whose first-born children are female have greater completed fertility than those whose firstborn children were boys (Turke, 1988), suggesting that these older sisters act as helpers at the nest who help subsidize their mothers reproduction. Among the Ye'kwana of Venezuela mothers provide the majority of direct care for children (49% of the time) however, the remaining care is provided by; sisters 16%, other relatives 16%, grandmothers 11%, fathers 3% and brothers 2% (Hames, 1988). For Caribbean children younger than age 4, Flinn (1992) found that approximately 45% of care was provided by non-parents; 16.3% by siblings, 17.6% by grandparents, and 11.7% by other relatives and non-relatives. Among the Yora of the Peruvian Amazon, children lived in households containing an average 1.83 adult alloparents and 2.19 older juvenile alloparents. And, children where either one or both parents died lived in households with a greater number of alloparents than children both of whose parents were living (Sugiyama & Chacon, 2005). Further, children were observed eating at households other than their own on approximately 40% of the times they were observed eating, and spent over 50% of their time in households other than

their own, where people other than their own parents were the primary sources of indirect or direct care or protection (Sugiyama & Chacon, 2005). Finally, a cross-cultural review of caregiving and alloparental care among hunter-gatherer societies found mothers always to be the primary providers of care for children, but that a substantial amount of care was given by a variety of individuals in all known cultures (R. Quinlan, & M. Quinlan, 2008).

Thus, the current consensus among biological anthropologists is that cooperative breeding helps to explain some of the unique life history characteristics present in humans, such as pro-social behavior towards both kin and non-kin, longevity, long postmenopausal life spans, encephalization, short IBIs, and high fertility (Flinn, Quinlan, Coe, & Ward, 2007; Hawkes et al., 1998; Hrdy, 2009; Kramer, 2009). If kin and other alloparents significantly impact breeding individuals' fitness, and that of their offspring, then selection is expected to have produced adaptations which are acutely tuned to assessing social cues that were statistically associated with degree of care and alloparental support one could expect for a child, and to track these closely as conditions changed across time and to adjust their level of parental investment accordingly (e.g., Hrdy, 1999; 2005). The presence of supportive individuals during pregnancy, birth and in the postpartum may well have been a statistically reliable cue to mothers of the degree of support that would be available to raise an offspring to adulthood.

An Evolutionary Approach to Birth

Most mammals seek solitude to give birth to their offspring (Dunbar & Dunbar, 1974; Jolly, 1999; Trevethan, 1987). Among non-human primates, mothers typically

leave the group and find an isolated spot to give birth (Dunbar & Dunbar, 1974; Jolly, 1999; Timmermans, Van Beersum, & Vossen, 1998). Observations of non-human primate births are rare—even in zoos, primate births are notoriously difficult to observe because female primates tend to wait until late at night or until the weekend to give birth (Jolly, 1999). While solitary birth is identified as a cultural ideal in some human cultures, there is debate about how often this ideal is achieved (Biesele, 1997; Konner & Shostak, 1987). In most cultures birth is not a solitary event, and women often express a strong desire to be around others, especially other women during labor and birth (Kennell, 2003; Konner & Shostak, 1987; Trevethan, 1987).

Trevethan (1987; 1999; 2010) suggests that changes in pelvic morphology resulting from the transition to bipedalism, coupled with an increase in brain size for *Homo* beginning around 2 million years ago, led to significant changes in human birth. Hominoid pelvises were under competing selective pressures, often termed the "obstetric dilemma" (Lovejoy, 1988; Rosenberg & Trevethan, 1996), both for upright walking and birthing large-brained infants. On the one hand, there was selection for the pelvis to be narrow and flattened, appropriate for the muscle attachments and balance necessary for efficient bipedal locomotion and for supporting the internal organs (Jolly, 1999; Lovejoy, 1988). On the other hand, the larger size of the human head selected for a wider pelvis capable of birthing highly encephalized offspring. The competing pressures of bipedalism and increased encephalization caused human birth to become more difficult, because the infant's head is almost as large as the opening of the maternal pelvis.

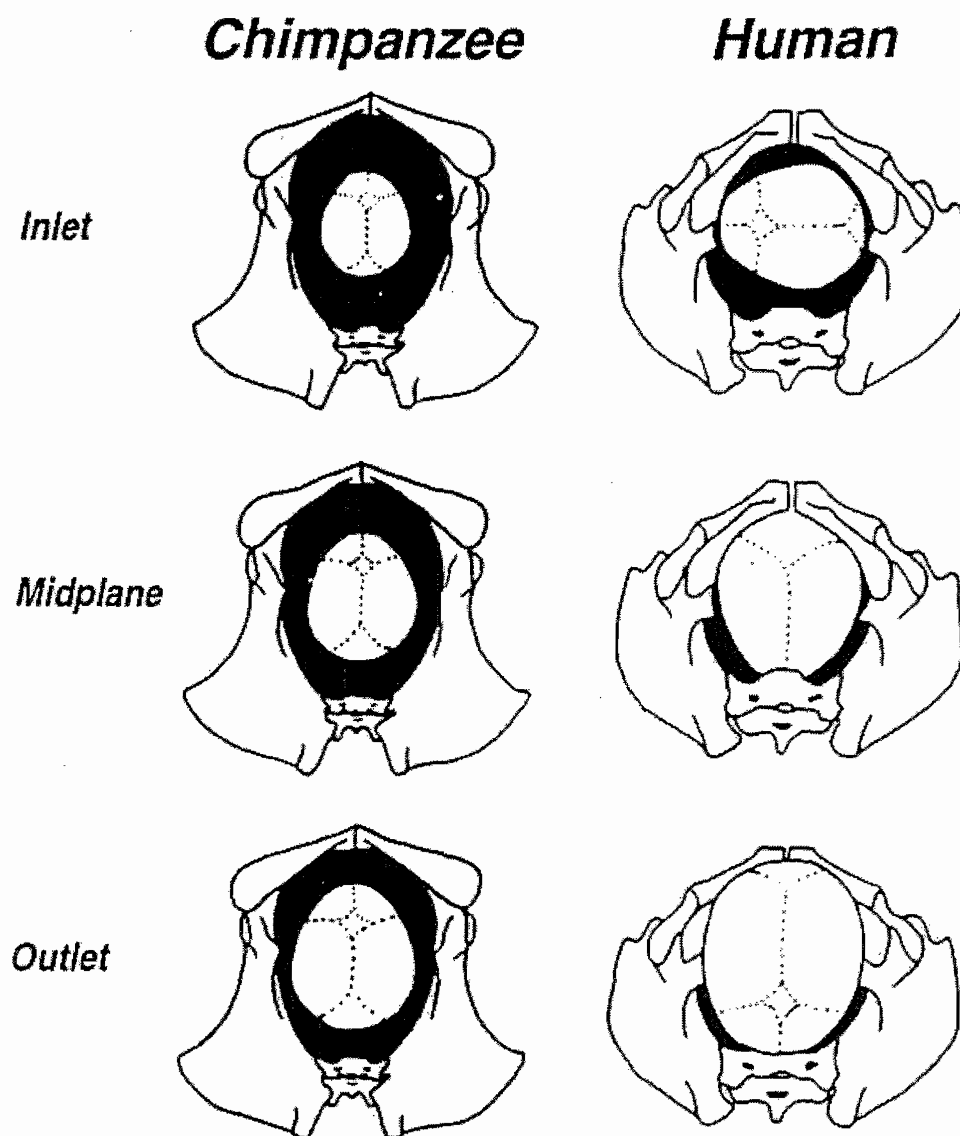

Figure 2.1.Pelvic inlet and outlet dimensions in a quadrupedal primate as compared to human pelvis (Used with permission, Trevathan, 1999).

As indicated in figure 2.1, the pelvis in quadrupedal primates is largest from front to the back (the saggital dimension) (Trevethan, 1987; 1999). The spatial dimensions of most primate pelvises are largely the same at the inlet, mid-plane, and outlet (Trevethan, 1987; 1999). Because of these pelvic dimensions, primate infants typically enter the birth

canal in the occiput posterior position, with the back of their head (occiput) against the base of the mother's back. While in some species the infant rotates and spins down the birth canal, many descend through the pelvis with their head extended, face first, retaining the occiput posterior position (Trevethan, 1987). In other words, most primates are born face first and facing toward the front of the mother's body (Jolly, 1999). This position allows a female primate to assist herself with the birth of her infant; she can reach down to remove an umbilical cord wrapped around the infant's neck, clear the airway as it emerges from the birth canal, and physically lift the infant out of her body. Nevertheless, even quadrupedal primates have relatively difficult births compared to other mammals because primates generally have relatively large brains in comparison with their body size (Trevethan, 1999). However, no other primate experiences as many complications during birth as do humans.

In contrast to non-human primate pelvises, human pelvises are widest at the inlet from side to side, and at the outlet from front to back (Figure 2.1) (Trevethan, 1999). This wide flat pelvis is an adaptation to bipedal locomotion, since it is easier to balance on a wide platform than on a tall thin one. Since an infant's head is widest from front to back, human infants enter the birth canal facing the mother's side (usually the left side) but must rotate as they descend through the pelvis (Jolly, 1999). Human infants also differ from non-human primates in that they have relatively wide, rigid shoulders that must also pass through the bony pelvis. Infants typically enter the pelvis with their head flexed, their chins touching their chest, presenting the smallest portion of the head to the pelvic inlet (Coad and Dunstall, 2001) (Figure 2.2).

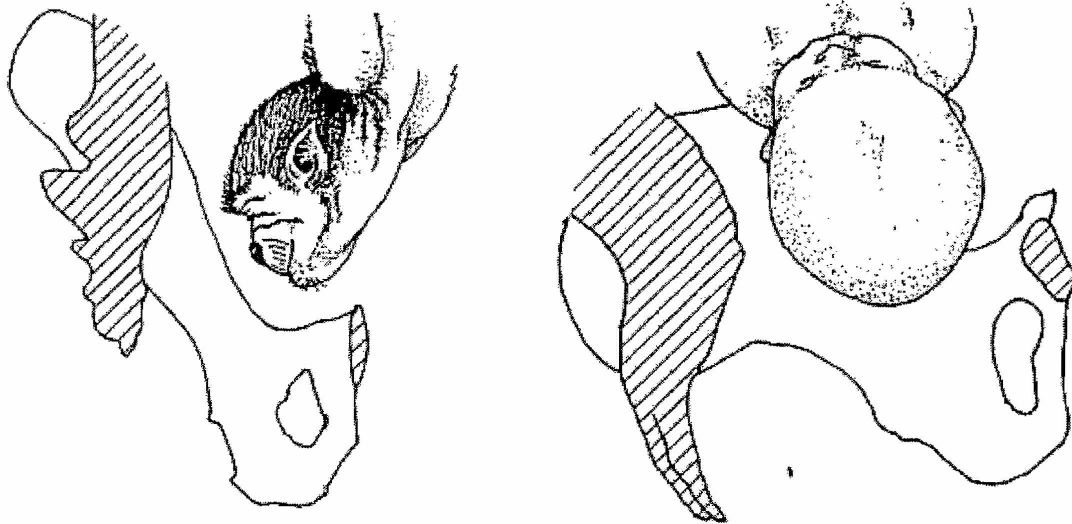

Figure 2.2. Position of the fetal head during descent through the pelvis (Used with permission, Trevethan, 1999).

After passing through the pelvic opening, the infant's head rotates to the occiput anterior position (with the infant facing the mother's back) so that the shoulders can pass through the inlet. Between ninety and ninety-five percent of infants are born in the occiput anterior position, with the baby facing the mother's back as it emerges from the birth canal (Figure 2.3) (Coad and Dunstall, 2001), indicating that selection has shaped human birth to follow this pattern.

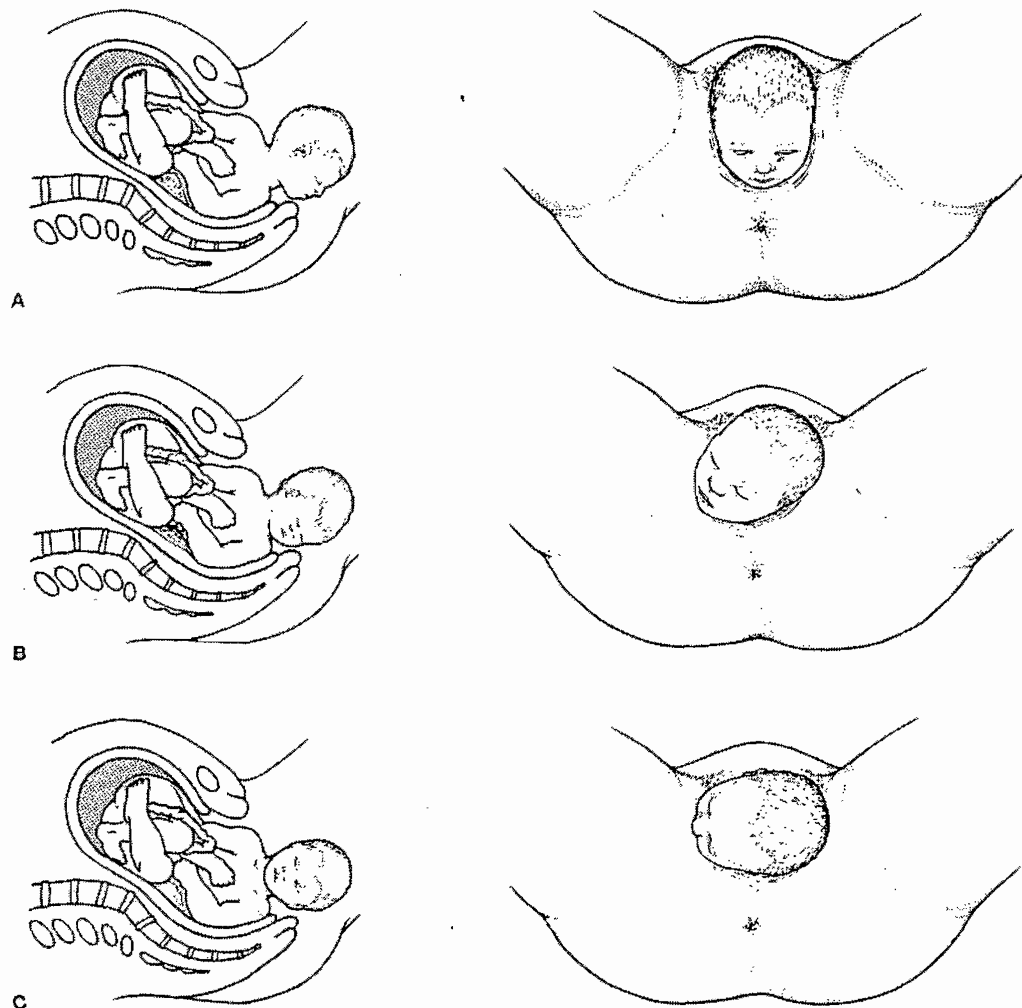

Figure 2.3. The occiput anterior position for birth. (Used with permission, Coad and Dunstall, 2001)

The occiput anterior position for birth means a human mother cannot assist herself or her offspring during birth in the same way that non-human primate mothers can. A human female who attempts to pull on her infant before the head has rotated to pass the shoulders under the pubic bone risks hyper-extending the infant's neck, potentially causing neurological damage. For this reason, Trevethan (1987; 1999) and

others argue that the occiput anterior position led to a pattern of "obligate midwifery" among humans. Mothers who had helpers present during the birth of their babies likely left more surviving offspring than those who birthed their babies alone. A helper could clear an infant's airway, remove a cord wrapped around the infant's neck, or could gently ease the infant out of the birth canal, all of which would have decreased infant mortality. In short, Trevethan (1988; 1999) suggests that as the obstetric dilemma of bipedalism and larger brain size evolved, human birth became increasingly complicated and it became more difficult for women to successfully birth alone. With this came a shift away from the solitary birthing practices of our non-human primate ancestors to the assisted birthing practices of modern humans.

In addition, as human birth became increasingly complicated, there was likely an increase in the potential for fear and apprehension regarding the birth experience. It seems plausible that the human response to these emotions of fear during was to solicit and/or receive assistance from other women during the birth off their babies. This desire for the presence of others during the birth of an offspring likely occurred, then, not in conscious response to the fact that support during labor increased offspring survival but rather to proximate feelings of fear, pain, and other emotional stressors (Trevethan, 1999).

Under the relevant conditions of our evolutionary history, sexually active fertile women would have a reasonably good chance of becoming pregnant. If one accepts modern foragers as a guide, a woman might expect approximately 6 live births between the ages of about 17 and 43 (Sugiyama, 2004). The most widely accepted models of early humans suggest that women lived in small kin-based social group with several women

who had already experienced several births, including, perhaps her own mother and other women who had completed fertility. In other words, human birth included assistance and close social support from kin or other women experienced in the birth process. In the United States currently families are often spread out, and women are isolated from their immediate family, close kin and others who would have typically provided support.

My argument, then, is that doula support enhances the evolutionarily relevant cues that adequate social support is available to the woman. By providing cues of social support, a doula's presence likely reduces psychosocial stress, and may increase the production of oxytocin (Lederman, Work, & McCann, 1978). I hypothesize that the positive effects of doula support can be traced to doulas enhancing support that, throughout our evolutionary history, birthing mothers received from other women experienced with childbirth. Doulas appear to improve birth outcomes for teen mothers both because of their knowledge regarding the birth process and because they help fill a woman's need for social support. Mothers who receive cues of adequate soci-environmental support may be more likely to have positive birth outcomes, invest heavily in their offspring, and have lower levels of postpartum depression.

Maternal Investment

Indeed it appears that there are specific cues that mothers look for when determining whether or not to invest in a particular offspring. This section outlines the factors that may impact the amount of support a mother may invest in an offspring as well as the life history argument for why a mother or may not invest in a particular offspring. Sarah Hrdy, an evolutionary biologist and primatologist, argues that despite

the powerful cocktail of hormones present in a mother directly after birth—maternal investment is facultative not obligate (Hrdy, 1999). Hrdy's work draws upon comparative research between non-human primates and humans. She argues that primate mothers, especially monkeys, rarely fail to invest in an offspring—after birth, simian infants cling to their mothers and immediately begin nursing (Jolly, 1985). Humans, on the other hand, are born at such an altricial state that mothers have to help them begin nursing. Indeed, she suggests that it is the act of nursing itself that releases both oxytocin (the so-called hormone of love, associated with orgasm) and prolactin (a hormone associated with birth and bonding) the two hormones that are important factors in bonding between mothers and their offspring. The window between birth and nursing, Hrdy argues, allows mothers the potential to cut their losses at 9 months rather than continuing to invest in an ill-fated offspring. While others have argued that our conceptions of mother love are based on cultural and social constructions (Scheper-Huges, 1992), Hrdy suggests that mother love stems from an evolved psychology where it may not have always been in a mother's best interest to invest in each of the offspring she produced.

Hrdy's argument has its roots in parental investment theory (Trivers, 1972): because mothers have been selected to behave in ways that maximize their lifetime reproductive success (Williams, 1966), it may not always be in their best interest to invest in each offspring that they produce. Indeed, it seems that there are reliable cues that mother's use when deciding whether or not to invest in an offspring. The factors which may affect a mother's willingness to invest are: 1) infant health 2) maternal health, parity,

and age 3) paternal support and marital stability 4) access to resources and levels of social support, and 5) appropriate inter-birth intervals in foraging societies.

Infant health has been shown to be a reliable predictor of maternal investment. Scheper-Hughes (1992) describes mothers who withdrew support from their sick offspring, rationalizing their behaviors by describing the infants as born "wanting to die." Further support for infant health affecting the amount of investment was found by Mull and Mull (1987). Mull and Mull worked in Mexico with the Tarahumara studying obstetric practices, but after witnessing several instances of infant neglect and infanticide they questioned 20 women regarding the practice of infanticide. Over half of their informants knew of women who had committed infanticide because their infants possessed congenital abnormalities or because of poor infant health.

Although investment at some level is socially sanctioned in the United States, the amount and type of care a child receives may be indicative of the level of parental investment. Mann (1992) studied maternal investment in preterm twins. In twins born before term (as they often are) one twin tends to be born healthier and stronger. In her observations of maternal behavior among preterm twins, she found that although both twins were well cared for (fed, clean, fresh diapers) mothers differed in the amount of social interaction they had with each twin. Mann found that mothers preferentially invested in the healthier twin by talking, smiling, cooing and holding the more robust twin more than the smaller twin.

Finally, a sad indication of lack of maternal care (and parental care generally) was found by Daly and Wilson (1988) in a study of children with defects placed into residential homes. Analyzing data from a 1976 census they found that roughly 16,000

(roughly 12% of the total number) children's parents had ceased visiting them altogether and 30,000 (roughly 22% of the total number) parents visited them once a year or less. Indeed, it seems that regardless of the social standards for investment, infant health and vitality affects the amount of investment a child receives.

Maternal heath, parity and age also affect the amount of investment in offspring. Mull and Mull (1997) in their work with the Tarahumara also identified poor maternal health, and too many children, as a reason cited by 95% of their informants for committing infanticide. Also, among the !Kung, an insufficient inter-birth interval has been cited as reason for infanticide (Shostack, 1981)—indeed it seems that mothers would rather sacrifice a new born offspring rather than compromising the potential health and well-being of a health child still highly dependent upon maternal resources. Indeed, no society is known where infanticide is practiced on an older rather than a younger offspring (Daly & Wilson, 1988).

Finally, in their Canadian sample of homicides, Daly and Wilson found that although teenaged mothers produced relatively few of the offspring in their sample—teen mothers were disproportionately represented in those who committed infanticide. It seems that maternal health, age and parity all affect a mothers' willingness to invest, and that ultimately mothers may be acting to enhance their lifetime reproductive success. For a young mother with her entire reproductive career ahead of her, it may make more sense to continue to allocate resources to her own growth and development rather than investing in the first offspring she produces, especially if paternal support is lacking (Bugos & McCarthy, 1984).

In addition to infant and maternal health, another variable that impacts maternal investment is paternal support. Among the Masai, Devries (1987) found that, while infanticide was not openly approved of, no one was surprised if a woman who was having the baby of an old or sick man (thus anticipating low or no paternal support) committed infanticide. Lack of paternal support was also cited 95% of the time by the Tarahumara as a reason for infanticide (Mull & Mull, 1987). And in their Canadian sample Daly and Wilson found that although single mothers were responsible for only 12% of births, they committed over 50% of the infanticides.

Finally, social support and access to resources are also expected to affect a woman's willingness to invest in a particular offspring. These two variables are often closely tied together, as have paternal and social support often implies an increased resource base. Among Mull and Mull's sample with the Tarahumara, infanticide was more likely if the woman lacked social support or did not have adequate resources. And among the Ye'Kwana, Hames (1987), found that social support positively affected a woman's overall reproductive success—suggesting an increased willingness to invest and an increase in offspring survival.

While much of the research I've presented on maternal investment has focused on infanticide—what can be considered the ultimate withdrawal of maternal support—mothers who lack support or experience other factors which may lead to a reduction in investment, may instead shift their behavior in ways to solicit additional social support for themselves and their offspring. Much of the cross cultural data on maternal investment suggests that it is indeed facultative, and contingent upon both the

mohter's age, parity and condition as well as the amount of social and material support available to the mother.

Postpartum Depression

If a woman has decided to invest in an offspring, one of the ways she may garner additional support is by becoming depressed and withdrawing support from her offspring (Hagen, 1999). While the majority of research in the social sciences on postpartum depression (PPD) explains it as pathology, Hagen (1999, 2002) argues that it may instead represent an adaptation on the part of the mother. Interpreting psychosocial pain as an adaptive response is not new, and the cross-cultural commonality of emotions is frequently cited as evidence that emotions were molded and maintained by a long history of selection (Nesse & Williams, 1996). Hagen argues that mothers may experience PPD as an adaptation to reduce investment in offspring to cut their losses when the prospect of successfully raising an offspring looks bleak, or when investing in a single current offspring appears to costly in the long-term and in regard to generating future offspring. That is, females may experience depression either as a bargaining tool to solicit additional support from their mates or other kin, or, should the bargaining for additional support fail, as a mechanism to reduce investment in a particular offspring in favor of future births in better conditions.

Consistent with this review, the occurrence of PPD is associated with many of the risk factors for the withdrawal of maternal investment—the risk of PPD is higher among mothers with offspring in poor health, when mothers themselves are in poor health, experiencing relationship instability, and low levels of social support (Hagen, 2002).

While at a proximate level, PPD is most often explained as the response to rapidly dropping levels of female hormones, males experience PPD at roughly half the rate that their mates do (Goodman, 2003; Hagen, 2002), and falling hormone levels don't explain PPD in males. Additionally recent research has found that adoptive parents also experience signs and symptoms of postpartum depression (Foli & Thompson, 2004) although this is an area that has received relatively little attention. Further support for Hagen's theory of PPD as bargaining comes from the fact that investment by the father and by close kin often increases with the occurrence of depression by the mother, indeed, once investment increases, or once infant or maternal health improves, PPD often disappears. Thus, Hagen's model of PPD as adaptation follows Hrdy's (1999) argument that maternal love is facultative and context-dependent.

Cross-cultural studies on the presence of PPD are scant. In the only comprehensive cross-cultural analyses of PPD, Stern and Kruckman (1983) found PPD to be far more prevalent in Western societies than it was in small kin-based groups; indeed some kin-based groups had never heard of depression following the birth of a child. Stern and Krunkman (1983) also suggest that the high-levels of PPD can be explained at least in part by social fragmentation and lack of social and kin support following the birth of a baby in Western settings. In cultures where postnatal rituals are still intact (and typically consist of things such as: mandated rest for the mother, assistance by close kin in caring for the baby, celebrations of the woman's transition into motherhood) PPD is almost non-existent.

Among the Shuar, an Ecuadorian foraging society, Hagen and Barrett (2007) interviewed Shuar women about feelings of "sadness" following the birth of their child.

Among the Shuar (a small kin-based society) 32% of women reported feelings of sadness following the birth of a baby. Interestingly when asked why they experienced feelings of sadness, Shuar women (unprompted) stated that they felt sad for the following reasons: their child was unhealthy, they had too many children, they were in poor health and their husbands were not helping them enough. Hagen and Barrett's research supports Stern and Krunkman's assessment for why PPD is so prevalent in westernized regions of the world, and suggests that rapid social changes for the Shuar have discontinued many of the postnatal rituals traditionally practiced, and may contribute to the increased prevalence of PPD.

An evolutionary perspective on the patterning of maternal investment suggests that maternal investment is indeed not the kind of simplistic automatic response that most laypeople and many anthropologists think of as "instinctive" but, rather, that is a facultative response based on complex cognitive adaptations that assess a number of evolutionary relatively reliable social and health cues. This perspective offers straightforward predictions about whether and to what degree mothers will invest in different offspring, and how these investment patterns are predicted to change across women's reproductive lifetimes (Hrdy, 1999). Mothers are likely to invest more in healthy offspring, when they themselves are healthy, and have both adequate resources and support to invest heavily and well. This model suggests that rather than condemning mothers who fail to invest in their children we should emphasize programs that give them the necessary support to encourage investment in their children. Women who show signs of PPD may be signaling that they need help—rather than dosing them with

antidepressants, we should instead be enrolling them in parenting classes and sending social workers to help them access additional resources for themselves and their children.

Evolutionarily Relevant Cues of Experienced Support and the Alloparental Environment

Birth assistants likely co-evolved with the expanding brain and increased complications associated with birth, such that having a conscientious birth attendant helped to both alleviate maternal stress and enhance infant and maternal outcomes. Moreover, women are predicted to have adaptations sensitive not just to the presence of a birth helper per se, but to cues of the relative degree of experience that the women supporting her has with different birth experiences. Further, women are predicted to have adaptations which use level of social support during pregnancy, birth, and post-partum as cues to the level of alloparental support they will receive with each child, and to adjust their maternal investment in part in response to these cues, all of which should have impact on birth and maternal outcomes.

Easy enough said, but conscientiousness, competence, experience and what constitutes relevant predictive social support for later alloparental investment are not readily advertised, and it is likely that individuals can assess these characteristics only because we have adaptations specifically designed by selection to do so. These adaptations must assess particular behavioral or other cues that were statistically recurrent and reliably associated with conscientiousness, care, and competence over relevant evolutionary timescales. What then, might some of these particular cues be? An

analysis of cue assessment in this realm benefits from thinking about the problem more generally, in terms of cues of genuine commitment and friendship.

Tooby and Cosmidies (1996) explore the implications of an adaptationist version of the "problem" of altruism, or assisting others at an apparent cost to oneself, and suggest that because humans are gregarious and social animals, they should be especially attuned to cues of trustworthiness, friendship and caring. They further argue that we likely have cognitive mechanisms for reliably assessing these traits in other individuals. Indeed, signaling generosity and kindness, even at a cost to yourself has been argued as a mechanism to ensure assistance during future times of need (Sugiyama & Chacon, 2000). During pregnancy, when the knowledge of level of available alloparental support may significantly impact a mother's willingness and ability to invest in an offspring, she may be particularly attuned to cues of available support. In particular, mothers are expected to be sensitive to cues of willingness by others to invest both in her and her offspring. These cues may involve signals of availability and accessibility—both indications that an individual would reliably to assist her and her offspring. Cues of support may also involve offering a benefit to the pregnant and laboring mother without a cost to the mother herself—while also not imposing conditions under which the support is offered. Indeed, doula support, especially intensive free services offered without payment or expectation of reciprocation fit these criteria. Further cues of support may also be physical and tangible—physical support, and assistance during labor, and continuous presence, may indicate reliable assistance for the mother and interest in her and her offspring's well being.

In addition to being attuned to cues of support and investment, mothers may also be primed to detect cues of competence and experience on the part of her birth assistants. These cues may come from the birth assistant sharing her personal experiences of having previously attended or given birth herself, or from other social cues of competence and experience. For example, a woman with prior experience giving birth or attending births, likely would remain calm and present even as a woman struggles with the pains of labor. Additionally, respect from other individuals, such as doctors or midwives, who themselves are knowledgeable and experienced with the process of birth may also provide cues of competence. Finally, cues of competence from individuals with knowledge and experience with birth may come in the form of behaviors which demonstrate familiarity with the pregnancy, birth and postpartum. This may take the form of providing quality information, assisting with position changes which function to alleviate or lessen labor pains, or providing direct physical or emotional support during labor and the postpartum. It is likely, then, that much of the support provided by doulas functions to provide cues of high levels of assistance and available alloparental care. Because women possess adaptations to assess the level of support in their environment, and may adjust their investment in offspring accordingly, doulas may function to trigger higher levels of investment by the mother.

CHAPTER III

THE DILEMMA OF MATERNAL INVESTMENT: TEEN REPRODUCTIVE DECISIONS

As noted in the previous chapter, a basic tenet of life history theory is that individuals must allocate energy between somatic maintenance and reproduction. Any energy that is devoted to growth and development is energy that cannot be allocated to reproductive effort, and individuals are expected to be sensitive to environmental cues that suggest the optimal time to allocate resources to reproduction. Most models of ecological stress suggest that in risky and uncertain environments, the best strategy is to reproduce often and as frequently as possible. When conditions are more predictable, parents are expected to produce a smaller number of high-quality offspring who are likely to survive and reproduce (Sterns, 1992). Indeed, it appears that the timing of menarche and reproduction for young females is dependent upon environmental cues.

Timing of Reproductive Readiness and Other Correlates of Teen Pregnancy

Age of Menarche

The timing of menarche, or the age of first menstrual bleeding, can impact a young woman's reproductive readiness, and the timing of her first birth. Menarche is a biological event that signals the onset of potential fertility, and is infused with cultural,

social, and personal significance (Shostack, 1981; Ayse & Uskul 2004). From a life history perspective the timing of menarche is of special interest as it represents a shift in an individuals allocation of energy from investing in growth and development, to future reproduction. Human females typically experience menarche between the ages of 10-16 with a great deal of variation existing both between and within various populations (Bogin, 1999; Ellis, 2004). There is a widely accepted index used to define the tempo of female pubertal timing: less than 10 years of age defined as rapid, 10-14 as average; and above 14 years of age as slow maturation (Stevens-Simon, 2002). Among middle class adolescent females in developed nations, the mean age of menarche tends to fall at 12.5 years (Eveleth & Tanner, 1990). Pregnant teenagers tend to be earlier maturers, experiencing menarche before 14 years of age (Stevens-Simon & White, 1991). The secular trend among developed and developing countries, over the last 150 years, of a decrease in the age of female maturation has increased interest and attention to this feature of our life history.

There is debate as to which factors most significantly impact the timing of reproductive maturity in human females—indeed there are a number of different factors that seem to impact age of menarche such as: weight and body mass, physical illness, number of siblings, altitude, nutrition and amount of exercise (Brooks-Gunn, 1988). Until relatively recently most considerations of age of menarche in women evaluated this life transition from a proximate perspective of energy expenditure and overall condition. Variation in the timing of puberty in females has received considerable attention. Perhaps the most consistent finding is that the early onset of puberty (<14 years of age) is associated with a variety of negative health and psychosocial outcomes. These risks

include, increased chance of breast cancer (Apter & Vihko, 1983), unhealthy weight gain (Ness 1991), higher rates of teenage pregnancy (Manlove, 1998; Stevens-Simon & White, 1991; Udry & Cliquet, 1982), an increased probability of having low-birth weight babies (Scholl et al., 1989) and more disturbances in body image, emotional problems, and more behavioral problems overall (Caspi & Moffitt, 1991). These negative outcomes make the age of sexual maturation an especially interesting arena of research with serious implications for social policy.

While we know a great deal about the psychosocial consequences (listed above) of early pubertal timing, we are still in the early stages of earnestly exploring the psychosocial antecedents of pubertal timing (Moffitt, Caspi, Belsky, & Silva, 1992). Belsky and colleagues (1991) were some of the first researchers to suggest that developmental experiences could affect the timing of menarche. In their seminal theoretical article they suggest that the:

Principal evolutionary function of early experience during the first 5-7 years of life is to induce in the child an understanding of the availability and predictability of the resources (broadly defined) in the environment and the trustworthiness of others and of the enduringness of close interpersonal relationships all of which will affect how the developing person apportions reproductive effort (Belsky, Steinbery, & Draper, 1991 p.41)

More specifically, Belsky and colleagues (1991) provide a theoretical framework grounded in evolutionary ecology that suggests that individuals have a sensitive period during which they "set" their reproductive strategies based on environmental cues. In short, they argued that children whose families could be characterized by high levels of

stress (e.g. coercive and negative family relationships, scarcity or instability of resources, father absence) should develop in a manner that speeds the rates of pubertal maturation, accelerates sexual activity and may position an individual towards an increased number of unstable pair bonds. On the other hand, children whose families were relatively stable should adopt a strategy of delayed maturation and increase investment in growth and wait for reproduction. As such, early familial environment sets the girl onto a developmental track in line with a reproductive strategy that would, given her current and predicted environment, result in the best reproductive output. This theoretical model has given rise to a growing body of literature testing the model that the age of menarche is a flexible, facultative response to environmental cues.

From a life history perspective there is no set answer for when the timing of menarche should occur. Rather, a life history approach suggests that individuals should respond to different fitness costs and benefits, and that natural selection should select for overall flexibility in terms of the timing of reproduction. The questions that a model using the life history approach asks, then, is 1) when should an individual reach sexual maturity, and 2) what sorts of environmental and developmental cues influence individuals with regard to the timing of reproductive maturation.

Without question, both heritable and non-heritable environmental factors influence differences between individuals in the timing of menarche. Of course, any systematic environmental effects are themselves the product of the proximate environmental factors and the evolved mechanisms that alter behavior in response to these factors. Campbell and Udry (1995) evaluated the potential heritability of age of menarche in their research and found that a mother's age of menarche was a strong

predictor of daughter's age of reproductive maturation. Farber (1981) evaluated the effects of genetics on the average age of menarche and found that monozygotic twins, reared together, differed by 2.8 months, while dizygotic twins reared together differed by an average of 12 months. While Farber's (1981) study provides support for a genetic influence on the timing of menarche, Farber also found that monozygotic twins reared apart differed in their age of menarche by an average of 9.3 months. These data clearly show that there are both strong heritable and environmental influences on the timing of reproductive maturation.

Environmental effects on age of menarche can be divided into both physical and psychosocial factors. Most of the literature on the environmental effects on the timing of menarche has, following Belsky et al. (1991), focused on two types of stress: 1) physical stress, such as malnutrition, disease and illness; and 2) socioemotional stress (i.e. stressful or unstable familial relationships and low-levels of parental solicitude) and divorce (usually focusing on the presence or absence of the biological father).

Physical stress in terms of malnutrition and other biophysical effects that disrupt normal physiological functioning have been shown to delay the onset of reproductive maturity (Ellison, 2001). Indeed, basic biological predictions of resource scarcity, and other physical stressors often shows that females experiencing stressful situations will delay reproduction until circumstances are more favorable for supporting reproduction (Colmenares & Gomenadio, 1988). While certain physical stressors such as poor nutrition, or high levels of physical exercise (Brooks-Gunn, 1988) certainly delay the age of menarche, research by Hulanicka (1999; Hulanicka, Gronkiewicz, & Koniarek, 2001) on Polish girls provides an important distinction between physical and psychosocial

stressors. Hulanicka found that within the same samples, poverty and resource scarcity were found to increase the age of pubertal development, whereas, familial stress and discordance predicted earlier reproductive timing. While physical stressors undoubtedly effect the timing of reproductive development in young women, given adequate nutrition, socioemotional conditions are also seem to have a large effect. Indeed, Coall and Chisholm (2003) have suggested that the effects of physical and socio-emotional stresses are hierarchically ordered—pubertal maturation is dependent first on health and nutrition, and when these are adequate, development is sensitive to socio-emotional cues and conditions.

In an attempt to pick apart the socio-emotional stressors that affect the timing of menarche, Moffitt and colleagues (1992) prospective study of New Zealand girls (N=416) evaluated the effects of behavioral problems, family conflict, father absence, social class and weight on the timing of menarche and other developmental markers. Moffitt and colleagues found contrary to predictions generated based on Belksy et al.'s (1991) model, that psychosocial risk factors did not seem to affect age of menarche in a cumulative fashion. Rather, they found that SES and behavior problems did not significantly affect the timing of menarche. Instead, father absence, family conflict and weight seemed to have the most significant effects and reliably predicted earlier ages of reproduction. Finally, and perhaps most interestingly, the longer the period of father absence, the earlier the age of menarche in the girls.

Rooted in the findings of Moffitt and colleagues (1992) and using largely the same prospective research, design Ellis and colleagues (1999) performed a longitudinal study of American girls (n=173) evaluating the quality of family relationships (both

through maternal report and direct behavioral observation) prior to the girls' entry into kindergarten. Ellis and colleagues found that it was not just the absence of the father from the home that predicted earlier pubertal timing, rather, it was the amount of paternal investment in the family which featured as the most salient feature in the familial environment in terms of predicting their daughter's pubertal timing. In an attempt to explain their findings, Ellis et al. suggest that the relationship they found in terms of paternal investment could be a) spurious, b) related to stress and family relationships c) that exposure to unrelated males might cause earlier maturation or d) explained as exposure to biological fathers somehow inhibited pubertal development.

How the amount of parental investment and interactions with unfamiliar males impact age of reproductive maturity have been evaluated in a variety of mammalian species. For example, research on baboons at the Madrid zoo found that the average of menarche was 173 weeks (Colmenares & Gomenadio, 1988). While lower ages of reproductive maturity are common in captive and zoo animals, this age of menarche was even further decreased by the introduction of 3 unfamiliar and unrelated adult males into the colony. With the introduction of these males, the average age of menarche dropped by a full year to 121 weeks (Colmenares & Gomenadio, 1988). The fourth proposition, that fathers somehow inhibit pubertal development, is found among prairie dogs, where first ovulation is delayed in females who remain in contact with their biological fathers (Hoogland, 1982). Fathers may also delay pubertal timing by guarding their daughters and preventing them from coming into contact with unrelated males or "daughter guarding" (e.g., Flinn, 1988).

Some of the most recent research on the timing of maturation in humans has attempted to evaluate the last two propositions—that fathers delay menarche, and that stepfathers, or unrelated males may accelerate reproductive readiness. Ellis and Garber (2000) attempted to evaluate the effect of stepfather presence on the timing of reproductive maturation in young women. They found that in families where the mother's partner was not the biological father, stepfather presence best accounted for earlier pubertal maturation. From their findings, Ellis and Garber suggest that there are two separate classes of psychosocial stressors effecting age of maturation: interpersonal family stressors and exposure to unrelated males. Where Belsky and colleagues (1991) predicted that divorce would accelerate pubertal maturation because it was a stressful life event, Ellis and Garber found that interacting with stepfathers may represent a different type of psychosocial stressor than divorce. Ellis and Garber's research suggests that divorce accelerates pubertal maturation because of increased exposure to unrelated father figures.

Quinlan (2003) retrospectively examined data on 10,847 US women and found that multiple changes in childhood caretaking (whether by biological or stepmothers or stepfathers) were associated with earlier menarche, earlier first sex, and shorter duration of first marriage. Quinlan's results suggest that it is differences in the amount and intensity of parental care (rather than simply parental investment) that link family environment to the timing of maturation. Interestingly, and contrary to other studies, he did not find differences in age of maturation between young women who lived with their mothers or their fathers. He suggests that previous research on earlier maturation with

stepfathers present might instead be due to reduced care from mothers as they shift investment towards their new mate and less energy is directed towards their offspring. Much of the research on reproductive readiness has found varying results in the factors that seem to contribute most to the timing of reproductive readiness. But what seems clear is that the age of maturation is not strictly dependent on physical (weight and body mass, altitude, and disease) cues, but also extends to psychosocial cues from a woman's early environment.

A life history approach to the timing of reproductive maturity can help us pick apart the complex interplay between physical, psychosocial, and heritable contributions to the age of menarche in human females. Methodologically, age of menarche is a difficult marker to evaluate, because many of the studies on menarche have been retrospective, and women may inaccurately recall the age of their first period. Furthermore, menarche does not necessarily signal fertility, as women sometimes cycle for several years before ovulating regularly (Ellis, 2004; Ellison 2001). However, when considering the risk associated with teen pregnancy, age of menarche—as a marker for obstetrical maturity, is an important measure, since risks appear to be highest for teens who become pregnant within 2 years after menarche (Kramer, 2010).

Teen Pregnancy in Cross-Cultural Context

The teen birth rate is rarely reported for small-scale societies, and the bulk of what is known about the biology and outcomes of teen pregnancy come from studies of the developed world. However, the data that do exist on age at first birth for forager and horticulturalist populations cite the teen birth rate as ranging between 135 to 279 per

1000 women, and average age at first birth ranging between 15.5 years to 20.5 (Kramer & Lancaster, 2010). This birth rate is substantially higher than the high of 43 per 1000 reported in the United States (World Health Organization, 2008), where the average age at first birth is 25.1 years. Traditional populations with little access to healthcare or contraception are much more reflective of our ancestral conditions, and when considered in a cross-cultural context, teen pregnancy appears to be a relatively normative pattern of human childbearing (Dean, 2006).

Teen Pregnancy in a Modern US Context

A life history approach to age of menarche, and to teen pregnancy in particular suggests that earlier ages of reproduction are not the result of deviant, hyper-sexual teens, but may instead represent a facultative response to poverty and or low life expectancy (Wilson & Daly, 1987; Geronimus, 2003; Furstenburg, 2007). That is, a developing young woman faces the question of whether or not to invest further in self-maintenance or to allocate energy to reproduction. Thus, teen pregnancy in developed countries may represent an adaptive response to poverty (Geronimus, 1992). Indeed, studies of interurban black women in the US found that in conditions where adult women are likely to be in poor health or have shorter life expectancies, teen motherhood gives young women the best chance obtaining care from multigenerational caregivers, and increases the likelihood that a young child will both survive and thrive (Geronimus, 1992; Wilson & Daly, 1987).

Furstenburg, a sociologist, who has been studying teen pregnancy and life trajectories of teenaged mothers for over forty years, argues that the causal direction of

the "blame" for teenage pregnancy has been going in the incorrect direction for many years (Furstenburg, 2007). Both Furstenburg and Geronimus, two of the foremost researchers on teen pregnancy, argue that pregnancy is a reaction to environmental instability and poverty. From a policy standpoint these researchers suggest that rather than attacking teens and creating programs to end teen pregnancy—we should instead be targeting poverty and social instability, the real factors which influence young women's likelihood of early reproduction.

Indeed, the majority of the policies in place today encourage teens to abstain from sex, rather than preparing them to make responsible decisions about when and who to have sex with, and how to do it safely (Furstenburg, 2007). What much of Furstenburg's life-long research into teenage childbearing tells us is that, despite what the media and policy makers say, young women who have children in their teen years do not always come out worse off than other young women in poverty. Furstenburg argues that popular accounts of teen pregnancy in the media, and often even in professional writings tend to overstate the long-term costs of teen pregnancy to young mothers and to their children. Although most children born to teenage mothers are generally born into poverty, and most endure spells of economic uncertainty throughout their childhood (Maynard, 1996) young mothers typically finish school, enter the work force and end up doing about as well as mothers in similar economic situations who are not early reproducers. Furstenburg's research with teen moms has found that despite portrayals of teen mothers as generators of problems, teen moms are often responding to indicators of instability, and end up doing better than average, and actually getting out of poverty and debt by the time their children reach childbearing age (Furstenburg, 2007). Transitions, household

changes, illnesses, bouts of extreme poverty, behavioral problems certainly do exist among the children of teen parents, but what is unclear and difficult to determine is how much the timing of the child's birth contributed to these problems. Certainly living in poverty contributes to health risks associated with pregnancy—there is a well-established body of literature that associates low socioeconomic status with low birth weight, preterm birth, as well as higher rates of infant mortality (Brooks-Gunn & Furstenberg, 1986; Geronimus, 1996). But these risks may be associated with the elevated psychosocial stresses of living in poverty.

Why Is Teenage Pregnancy Associated with Adverse Outcomes?

Young maternal age is a significant obstetrical risk factor and is associated with increased rates of anemia, hypertension, neonatal and postnatal mortality as well as other obstetric complications (Geronimus, 1992; Stevens-Simon & White, 1991; Stevens-Simon et al., 2002). Unfortunately, the majority of studies describing the risks associated with adolescent reproduction fail to distinguish between very young mothers, (mothers who birth between ages 13-15) and older teen mothers (those who birth between ages 16-19). The few studies which do differentiate between older and younger teen mothers typically find that mothers who reproduce later in adolescence experience lower levels of risk and have birth outcomes more similar to women in their 20s (Stevens-Simons et al., 2002) and that the greatest biologic risk exist for women who reproduce under 15 years of age (Kramer & Lancaster, 2010). Indeed a very-young and still-growing mother faces the allocation trade-off of investing in her own growth or that of her fetus—and the majority of evidence suggests that mothers are more likely to compromise the growth of

their fetus rather than their own growth. Studies of sheep who become pregnant when they are still growing suggest that incomplete maternal growth is a risk factor because ongoing maternal growth interferes with placentation, permanently restricting fetal growth (Wallace, Da Silva, Aitken, & Cruickshank, 1997). Human mothers who become pregnant within two years of menarche unquestionably experience higher rates of poor pregnancy outcomes (Stevens-Simon et al., 2002).

These higher rates of adverse outcomes likely occur because of a conflict for maternal resources, very young teen mothers are at a significantly higher risk of giving birth to low birth weight and preterm babies. Very young mothers may also face additional obstetric complications because their pelvises have not yet finished growing. Indeed pelvic growth and development lags behind completed growth in females by at least several months (Trevathan, 2010) and young women's pelvises do not reach final adult size and shape until several years after physical growth has been completed (Moerman, 1982). This developmental lag in the pelvic growth may explain elevated rates of cephalopelvic disproportion (CPD)[1] among very young mothers (Trevathan, 2010).

While incomplete growth and competition for resources to assist her own body in completing growing no doubt leads young teen mothers to experience higher rates complications, consensus for the proximate reasons for why or if young mothers are at higher risk has not been reached (Stevens-Simon et al., 2002; Kramer & Lancaster,

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[1] Cephalopelvic disproportion (CPD) is when the pelvic opening is too small to allow the fetus to pass through. CPD may be the result of a small pelvis, a large baby, pelvic anomalies or a combination of these factors. Estimates suggest that true CPD only occurs in 1 out of every 250 pregnancies, although it is often diagnosed as a reason for caesarian birth.

2010). Compared to adults living in similar socioeconomic conditions, teen mothers generally tend to enter pregnancy in better physical condition, have fewer chronic diseases and engage in fewer health-risky behaviors (Geronimus, 1996). Why, then, do teens experience higher rates of pre-term births and other obstetric complications? The data suggest two possibilities as an answer to this question. First, for very young teens pregnancy represents a biologic obstetric risk factor, that is, incomplete physical development impairs their ability to adapt to the physiologic demands of pregnancy. Second, for all teens, young maternal age is likely to be a general marker for demographic characteristics and psychosocial complications associated with increased rates of complications.

It remains difficult, however, to determine whether or not physical development represents an inherent risk factor, or whether young maternal age is associated with psychosocial complications. Perhaps the best attempt at parsing physical and psychosocial risk factors to date is Kramer's (2008) evaluation of early reproduction among the Pumé of Venezuela. Because the Pumé encourage early reproduction, have minimal social stratification, and no prenatal care, Kramer argues that they represent an ideal population to observe the biological costs of early reproduction. Her research evaluates 1) whether early reproduction is constrained by high levels of infant mortality and 2) what the fitness costs are of early reproductive events on lifetime reproductive success. Kramer's research found that girls who become pregnant before age 14 are four times more likely to experience infant or fetal death than girls who are older than 17 at their first pregnancy. However, girls who became pregnant earlier, between the ages of 14-16, had greater lifetime reproductive success than women who delayed reproducing

into their late teens and early 20s. Kramer's study of the Pumé suggests that very early pregnancy and birth (prior to age 14) carries inherent biologic risk factors for the infant, however, these risks do not translate to decreased reproductive success overall for the woman. Early reproduction, then, appears to be a timing tradeoff, dependent upon physical maturity as well as cues of environmental stability and life trajectory.

Giving birth when you are young, dependent and physically immature may not represent a substantial problem if you live in a society, like the Pumé, where there are strong social networks and multiple alloparents to assist with the rearing of your child. But in the United States where the cultural ideal is for two adults to marry and raise their children together, often away from close kin, being a young single mother poses long-term social risks to both the mother and the child. Indeed young urban women are less likely to receive adequate prenatal care (Ventura & Curtin, 1999) are less likely to initiate and sustain breastfeeding (Ryan, Wysong, Martinez, & Simon, 1991), and are less likely to be responsive to their infants (Osofsky, Hann & Peebles, 1993). The children of adolescent parents also face increased risks of substance abuse, behavioral and developmental problems and other adverse social outcomes (Brooks-Gunn & Furstenburg, 1986; Wakschalg & Hans, 2000).

Doula Support and the Social Risks of Teen Pregnancy

As the preceding review suggests, teen pregnancy is likely an adaptive response to poverty, poor health care, and unstable family circumstances. Although doula support may do little to alleviate the biologic risks associated with early teen pregnancy, there is considerable evidence to suggest that doula support mitigates many of the social risk

factors associated with teen pregnancy. Successful motherhood in humans requires not only the physiologic expenditures of pregnancy and lactation but also an extended period of post-weaning support (Hrdy, 1999). While children growing up in traditional societies may receive nearly half their care from non-maternal sources (Kramer, 2005), in many postindustrial societies, child-rearing support networks are sparse to non-existent, and teen parents have small and/or unstable support systems (Kramer & Lancaster, 2010). In the United States, where kin support is fragmented or often unavailable, doulas may provide the social support necessary to increase maternal investment and the likelihood of positive outcomes for teen mothers. Indeed, many of the risks and poor outcomes associated with teenaged childbearing in the United States may be associated with child-rearing practices, biosocial interactions, or low levels of social support. Socially, teens are less likely to be responsive and responsible in their parenting (Nord, Moore, Morrison, Brown, & Myers, 1992; Osofsky et al., 1993) are less likely to take responsibility for their child's health and less likely to initiate breastfeeding (Ryan et al., 1990), all areas that doula have been shown to improve outcomes by providing one on one social support.

CHAPTER IV

DOULAS AS A RESPONSE TO THE MODERN OBSTETRIC LANDSCAPE

The Modern Obstetric Mismatch

Individual women's emotional and physical responses to birth are even more complicated than suggested by chapter two's explication of the evolutionary implications of pelvic dimensions, the conflicting pressures of bipedalism and big brains, and the evolution of obligate midwifery and cooperative breeding. In virtually every culture birth represents a complex interplay between biological function and cultural norms and expectations surrounding the event (Davis-Floyd, 1992; Lozoff, Jordan & Malone, 1988; Jordan, 1993; Sargent & Bascope, 1997). Over the last century in the United States, for example, birth has changed from a woman-centered event that typically occurred at home to a highly medicalized hospital experience (Davis-Floyd, 1992; Wertz & Wertz, 1989). While in 1900 only 5% of women birthed in the hospital, by the 1970s nearly all births occurred in a hospital (Wertz & Wertz, 1989). Today, only 1% of births in the United States occur at home or at birth centers (Block, 2007; Goer, 1999; Wagner, 2006; Wertz & Wertz, 1989).

Oddly, given what modern obstetrics would have us believe today, the move *en masse* to hospital birth in the early-to-mid 1900s did not immediately improve maternal health outcomes; in fact it did quite the opposite. In the early 1900s thousands of

mothers died due to infections from cross-contamination when doctors treated sick patients and then delivered babies without washing their hands (Wertz & Wertz, 1989). Maternal sepsis, otherwise known as "childbed fever" ran rampant through hospitals, and maternal and fetal mortality reached levels far higher than out of hospital births (Wertz & Wertz, 1989). The shift from home birth attended by midwives to physician-attended birth in the hospital led to a suite of changes in the way birth happened, as well as dramatic cultural changes in perceptions about birth (Davis-Floyd, 1991). Some of the most significant changes surrounding birth were the restriction of birthing positions to those that favored the attending physician, routine preparations for birth (shaving and enemas), increased use of pain medication and sedation, and a notable decrease in social support during labor and delivery by individuals well acquainted with the mother (Davis-Floyd, 1991). The isolation and focus upon pain relief in the hospital led to the collapse of many of the mechanisms for emotional and physical support traditionally offered to the laboring woman. Further, women who would have been likely providers of support throughout much of our evolutionary history, such as the laboring woman's mother and grandmother, were less helpful as generations of women experienced birth while they were heavily sedated or unconscious. Thus, many older women may feel incapable of reassuring the laboring woman that what she is experiencing is normal because they were rendered "absent" from the birth of their own children. Indeed, by the time public outcry regarding the rates of unnecessary procedures and isolation of laboring women began to change birth in the late 1970s and early 1980s, the practice of having an experienced woman provide support during labor had all but disappeared (Campbell, Lake, Falk, & Backstrand, 2006).

Current Birth Practices in the United States

In the United States today roughly 80% of women give birth under the care of an obstetrician, a specialist whose expertise lies in surgical deliveries and complications of pregnancy and birth (Listening to Mothers II (LTMII), 2006). Although numerous studies have show out-of-hospital birth to be an as-safe or safer option for women with low-risk pregnancies (Cheyney, 2005; Janssen et al., 2009; Johnson & Daviss, 2005), the majority of women in the United States opt to birth under the care of surgical specialists. The most recent data available for 2008 show that while the birth rate in the US decreased by 2%, the caesarian rate increased for the 12th year in a row (Ventura, Abma& Mosher, 2008). Nearly one in three women in the US give birth by caesarian section—32.3% in 2008—and many experts argue that the high rate of complications resulting from surgical births in the US is to blame for high rates of maternal mortality. Indeed, despite the fact that the United States spends more on maternity care than any other country in the world, we rank 29th in maternal mortality, falling behind countries like Slovakia and Kuwait (WHO Statistics, 2007). While a caesarian birth can undoubtedly be a life-saving operation for both mothers and babies, the high rate of maternal deaths following caesarians and interventive hospital births suggests that we are doing something very wrong in the care that we provide to birthing women in the US.

The World Health Organization recommends a caesarian rate between 10-15% and suggests that countries that fall above or below these rates will experience higher rates of maternal and infant mortality and other complications. Indeed caesarians carry heightened risks of maternal morbidity and mortality—mothers who have c-sections experience higher rates of infection, hemorrhage, blood transfusions, hysterectomy,

admission to intensive care, damage to other organs (Villar et al., 2005). Long-term complications, as well as complications with future pregnancies are also emerging: these include, abnormal placentation following a caesarian (Serena, 2005), increased rates of ectopic pregnancy, as well as emotional difficulties (Clements, 2001) including postpartum depression, and depressive feelings about personal control (Minkoff & Chervenak, 2003). Higher rates of caesarian section also carry risks for infants such as iatrogenic prematurity (Wagner, 2006), laceration from the incision (Smith, 1997), and higher rates of neonatal respiratory problems (Madar, Richmond & Hey, 1999). Among 1,573 women who participated in the Listening to Mothers survey (2006), 80% of women who gave birth by caesarian section reported incision pain, and 31% reported bowel problems and or issues of incontinence.

How did we get to a place where nearly one in three women give birth through an incision in their abdomens? Throughout our evolutionary history, birth represented a powerful selective factor; if a woman or her infant was unable to survive birth, her genes were not present in the next generation. Human infants and pelvises are shaped by millions of years of evolution and successful birth. Certainly human birth is difficult, but not impossible for one in three women. Most experts agree that the ever-increasing rates of caesarian in the US and around the world can likely be attributed to the medicalized way we give birth, and to the litigious nature of the US health care system. In the following section, I detail some of the interventions that may be associated with and increase in negative outcomes, and where doulas may impact maternal choices both prenatally and in the postpartum.

Routine Induction, Active Management, and Pain Medication

Although full term for a human infant ranges between 37-42 weeks of pregnancy, it is becoming increasingly common for women to be induced at or before 40 completed weeks of pregnancy. Inducing on or before 41 weeks is considered standard procedure across North America (Block, 2007), and certainly has been the protocol among the care providers I have worked with. Yet, without intervention, most first time mothers give birth an average of 8 days after their expected due date (Mittendorf, Williams, Berkey, Cotter, 1990). This fact suggests that women are being induced before their babies are ready to be born (Wagner, 2006). Among women who participated in the Listening to Mother's survey in 2006, 41% were medically induced in a hospital setting, and 22% attempted self-induction techniques (self induction may include: nipple stimulation, orgasm, walking or other techniques which sometimes stimulate labor). While self-induction typically does not work if a woman and her baby are not ready to go into labor, medical induction is often ordered by a care provider because a woman is at or beyond her estimated due date, the baby is believed to be too big, or because of low amniotic fluid levels in the mother (which may indicate that the placenta is becoming less efficient) (Raburn & Zang, 2002). Although the mechanisms that trigger labor in humans are not well understood, women who are medically induced experience nearly double the rate of caesarian section as mothers who begin labor spontaneously (Vrouenraets et al., 2005).

Even if a woman's labor does start on its own, active management of labor and birth is the norm in the US. A 2006 paper in the *New England Journal of Medicine* which evaluated 5500 low-risk, first time mothers found that 70% of laboring mothers in

their sample received pitocin[2], a drug used to increase the strength and frequency of contractions during labor (Bloom et al., 2006). Although pitocin can be a useful tool in some labors, pitocin is most commonly used to speed up labors that are not progressing according to providers' desires. A complication of pitocin is that it fails to cross the blood-brain barrier—and does not elicit the euphoric feelings generated by oxytocin in labor (Odent, 1999). Women who have experienced both oxytocin- and pitocin-induced contractions describe pitocin contractions as the most painful they have experienced. When a woman is given pitocin, it significantly increases the likelihood that she will receive other interventions. Because pitocin contractions are uncharacteristically painful, women are more likely to receive narcotic and epidural pain medication, as well as a suite of other interventions.

In the United States nearly 75% of women receive some form of pain medication during labor (LTM II, 2006) with some areas experiencing higher rates. By far the most common and popular form of pain relief in the US is epidural anesthesia. With an epidural, anesthetic is continuously delivered via a thin catheter to the dural space in the spine. If inserted successfully, epidural pain medication provides nearly complete pain relief to the mother, numbing her from the top of her belly to her toes. Depending upon the anestiesologist, dose, and insertion, some women are able to move their legs, however, the majority of women with an epidural are unable to move their body. Although epidurals provide remarkable pain relief, they require that the woman lie in bed, and thus, often lead to a decrease in the rate of contractions that may necessitate

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[2] Pitocin is the trade name for the synthetic form of Oxytocin. Oxytocin is a naturally occurring hormone in the body associated with love, bonding, uterine contractions, labor and social support.

Pitocin augmentation and a range of additional interventions (Goer, 1999). Indeed, with the brain no longer receiving signals of both pain and euphoria induced by oxytocin-stimulated contractions, contractions typically decrease when an epidural is placed. Women are also confined to bed, must be continuously monitored, and receive a urinary catheter, and typically internal contraction monitoring as well as internal fetal monitoring with epidural pain medication. Although epidurals can be an excellent tool for an exhausted mother, for someone who is unable to relax, or who is not coping well with pain, their routine use, may contribute to higher rates of infant malpresentation, ineffective pushing, and other complications that can potentially lead to instrumental deliveries or caesarian sections (Anim-Somnah, Smyth, & Howell, 1997; Crawford, 1985; Fogel, Shyken, Leighton, Mormol & Smeltzer, 1998).

The other available form of pain medication in labor is an IV narcotic. Narcotic pain medication is delivered through the woman's IV port, typically in her arm, and lasts between one to two hours. In most hospitals, IV pain medication also requires continuous monitoring, and at least a temporary period of confinement to bed, as there is a risk of falling after receiving narcotics. Because narcotic pain medication is administered through an IV, and goes into the mother's bloodstream, it also reaches the baby, and is contraindicated if birth is considered imminent, because of potentially compromising the baby's ability to breathe and successfully transition to the extra-uterine environment .

In addition to sometimes slowing labor and interfering with pushing, epidurals and medicated deliveries make instrumental deliveries and episiotomies more likely (Goer, 1999). Medical providers may use either forceps or a vacuum extractor to pull a

baby out of the birth canal. An episiotomy is a cut made by the provider several centimeters into the perineum at a 45-degree angle away from the anus, which expands the vaginal opening. From the 1920s until 1993 episiotomies were routine, touted as an alternative to tearing, however, now episiotomies are contraindicated unless there is a need to get the baby out quickly, or unless there is an instrumental delivery and the provider needs additional space (Block, 2007). However, some providers still routinely perform episiotomies despite an abundance of research showing that they cause more harm than good. Indeed there is a solid body of research suggesting that routine episiotomies actually lead to more significant tearing than when a woman's tissues are allowed to stretch and or tear on their own.

The majority of women who birth in the United States receive multiple forms of interventions during labor and birth (LTM II, 2006). While some interventions undoubtedly lead to better outcomes for mothers and babies, routine interventions may function to increase the rates of complications and caesarian sections for otherwise low-risk mothers (Goer, 1999). Highly interventive hospital births have also created a complex and unfamiliar landscape of people, procedures, protocols, and terminology, which are difficult for laboring women and their families to negotiate. Although the vast majority of women in the United States choose to birth in the company of strangers, many women report that continuous support was crucial during their labor and birth of their baby (Campero et al., 1998). Continuous, familiar support is not available by over-worked nurses and doctors who change shifts on a regular schedule.

Birth in Pre-Industrial Societies

In societies where birth is not a highly medicalized event, systems of support for mothers prenatally, during labor, and in the postpartum are typically provided by a woman's mother and other close female relatives. Or, if a woman is living with her husband's family, with assistance from his female relatives. Even among the !Kung, who have a cultural ideal of an unassisted birth, first births, in particular, are attended by at least one older, experienced woman to ensure safety for both the mother and child (Shostak, 1981). A recent cross-cultural description of the patterns of human birth suggests that although the cultural prescriptions surrounding birth varied, around the world, there are a number of practices that occurred uniformly across cultures (Davis-Floyd & Cheyney, 2009). Davis-Floyd and Cheyney argue that cross-culturally, women were able and encouraged to move throughout labor; eat and drink as they felt appropriate; were attended by other women, experienced in childbirth who they both knew and trusted; they birthed in a familiar location—usually at home; they birthed in an upright position; and infants maintained contact with their mothers for warmth and nutrition. Today, not one of these cross-cultural aspects of birth in pre-industrial societies characterizes medicalized birth in the United States.

What Is a Doula?

To fill the need for continuous, familiar support women are increasingly turning to doulas, or professional labor support persons, for assistance during the birth of their babies. The word doula (pronounced /doo-la/) is of Greek origin, and is loosely

translated as “woman servant,” “slave,” or “female helper” (Gurevich, 2003). The word doula was first applied to labor support persons in 1973 when medical anthropologist Dana Raphael wrote about the importance of mothering the mother during the postpartum period to achieve better breastfeeding results. Raphael describes:

> We use the term ‘doula’ as a title for those individuals who surround, interact with, and aid the mother at any time within the perinatal period, which includes pregnancy, birth and lactation. The function of the doula varies in different cultures for a little help here and there to complete succoring, including bathing, cooking, carrying and feeding. Whatever the doula does, however, is less important than the fact that she is there. Here very presence gives the mother a better chance of remaining calm and nursing her baby. In areas such as the United States, where new mothers are often isolated from their kin, the doula’s help is crucial if the mother wants to breastfeed. Her care and handling could save the day. Her presence could save the mother’s milk. (Raphael, 1973, p. 41).

In the late 1970s and early 1980s, Raphael’s description of doulas was moved out of the anthropological realm and into the medical, and the word doula gradually came to be used to describe women who provided a laboring woman and her husband or partner with emotional and physical support throughout labor, and delivery, and, sometimes, during the postpartum. Thus a supportive role that has existed throughout the centuries was transformed from an intimate familial realm to the realm of hired help. Although “doulas” have likely accompanied women as they gave birth throughout our evolutionary history, they reappeared in the modern, hospital context as fathers were allowed to re-

enter the delivery rooms in the 1970s and women began informally bringing their childbirth instructors and friends as additional support. Doulas in their current permutation, with professional certifying organizations began to appear in the 1980s and 1990s.

Doulas are typically divided into two categories, birth and postpartum doulas. Birth doulas provide support prenatally and during labor and birth, and postpartum doulas provide support for mother and family during the postpartum period. In this dissertation I focus specifically on research and implications of support from birth doulas, and when referring to a doula, I am referring to a labor and birth doula. A doula is a non-medical birth professional that supports and advocates for the laboring woman and her family. As described by Doulas of North America (DONA) International, the largest doula certifying organization, the role of a doula is to provide continuous physical, emotional, and informational support throughout the entirety of a woman's labor, and to help the woman have a "safe and satisfying birth as the woman defines it" (DONA position paper, 1998). A doula does not provide any medical interventions, nor does she replace the father. Depending on the woman's desires for her birth as well as her progression during labor, doulas may provide massage, counter-pressure, acupressure, verbal encouragement, information on various procedures and medications, and encourage position changes during labor and pushing (Gurevich, 2003).

In 1998 roughly 1% of women giving birth in the United States were accompanied by a doula, however, by 2002 this number had jumped to over 5% of the birthing population (Lantz, Low, Sanjai, & Roby, 2005) and continues to grow. DONA International, one of three largest certifying organizations, currently has a membership of

7,000 doulas.

Doula care can begin anytime during pregnancy, though most doulas meet with their clients between 2-4 times prenatally, provide support for the duration of labor, and check in again once or twice in the postpartum period. Prenatal meetings between the doula and client typically involve in-depth discussions and exercises with the mother to encourage her to think about her hopes, desires and fears about the upcoming birth and to clarify the doulas role for supporting the woman and her partner.

Although many doulas express philosophical leanings similar to midwives, as advocates for natural birth practices, they have a distinctly different role at labors and births. Unlike midwives or obstetricians, doulas are non-medical birth professionals; they do not perform cervical exams, blood pressure checks, or monitor the baby's heart tones—they have no clinical responsibilities. Instead, the doula's sole task is to support and advocate for the laboring mother and her family throughout labor and directly following the birth of the baby. Doulas do not replace the father or other support persons, and may function to provide informational support and relief for the woman's family and support system.

One of the cornerstones of doula care is to ensure client awareness of all options for birth. Part of this standard of care entails informing women about the different options that they have for prenatal care, as well as support during labor and birth. Often doulas will know about protocols and procedures at different hospitals and even have insight into what type of a care provider a particular doctor might be. Indeed, if a woman's desires are for a natural birth and she is receiving care from a highly

interventive provider, her doula may encourage her to ask questions, and or change providers to one more in line with her beliefs about labor and birth.

Although certification is not required to practice, most doulas in the United States are trained and or certified through one of three national certification organizations, Doulas of North American (DONA), Association of Labor Assistants and Childbirth Educators (ALACE), and Childbirth and Postpartum Professional Association (CAPPA). Most certification programs involve a 3-4 day to a week-long workshop, including additional training in prenatal education, breastfeeding, or infant care. Additionally, before a woman can apply for certification, programs generally require the attendance of between three to six births as the primary labor support person (Gurevich, 2003) as well as assessment by the mother, nurse and the midwife or obstetrician (Meyer, Arnold, Pascali-Bonaro, 2001).

Demographics and Constraints of Doula Work

Few studies provide information demographic information about doulas, their beliefs about birth, the challenges they face, and their economic situation. In a mailed survey sent to 1000 certified and uncertified doulas in the United States, Lantz and colleagues (2005) explored some of these questions. A total of 626 individuals returned the surveys and provided information for the study. The doulas in their sample were all women: predominantly Caucasian (94%), with African American (3%), and Hispanic (2%) women making up only 5% of their respondents. Doulas were typically married (82%) with children of their own (88%), and the average age of respondents was 40.3 years, although the women ranged from 20 to 71 years old. The doulas were a well-

educated group of women, with half reporting a college degree or higher for level of education, and 20% credentialed also as a nurse or midwife. 96% of doulas rated their work as personally and emotionally satisfying, however only about a 34% of them ranked their work as financially rewarding (Lantz et al., 1995). Indeed, although doulas may find their work personally fulfilling, doula work is difficult to maintain while also holding down another job or with small children in the house. Doulas identified balancing their family life with the time and emotional demands of the job as one of the primary challenges, alongside the difficulty of receiving respect and support from medical care providers. Indeed, it appears that the barriers to doing doula work, demands of an unpredictable schedule, low financial rewards mean that the role is more often than not filled by middle-class, well-educated white women who have support from their families to do doula work. This dynamic raises interesting questions for groups such as Doulas Supporting Teens (DST), and others that specifically target higher-risk populations from diverse backgrounds. As I discuss later in this dissertation, this mis-match between the social class of the doula and the women that they serve is one of the reasons that DST encourages and facilitates teen mothers receiving training so that they can offer doula support to their peers.

Research on Doula Support

The continuous presence and support provided by a doula offers a different type of care than almost any other provider. In a busy hospital environment physicians and even hospital-based midwives are not able to provide continuous supportive care (Meyer et al., 2001). Thus, doulas seemingly fill an important mismatch between the conditions

women evolved to give birth in and the conditions where most women labor in the hospital in the United States today.

Since the 1980s there have been numerous, randomized, controlled trials evaluating the effects of doula support on birth outcomes for both mothers and babies (Sosa et al., 1980; Klaus, Kennell, Robertson, & Sosa, 1986; Kennell, Klaus, McGrath, Robertson, & Hinkley, 1991; Gordon et al., 1999). This section presents a historical approach to doula research, highlighting some of the earliest and most seminal research on doula support followed by key studies that demonstrate specific situations where support had significant impacts, or where impacts in obstetric outcomes failed to be seen. In general, the benefits of the continuous support of a doula seem to be most dramatic in hospitals were rates of intervention are high, women have relatively low levels of support, and doula support is not provided by clinicians or hospital staff.

Sosa et al. (1980) performed the first study on "doula" support in a Guatemalan hospital where women typically labored in a ward-type setting and birthed alone. The researchers were not intending to study doulas as labor support people per se; rather they were there attempting to assess mother-infant interactions in the direct postpartum period. However, over the course of the study, the researchers found such significant differences in the rates of complications between their experimental and control groups, that they became interested in what the woman in the room was doing simply by being there. For example, in order for Sosa et al. to obtain a matched sample of 20 women in both the experimental and control group with uncomplicated deliveries, they had to enroll 103 mothers into the control group, whereas only 32 women were admitted to the experimental group. Put another way, they had to enroll an additional 83 women to the

control group, and only 13 into the experimental group in order to get 20 uncomplicated deliveries. In the absence of doulas, mothers in the control group were excluded for meconium staining, stillbirth, caesarian section, oxytocin augmentation, and forceps deliveries. In addition to decreasing labor complications, the researchers also found that the presence of a doula reduced the length of labor by over half (8.8 hours with support vs. 19.3 without), increased maternal alertness following birth, and led to higher rates of positive mother-infant interactions. The mothers in both the control and experimental groups were of similar ages, socioeconomic backgrounds and marital arrangements.

Additional early studies of the effects of doula support on complications and rates of medical interventions found similar results. In another Guatemalan hospital study Klaus et al. (1986) studied the outcomes of 168 women who received doula support and 249 labored without doula assistance. Klaus et al. (1986) found that doula support significantly decreased rates of caesarians compared with non-doula supported births (7% vs. 17%). They also found that doula support decreased the need for oxytocin augmentation to increase contractions (2% vs. 13%), while decreasing the length of labor and the likelihood that the infant would be admitted to the neonatal intensive care unit (Klaus et al., 1986).

While the results from both of these studies are unquestionably remarkable, the conditions in Guatemalan hospitals differ significantly from most Western settings. In table 4.1, I summarize the outcomes of 5 North American studies of doula support, with regard to how doula support impacts various obstetric, as well as maternal and fetal outcomes.

Table 4.1. Outcomes of Labor Support from Selected Studies in North America*

Author, Year, (# of Subjects)	*Caesarian Rate*	*Oxytocin Use*	*Epidural Rate*	*Narcotics Use*	*Instrumental Delivery*	*Maternal Emotional Distress*	*APGAR NICU***
Hodnett 1989 (103)	No Difference	Increase	Not Assessed	Decrease	No Difference	Not Assessed	Not Assessed
Kennell, 1991 (616)	Decrease	Decrease	Decrease	No Difference	Decrease	Not Assessed	Decrease
Gordon, 1999, (314)	No Difference	No Difference	Decrease	No Difference	No Difference	Decrease	Not Assessed
McGrath, 1998, (513)	Decrease	Decrease	Decrease	Decrease	No Difference	Not Assessed	Not Assessed
Hans, 2005, (248)	No Difference	No Difference	No Difference	No Difference	No Difference	Decrease	No Difference

- * Adapted from DONA's position paper, 1998
- ** Apgar is a score infants receive at birth summarizing successful transition.
- NICU the abbreviation for the neonatal intensive care unit.

Following Sosa et al. (1980), and Klaus et al.'s (1986) pioneering work on doula support in Guatemala, Hodnett and Osborne (1989) evaluated the effects of labor support on 113 women, 49 with doula support and 54 without in a teaching hospital in Toronto, Canada. Although not as dramatic, their results followed the patterns present in the Guatemalan studies. Women supported during labor arrived at the hospital at a more advanced stage of labor, and were half as likely to use medication as the control group. Mothers with montrice support—similar to a doula but authorized to do clinical procedures such as checking cervical dilation and the baby's heart tones—were less likely to push their babies out using stirrups and to experience perineal tearing. However, in contrast to the Guatemalan studies, this study did not find a reduction in caesarian

sections or in the frequency of instrumental deliveries (Hodnett & Osborne, 1989). Some researchers have suggested that the additional clinical duties associated with montrice support, led to less dramatic outcomes, similar to outcomes when labor support is provided by nurses (Hodnett et al., 2002). Further, this trial has been critiqued for the fact that the montrices were midwifery students who may have generated competition and or conflict between physicians and support persons ultimately leading to a decrease in effectiveness. Indeed, a high attrition rate was reported for experimental participants, in part because of conflicts between care providers.

Kennell et al. (1991) performed an evaluation of continuous labor support in a hospital in Houston, Texas that predominantly provides care for low-income Hispanic, black, and white populations. Kennell and colleagues looked at birth outcomes for over 600 women who were randomly assigned into one of three categories: 212 received doula support, 200 simply had an observer in the room during labor, and 200 were in a control group without a doula or an outside observer. Women without continuous support during labor had twice as many caesarians as did the labor supported group, while the rate of epidural anesthesia use was 7 times lower among supported women than among unsupported women. Oxytocin augmentation used to speed up labor as well as length of infant hospital stays following birth followed similar patterns. Interestingly there were significant decreases in interventions for the observed group as well. Rates of caesarian and interventions were not decreased as significantly as in the supported group, but the fact that their rates decreased as well has led some to speculate that the effect of doulas may in part be due to having an informed observer present in the room (Cheyney, 2006 personal communication; Kennell et al., 1991; Richards, 1992).

Gordon et al. (1999) evaluated the effects of hospital-based doulas in Health Maintenance Organization (HMO) hospitals in Northern California. They collected data on 149 women who birthed with the support of a doula, and 165 who had usual care. Consent to participate was obtained prenatally, but assignment to a doula was made at the time of hospital admission, and the participant and doula had never met before. The study evaluated procedures and pain medications, and found that women laboring with the support of a doula were significantly less likely to have received pain medication in the form of an epidural (doula 54.4% vs. no doula 66.1%, p=.047); however the support of a doula did not have an effect in terms of the rate of caesarian deliveries (doula 16.8% vs. no doula 15.8%). Notably these caesarian rates (between 16-17%) are just a couple of points above the current recommendation for optimal caesarian rates by the World Health Organization (WHO) which recommends a c-section rate of no more than 15%. The strongest effects of doula support found in this study were mothers evaluations of the birth experience—mothers who were supported by a doula were significantly more likely to feel like they coped very well with labor, and that they had a good birth experience overall. Additionally, women with doula support felt that labor positively impacted their feelings of being a woman and increased positive feelings about their body's physical strengths and performances (Gordon et al., 1999). The authors spend some time in their discussion addressing the fact that there were not more substantial differences in the rate of caesarian section or operative vaginal deliveries, oxytocin use or analgesic use. The authors speculate that the absence of differences found with doula support in this sample could be the result of the study population coming from a higher income bracket, higher rates of prenatal education, and the fact that most participants were supported by at least

one or more than one support person. Another important distinction between this study and other evaluations of hospital-based doula services is that this study called the doula when "needed" whereas other evaluations of the efficacy of doula support the doulas have been assigned as the laboring woman is admitted into the labor and delivery ward. In this particular study women may have already received pain medication or an epidural before the doula arrived.

There has been much speculation regarding which factors are linked to the positive outcomes typically associated with doula support—some studies such as Gordon et al. (1999) have suggested that the significance of the findings may have been because most studies have occurred with women who labored alone or in ward-type settings, or who were of low socioeconomic status. In 2008, McGrath and Kennell published a randomized controlled trial of continuous support for middle-class couples specifically designed to address this question. Participants were recruited through childbirth classes in the third trimester of an uncomplicated first pregnancy. 420 women met enrollment criteria, and 224 were randomly assigned to the intervention group, and were assigned a doula upon arrival at hospital admission. Women in this sample were between 18-41 years of age, planned to have their male partner there to support them during labor, and were receiving care from a private obstetrician. Doulas were previously unknown to the couple and remained with them throughout labor and delivery. Support by doulas included eye contact, teaching, reassurance, encouragement of the woman and her partner, physical support and touch. The researchers found that the caesarian rate was significantly lower for women in the doula group (13.4%) as opposed to the control group (25.0%; p=0.002). Additionally, among those women whose labors were induced,

the control group experienced a caesarian rate of 58.8% whereas those supported by a doula had a caesarian rate of 12.5% (p=0.007). The epidural rate between the control and doula supported groups differed significantly as well. 64.8% of doula supported mothers received epidural analgesia contrasted with women in the control group at 76.4% (p=0.008). Among the middle class couples in this sample, doulas had a positive effect on rates of epidural anesthesia and caesarian births, suggesting that socioeconomic status may not impact the effectiveness of continuous support on birth outcomes (McGrath & Kennell, 2008).

The most intensive, longitudinal, study of community-based doula support was performed through the Chicago Doula Project (CDP) (Hans, 2005). Beginning in 2000 and running through 2005, the CDP was designed to evaluate doula support as an intervention for young, low-income mothers and their infants. The project set out to: 1) evaluate the efficacy of a model of doula intervention that extended into both the prenatal and postpartum periods; 2) follow mothers longitudinally to assess the long-term benefits of doula support on mothers and infants; and 3) assess physiological, programmatic, and contextual factors that impacted the implementation and efficacy of the program (Hans, 2005). 248 women under the age of 21 were recruited for the project, 124 women to both the experimental and control groups. Women in the experimental sample, who received doula support, were assigned to a doula that had been a teen mother herself and who was currently living in her neighborhood. The doula-supported teens were provided with prenatal and postpartum home visiting, continuous support during labor, as well as postpartum breastfeeding support. The majority of the participants in the program were African American (over 96%) and over 80% of the participants were on Medicaid. This

longitudinal project aimed to look not only at birth outcomes, but also at how doulas impacted parenting philosophies, maternal stress levels, child behavior and breastfeeding rates.

Although the majority of studies on doula support have shown an array of positive effects on both medical and psychosocial birth outcomes, the results of CDP we less straightforward. Despite reports of significant results on rates of caesarian and other outcomes, mid-way through the project, upon completion researchers found no evidence that the doulas had an impact on obstetric outcomes, length of labor, use of oxytocin, or rates of surgical delivery (Hans, 2005). There was a trend towards doula-supported mothers using less epidural anesthesia, however, this was not a statistically significant difference between the two groups. There were no significant differences between the groups in terms of improved outcomes for the newborns—no difference in birth weight, NICU stay, Apgar[3] score, or preterm birth. Maternal stress was measured through cortisol samples taken once prenatally, once antepartum[4], and during each of the follow-up assessments at 4, 12, and 24 months. There was no difference found between doula support and non-supported mothers in terms of cortisol levels, except for at the 12 month visit—a positive impact they interpreted with reservation. The researchers did, however, find significant differences between the two groups in terms of maternal experience. Mothers who had a doula reported greater agency when describing their birth experience,

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[3] The Apgar score is named for Virginia Apgar, and anesthesiologist who developed this score as a means by which to summarily assess the wellbeing of an infant after birth. The score ranges from 0-10, and is based on appearance, pulse, grimace, activity and respiration.

[4] Antepartum was defined as at some point prior to the participant giving birth.

and they spoke of feeling better supported in labor and delivery. Mothers in the doula supported group also had a substantially higher breastfeeding initiation rate, but this higher initiation rate did not translate to higher breastfeeding rates overall.

The lack of significant differences in terms of birth outcomes between the doula supported and non-supported groups for the CDP was speculated to be the result of aggressive active management of labor practiced in the hospitals where participants gave birth. Mothers in the study were routinely given an IV, subject to continuous monitoring, and labors were routinely augmented. The small size of the labor rooms at the hospitals also may have prohibited mothers from walking or standing during labor and epidural anesthesia was offered and encouraged by medical staff to all mothers.

Compared to other studies of doula support in low-income mothers where the most dramatic differences in outcomes have been found, it was surprising that the CDP did not find any impact of support on obstetric outcomes. However, the CDP raises the important issue of considering hospital "culture" when evaluating birth outcomes, and rates of intervention. Although doula support has been found to impact birth outcomes, when hospitals and providers at a particular practice employ active management of labor, one might expect to see less impact in terms of positive health outcomes and decreased interventions. The lack of impact of doula support in the CDP may also speak to the amount of psychosocial stress present in these young mother's lives. Indeed, it may be that their stress levels and the institutionalized racism present in the hospitals may have made the impact of doula support negligible in relation to other stressors.

Support by Lay Doulas and Friends

When placing labor support in an evolutionary context, a logical question is whether or not friends, family members and fathers have similar effects as the support of a doula. A 2006 study in New Jersey compared the effectiveness of "lay" doulas, friends and family of the laboring women, who were trained in labor support techniques, relative to women whose support persons did not receive training. The study found that a four-hour training session in traditional labor support techniques decreased the length of labor by about an hour for women whose family member or friend received doula training and increased the cervical dilation by approximately one centimeter at the time of epidural anesthetic (Campbell et al., 2006). Training in labor support had positive effects on infant outcomes as well—infants of women whose support received additional training had higher Apgar scores at both 1 and 5 minutes (Campbell et al., 2006). While the results did not reach significance for type of anesthetic or rates of caesarian section, the trend was towards lower caesarian rates in the "lay" doula supported group (Campbell et al., 2006).

Support by Fathers

While lay doulas were found to impact length of labor and infant outcomes, similar results have not been found for labor support provided by partners. In a study comparing the effects of support for women laboring with a male partner, and for women with both a male partner and a doula present, Kennell et al. (1991) found that caesarian deliveries were performed on 22.5% of births attended only by the male partner, while caesarians were performed on only 14% of those supported by both a father and a doula.

Indeed, observational studies have found that fathers and doulas fill different roles during the birth. The presence of a doula who can offer suggestions for ways a father can help, and encourage his active involvement in the birth may lead the father to be more involved and more supportive than when the father is the sole support person (Bertsch, Nagashima-Whalcn, Dykcman, Kennell, & McGrath, 1990).

Since fathers provide support for four out of five laboring women in the United States, Bertsch et al. (1990) performed an observational, comparative study between couples supported by a doula, and couples who labored without doula support. By coding 1-hour blocks both in early and late labor they analyzed father's presence and activities in supporting their laboring partner. In the 14 couples that labored without doula support, Bertsch et al. (1990) found that fathers supporting their partner alone performed significantly fewer supportive actions during the later and more intense portions of labor. Fathers were found to provide significantly more physical support during early labor, but less physical support and more verbal support during late labor, when women often report desiring the most support and assistance. Fathers behaved significantly differently from doulas on all measures—they were more physically distant from laboring mothers, and touched their partners significantly less than doulas did. All of the women who received the support of a doula in the study indicated that they would have a doula again for their next birth. Despite the difference in terms of level of involvement and support measures, the women in the study indicated that the father's participation was deeply important to them, and that it functioned to strengthen their relationship. Thus, it seems that while doulas function to improve outcomes for women and their partners, they also function to make fathers more involved, which has the potential to positively impact the mother's

perceptions of his levels of investment and commitment, and strengthen their relationship and bond during the birth of their baby.

Support by Nurses

Support by nurses given special training in labor support also failed to produce significant improvement in maternal and fetal outcomes. Two randomized trials compared birth outcomes of women attended by nurses specially trained to provide labor support, and outcomes for women who received standard nursing care (Gagnon, Waghorn, & Covell, 1997; Hodnett et al., 2002). The nurses trained in supportive labor techniques were given instructions on how to comfort women both emotionally and physically and on how to assist with relaxation and coping techniques, as well as providing support for the woman's partner. Although the roles of support and advocacy were similar to many of the techniques used by doulas, nurse support had no significant effect on the duration of labor, use of epidural anesthesia, perineal tearing, mode of delivery, newborn health, women's perceptions of control during childbirth, postpartum complications, or postpartum depression. The nurses did function to significantly reduce the use of pitocin and continuous external fetal monitoring. The fact that nurse support is not associated with the same sorts of positive outcomes as is doula support has led researchers to speculate that nurses may not be effective providers of labor support because so much of their job involves monitoring and charting the laboring woman's progress and because she is not independent of the hospital (Hodnett et al., 2002). Indeed studies of nurse care have found that labor nurses in some institutions spend as little as 6.1% of their time performing supportive care for laboring women in their care (Gagnon

& Waghorn, 1996; McNiven, Hodnett & O'Brien-Pallas, 1992), and nurses are often assigned to two patients simultaneously. Thus it is possible that the structure and demands of a nurse's job make a nurse unable to provide the kind of continuous labor support that seems to affect birth outcomes and mode of delivery.

Why Do Doulas Impact Birth Outcomes?

The goal of this dissertation was to gain understanding into why doulas have such significant impacts on birth outcomes. Throughout our evolutionary history, women have been supported by their mothers, grandmothers and other close kin as they gave birth, the presence of these individuals likely not only improved outcomes for mothers and children, but signaled to mothers that adequate levels of support were available to successfully raise their offspring to adulthood. Birth for the majority of women in the United States today is a medical event, where strangers care for women—and hospital protocols and procedures are unfamiliar and strange-making. My thesis is that doulas provide the cues of support and assistance that were once provided by close kin—and help improve both immediate and postpartum outcomes by increasing the likelihood that mothers believe that there is adequate support to raise their offspring successfully.

Most proximate explanations for the impacts of doulas have focused on stress reduction, suggesting that doulas mitigate the release of stress hormones, or catecholamines, in labor by reducing maternal stress levels (Campbell et al., 2006; Klaus et al., 1986). While the sympathetic nervous system produces stress hormones, the parasympathetic system regulates the release of the hormones oxytocin and endorphins (Klaus, Kennell, & Klaus, 2002; Simpkin & Ancheta, 2000). Oxytocin stimulates uterine

contractions, and endorphins help lessen labor pains. Catecholamines (epinephrine and norepenephrine,) are released when a woman experiences pain, fear and stress during labor. Research has found that the smooth muscle cells of the uterus have both alpha and beta adrenic receptors in the uterine muscles (Alehagen, Wijma, Lundberg, & Wijma, 2005). Stimulation of the alpha receptors, which are activated by the production of oxytocin, cause the uterus to contract, whereas stimulation of the beta receptors, stimulated by epinephrine, causes the muscles in the uterus to relax (Lipschitz, Crowley, & Bealer, 1993). Thus, fear or stress in labor may cause the release of epinephrine or adrenaline during labor causes contractions to lessen. Researches on both humans and other animals have found that increased stress levels are associated with a decrease in uterine contractions, longer labors and slower dilation rates (Lederman et al., 1985; Lieberman, 1992).

Other models have suggested that doulas have an observer effect—that is women with a doula in the room, even if she does nothing but sit in the corner—receive better care from hospital staff. Support for this perspective comes in particular from Sosa et al.'s (1980) original study on doula support as well Kennell et al. (1991) that found a significant impact of simply having an observer in the room, who sat in the corner and did not provide any supportive care.

Despite a good deal of speculation, however, few studies have evaluated how mothers believe that having a doula impacted their birth outcomes, or how this changed the way that they prepared or advocated for themselves during labor and birth. The current project looks at both the qualitative and quantitative outcomes and perceptions of teen mothers who received support from a doula for the birth of their baby. The goal of

this research was to gain insight into teen mother's perceptions of how having a doula impacted their experiences giving birth, how it impacted the way that they prepared for labor and birth, and how the presence of a doula impacted their experience giving birth and in the postpartum period. The main hypothesis evaluated in this dissertation is that doulas provide cues of social support and indicate to women that the necessary resources are present to successfully raise their child to adulthood.

CHAPTER V

METHODS

Three basic methods were used in this research: 1) participant observation of one-on-one doula support, pre- and post-natal classes, and Doulas Supporting Teens (DST) events and other activities; 2) participant observation as a doula providing labor support at over 50 home, hospital, and free-standing birth center births, and; 3) questionnaire and semi-structured interviews with teen mothers n=20 who had DST doula support during pregnancy, birth and in the postpartum period.

1. Participant Observation with Doulas Supporting Teens

From September 2005 to December 2006, I conducted participant observation with Doulas Supporting Teens (DST), a non-profit support network for teen mothers in Eugene, Oregon. Participant observation with DST included involvement and observation of one-on-one doula support, pre- and post-natal classes, and DST events and activities. Here I outline my participant observation in this setting.

Doulas Supporting Teens

Founded in 2003 by Shea Hardy and Lisa Rignell, Doulas Supporting Teens (DST), is a non-profit organization created to provide education and doula services to the

teen parents of Lane County, Oregon. DST's mission is to "support and educate pregnant and parenting teens to bring healthy babies into healthy families to build healthy communities (http://doulassupportingteens.org/)."

DST primarily provides services for clients 14-19 years of age, although occasionally they accept women in their early 20s into their classes. DST offers comprehensive 8-week childbirth and parenting classes specifically aimed at teenage parents. In addition, DST pairs doulas with pregnant teens, providing evidence based information, as well as emotional and physical support during pregnancy, labor and postpartum. Through DST, doulas spend an average of 45 hours with each client during pre- and post-natal period visits, not including time spent at the birth (http://doulassupportingteens.org/).

Since 2003, DST has provided labor support services for over 200 pregnant teens, as well as prenatal and parenting classes to an additional 130 young mothers. On average, DST provides services for approximately 45 clients per year, and has, at different times, had over 55 different volunteer educators and doulas work for them (Shea Hardy, personal communication).

As summarized in chapter three, teens are particularly likely to experience pregnancy as a stressful event, and to experience an array of psychosocial risk factors associated with their pregnancy. I chose to interview teens that received support through DST in particular, because the kind and level of support provided by DST seemed to provide the kind of cues and support predicted to have been important for mothers to assess available alloparental support during the vast majority of our evolutionary history before birth moved to the hospital and became a medicalized event.

I began volunteering with DST in September of 2005, after completing the Doulas of North America (DONA) birth doula training. As a volunteer doula I attended and assisted with three 8-week childbirth education classes, and two 8-week parenting classes. I attended 2 births while "shadowing" or following and observing a DST doula, and then provided one-on-one Doula support for 10 women and attended 5 births. I worked with three additional women for whom I did not provide labor support. Two women moved out of town before giving birth, for a third I was out of town at the time of her birth. During both prenatal and parenting classes, I observed, contributed when appropriate, and filled in as instructor if the primary instructor was unavailable. I kept a log of the clients I worked with through DST, and kept notes regarding notable events in classes, and notable things said by participants in the program.

2. Birth Attendance

From fall 2005 through June 2010, I attended a total of 50 births as a doula. This included the 7 teen births I attended while working with DST, 40 births I attended in Juneau, Alaska that I attended as part of my job with Strength in Families (SIF) Program (an outreach arm of the Juneau Family Health and Birth Center), two births by adult clients in Eugene, and another adult client in Missouri. Of these 50 births, 26 have been to teen mothers (<19 years of age), 10 to mothers between 20-24, and 14 to mothers 25 and above. Although my involvement with each birth varied according to client needs and familial support, my involvement with clients in the SIF program in Juneau was similar to that of DST doulas with their clients. Clients in the SIF program receive intensive prenatal services including one-on-one prenatal education, case management,

assistance finding housing, enrollment in Medicaid, getting assistance with state and federal aid agencies (e.g., TANF, WIC[5]) and other social service entities. I provided continuous labor support for all women whose births I attended in Juneau, followed by at least two postpartum visits. For some clients I provided postpartum support for up to a year after the birth of their baby, and we still remain in communication.

For each of the 40 clients I worked with through SIF, I kept a data file including notes on each appointment and interaction, as well as birth descriptions and birth outcome data. For births I attended through DST and privately, I kept a small birth journal, where I wrote notes about the birth, birth outcomes, and often timing of birth-related events when time permitted, which were shared with the mother after her birth. In chapter 5, I draw on these notes and reflections when describing doula support in different birth environments, and how the support offered through DST and SIF differs from typical doula/client relationships.

3. Questionnaire and Open-Ended Interviews

Participants

Participants were recruited from two populations: teen mothers who had doula support through DST, and teen mothers who had no doula support. Inclusion criteria were established to insure that participants were teen mothers at time of child birth, had either

[5] Temporary Assistance for Needy Families (TANF) was established in 1997, and provides cash assistance to families with children in need through the Department of Health and Social Services. The Special Supplementation Nutrition Program for Women, Infants and Children (known as WIC) is a Federal assistance program to provide healthcare and nutrition to low-income pregnant and breastfeeding women, and infants and children under age five.

significant doula services through DST or no doula services, had birth and/or doula experiences that were fairly recent, and were capable of individual consent as established by my human subjects protocols. In addition, to avoid a strong response bias to having me as an interviewer, I did not provided doula services or support to any of the women interviewed. Selection criteria required that participants:

1) Be between 15-19 years of age when they gave birth
2) Have given birth to their child/children in the two years preceding the interview
3) Were at least 16 years old at the time of the interview
4) For DST doula supported participants: were accompanied by a DST doula for the majority of their labor and birth, and established a relationship with their doula prior to going into labor.
5) For non-doula supported participants: received no doula support during or after their pregnancy.

DST participants were recruited via: 1) fliers posted around the DST office, 2) text message announcements sent by their doula, 3) announcements posted on the DST Facebook and Myspace pages, 4) letters and e-mails sent to past clients where these contact information were current and available. All potential participants were informed about the project through DST, and made aware that participation was completely voluntary, confidential, and would in no way impact their relationship with DST.

Non-doula supported participants were recruited from the community at large both in Eugene, Oregon and Juneau, Alaska. In Eugene, Oregon, recruitment fliers were posted on bulletin boards around town, and in locations potentially frequented by young mothers and their families including: the WIC office, the Relief Nursery, Public Health,

and the Department of Health and Social Services. In Juneau, Alaska fliers were posted at the following locations: Yaakoosgé Daakahídi Alternative High School, the WIC office, Zach Gordon Family Center, Public Health as well as on local bulletin boards in areas frequented by teen mothers and their families in Juneau, Alaska.

Twenty women who birthed with a DST doula met the criteria established for participation, and volunteered to participate in interviews regarding their birth experience. Only seven women who had birthed without doula services who met the recruitment criteria volunteered and consented to be interviewed. Small sample size of the latter group means that statistical tests have low power. I therefore draw upon these interviews only to provide additional perspective into the birth experience as a teen mother.

Interview Procedures

When potential participants contacted me I described the interview procedures and performed a brief screening survey to ensure that they met the necessary criteria for participation (Appendix A for doula supported; Appendix B for non-doula participants). If a participant was eligible to participate, I scheduled an interview at their earliest convenience. Participants were given three options for interview location, 1) the DST office downtown Eugene (if they were a DST client), 2) their home, 3) my office (on campus or at the birth center) or 4) at a location of their choosing (e.g., a coffee shop). A reminder call was made if the participant said they would like one, and I usually called the morning of the interview to remind them of our appointment (this significantly decreased the number of no-shows I had for interviews).

At the time of the interview, I again explained what the interview was going to involve—that I would ask them: 1) some basic questions about themselves and their baby, 2) the story of their child's birth, 3) about their experiences with care providers during pregnancy and surrounding the birth, and 4) to rank 30 statements about their birth experience on a Likert scale. Participants were also told the approximate length of time the interview would take and the types of questions that I would ask. Participants were free to bring their babies to the interview, encouraged to take breaks when desired, and were told to make sure that they felt able to provide whatever care to their infants or toddlers during the interview they wanted. Participants were then given a copy of the consent form (Appendix C), and a chance to read through and ask any questions that they had about the project. They were given a copy of the consent form to keep for their records.

The birth story and semi-structured interview lasted between 30 minutes and 2 hours, depending upon how talkative the women were, the amount of detail that they gave about their birth story, and the richness of their answers to questions in the semi-structured interviews. The birth story and semi-structured interview were recorded using a digital voice recording device iProRecorder on an iPhone. The recording device was sensitive enough that it could sit in front of us, on a table or other surface and easily pick up both of our voices, even if it was hidden underneath a blanket or other cover, to keep curious babies away.

The interview began with a short 18-question survey (Appendix D) including, baby's birth date, due date, birth location, and birth weight, participant's age, whether

and what kind of pain medication was used during labor, and other general questions about labor and birth.

After the survey, participants were asked to "tell me [their] birth story—tell me about [their] experience giving birth. You can begin this story wherever you want, with as much or as little detail as you feel comfortable. I'm interested in hearing the way that you tell the story of the birth of your baby." If they needed additional guidance, I asked them to talk about their experience giving birth as though they were speaking to a friend who was very interested in childbirth.

After participants finished the story of their child's birth, I thanked them for sharing their story with me, and we began the semi-structured portion of the interview. The questions from the semi-structured interview were intended to help me get a sense for their level of involvement with Doulas Supporting Teens, their relationship with their doula, level of familial and partner involvement and support, their relationship with their care provider, level of activity during labor, and the ways in which having a doula present for the birth of their baby may have impacted their experience giving birth and their relationships with both their care provider and other support people (see Appendix E for the semi-structured interview guide).

At the end of the interview, participants in Eugene were given a $15 gift card to Target[6] as a thank you for their participation, non-doula participants in Juneau, were given a $15 gift card to Fred Meyer.

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[6] Target is a large chain store that sells home supplies, clothing and shoes, some food. It was identified by Shea and Iris at DST as a popular place for clients to shop for infant and baby supplies.

Data Analysis

Interviews were transcribed verbatim into Microsoft Word. Once transcription was completed, interviews were individually coded for content following Krippendorff's (1980) method of content analysis, taking into account the context in which the statements were expressed rather than simply using the statement alone as unit of analysis. 548 relevant statements were coded in the interviews and then entered into an Excel Workbook. After coding, I grouped the codes according to general categories, and then categorized the type of support, challenge or other general code. If relevant, I also categorized statements and codes according to when the event occurred—prenatally, in labor or postpartum. I then analyzed the categorical information to identify predominant themes in the data, including the number of times a particular theme was mentioned, as well as the number of individuals that mentioned the theme. All participants were assigned pseudonyms, none of the interviewees, their partners, or their children are identified by name. Additionally, when participants made reference to their doula by name, I changed the reference simply to [my doula] to protect anonymity of both the client and the doula. The staff and founders of DST are identified by their actual names.

Because my goal was to understand whether doula activity was successful because doulas provide important evolutionarily relevant cues of experienced support (Trevethan, 1989), and/or allo-parental support (as suggested by cooperative breeding hypothesis), I focused on broad coding categories and themes rather than very specific details of the statements.

For example, the statement: "I got out of the hospital and went home and [my doula] was there at like 3am every morning when I would call her and was like 'I can't get him to latch on!'" was coded and categorized in the following way:

Coded Statement	General	Type	Specific	When
Doula provided postpartum support, would come anytime needed	Support	Availability	Continuous	Postpartum

Similarly, for the statement, "None of my friends [had kids] and they were all out partying, and I couldn't party, (laughing) and his dad was at Job Corps. [My doula] was definitely a huge emotional support for me."

Coded Statement	General	Type	Specific	When
Doula provided emotional support, as friends disappeared	Support	Emotional		Prenatally

Finally, it is important to note that although many of the statements are coded as referring to "support" generally, and DST regularly refers to their activities as "doula support," perhaps surprisingly, women seldom used the term "support" when describing their relationship and interactions with their doula. Instead, they gave more specific examples, such as in the statement quoted above. It is important to note then that the frequency with which examples of "support" come up in the coding categories cannot be attributed to women simply parroting the terms commonly used to describe doula

activity. Instead, it reflects explicit examples of behaviors exhibited by doulas that participants reported, and the use of the term as a useful coding category for classifying these activities.

CHAPTER VI

PARTICIPANT OBSERVATION AT DOULAS SUPPORTING TEENS AND AT DOULA SUPPORTED BIRTHS

Results of this project are organized according to its development. For organizational purposes, the results are presented in three separate chapters. In this chapter, I present qualitative, descriptive data derived from a 15-month participant observation at Doulas Supporting Teens (DST), including description of services, philosophy, and key activities particularly with respect to the provision of social support and education for teen mothers. I also provide additional context for understanding the birth process based on my experience providing prenatal, labor and postpartum support for births in various settings in Juneau, Alaska. These experiences have helped me contextualize the bio-medical birth process from the point of view of birth mothers, and the differences in hospital staff behavior I witnessed depending on whether or not the birth mother wanted me to simply be present, or actively intervene in the birth process.

In chapter 7, I present quantitative data from semi-structured interviews with a sample of teen mothers who had Doula support via DST. Data presented in chapter seven focuses on birth outcomes and levels of participation in various DST activities as described by interviewees. The quantitative data are discussed in relation to other studies of doula support and outcomes.

In chapter 8, I focus on qualitative interview data from semi-structured interviews with 20 DST participants to gain insight into participants' perceptions of the challenges of teen motherhood, the support provided both by their doula and by others, and the level of community involvement and support provided by DST as an organization.

Section I: Doulas Supporting Teens and the Creation of an Alternative Community of Social Support for Teen Mothers

I worked with Doulas Supporting Teens (DST) as a volunteer doula from September 2005 until December of 2006. During this time I provided one-on-one prenatal and postpartum support for 10 women, and attended 7 births. My time as a volunteer allowed me an intimate glimpse into the structure and inner workings of DST. In this section I describe: my involvement with DST, volunteer selection and support, community outreach by DST doulas, childbirth and parenting classes, the type of support that women receive from their doula, and the community that DST facilitates both through events and their childbirth and parenting classes. Here I try to give readers a sense for the ways that DST is a unique organization, and depending on their level of involvement with DST, how the structure of the organization may impact birth outcomes as well as teen mother's perceptions of support and community.

I was first introduced to DST during my Doulas of North America (DONA) birth doula training in the spring of 2005. The DONA trainer mentioned DST as a potential volunteer opportunity to gain experiences attending births as a doula. I called and met with Shea Hardy, the executive director at the time. Coincidentally, I met with Shea on the same day I attended my first birth, the beautiful home birth of two of my dear, long-

time friends. Shea and I met for coffee at a neighborhood coffee shop where she gave me a folder with information on DST, and asked me detailed questions about my experiences and feelings regarding labor and birth. Later she explained to me that much of what the initial "screening" meeting is intended to accomplish, is to determine whether or not she believes that a potential volunteer would be a good match as someone to work with teen mothers.

S

Training and Mentoring the Doula

DST carefully screens its volunteer doulas and provides mentoring and training for the doulas that work with them. The screening is intended to make sure that the volunteer is someone who would connect well with teen mothers, would not pass judgment, and who has clear boundaries. As a new volunteer, I shadowed two births with Shea prior to attending my first birth as a primary doula for DST. Shadowing Shea meant that I attended prenatal visits with her, watched the sort of questions, interactions, and prenatal support she offered, and then attended the birth as an observer.

Observing the type of support Shea provided to her clients both prenatally and during labor helped to alleviate much of my worry about doing this on my own. What impressed me most was that doula support seemed to be so intuitive—it was mothering the laboring woman—making sure the she had water and was drinking, offering words of encouragement, suggesting position changes, making a joke with a family member, placing your hand on a mother's back, encouraging the father to help with physical support, helping a laboring mother into a tub. Certainly there were elements of expertise that come with time and experience; familiarity with hospital protocols, understanding of

what would likely happen next, and learning about different care providers and procedures. But support mostly meant being present for a woman and her family for the duration of the labor and birth: providing her with information, helping her get information from her provider to help her make decisions, encouraging her when she felt like she couldn't go on, assisting her with thinking through decision-making when things didn't go as planned. Labor support also meant getting the father involved: passing him cool washcloths to help him wipe his girlfriend's face as she was pushing, showing him where to put pressure on her back, encouraging him to return to her side after the intensity of her contractions subsided after she had suddenly shouted at him for touching her when they were intense.

In addition to shadowing an experienced doula, I attended a day-long seminar with other DST doulas on postpartum mood disorders, and began to learn how to identify and support women struggling with postpartum depression. I also received mentoring in the various types of social service agencies that DST referred their clients to, and how to help teens access local resources.

Prenatal Education and Support

Since I was eager to attend more births, both the executive and program directors, at DST, Shea and Iris respectively, suggested that I begin coming to the childbirth education classes and accompanying Shea and Iris on classroom visits to teen-parent programs in local high schools to gain exposure to young mothers. At the time I began volunteering with DST, Shea and Iris were doing presentations in the schools at least once a week. These visits to local school programs varied based on the particular

program, sometimes they were geared to present information on DST and on the benefits of doula support, other times they were coordinated with the curriculum of the class, and focused on a specific element of childbirth. Many of the teens that attended childbirth and parenting classes learned about DST through their school programs.

In 2005, both prenatal and parenting classes were being offered in the basement of a local Eugene church and had the unfortunate luck of being held at the same time as a drumming class in an adjacent room. Although I had never been to a prenatal class prior to attending the one taught by Shea, (other than the abbreviated day-long class as part of my DONA training) I could tell at the outset that her classes were unlike other childbirth classes. Now, having attended many different childbirth classes, I know this to be true. Shea is a distinctly open person, funny, personable, direct and able to simultaneously create an environment where she shares accurate information on labor and birth while putting the young women in her classes at ease. She comfortably shared bits of her personal life, her desire for a child, and her husband's resistance to this idea. Her openness seemed to help provide cues that she was not only a childbirth educator, but also a friend that the teens could trust. On the first day of prenatal classes she would pass out small sheets of heart stickers to the participants and tell the women to put the stickers up all around their house. "When you see the sticker, do a kegel exercise," she said. Kegel exercises consist of tightening and releasing the muscles of the pelvic floor these exercises help reduce the likelihood of prenatal and postpartum incontinence in women, and make you a more effective pusher during labor. In her classes Shea announced the benefits of regular kegel exercises "you're less likely to pee your pants after childbirth, and both you and your partner will have better orgasms. Who doesn't want that?" The

teens were in stitches and hooked on her classes. The classes had a free-flowing form where participants felt open to ask questions and share information. Despite the fact that teens are notorious for their low attendance and failure to attend prenatal classes generally, with an engaging instructor, and surrounded by other young women in similar situations, most of the women came back week after week.

Childbirth classes typically began in a circle where women were asked to share something about their pregnancy: a scare, the name of their baby, something happening with their body, a change they had experienced over the last week, a dream, their due date, an interaction positive or negative with another person. Each woman would share something personal or important, which would usually prompt mothers to share something similar. Although each class series had a different group of women, and a different dynamic, the energy that Shea brought to the class always made it engaging and seemed to generate a feeling of openness between the young women.

The childbirth classes offered through DST are only open to teen moms—although occasionally mothers in their early 20s were allowed to attend. The classes met a total of 8 times and covered the usual prenatal topics; anatomy and physiology of birth; normal birth, coping techniques, complications, interventions, evidenced-based research on options for birth, ways to bond with your baby prenatally, what infants want/need, breastfeeding, and ultimately encouragement to seek the support of a doula for your birth. For many of the women in the prenatal classes, being made aware that they had *choices*—regarding care provider, location for birth, and whether or not they had pain medication, etc.—and that they were ultimately responsible for medical decisions regarding themselves and their babies was eye opening in and of itself.

Shea worked hard to make sure that the classes were interactive and fun. For example in the class on interventions Shea would use a mock IV pole (usually a chair), ask for a volunteer from the class, and then attach them to the chair with ropes, strings, bags, and other things. This followed the discussion and description of interventions and provided them an interactive visual sense for what receiving an IV, pitocin, an epidural, antibiotics, a catheter, an internal contraction monitor, and potentially an internal fetal monitor would look like were they to receive them in labor.

Childbirth classes also provided an opportunity for the women to role-play so they could think through different situations in labor, and how they might respond. At the end of classes Shea would often pose questions about how the mothers to be might respond in a particular situation. She might ask "what if the doctor came into your room and said: 'your labor is not progressing quickly enough, I'm going to break your water.' What would you say then?" I remember one situation where a young mom responded, "I would say, BITCH, get out of here!" This response elicited laughter from the other moms, but Shea took it as a teaching moment:

> That might be what we all want to say when someone doesn't inform us of our options, but saying things like that to hospital staff, is not going to help you get the birth you want. How about if you said: 'what are my other options right now? Or, could I have another hour or two to see how much my cervix changes and then we can talk about breaking my water again?'

For some of the young women the prenatal classes encouraged them to find their voices, and to find the ability to speak up for themselves. For others who were comfortable speaking for themselves, or lived in difficult circumstances in which they were constantly

on the defensive, the classes helped them temper their voices, giving them tools to become effective advocates for themselves and their babies, without being aggressive and alienating to medical personnel.

In addition to providing in-depth childbirth education class, classes were also an opportunity for young women to identify a doula with whom they wanted to work. During the time when I attended the childbirth education classes there were typically 2 doulas at each class in addition to Shea who, like myself, helped add information, and allowed the teens to meet potential doulas in a low-pressure environment. I think this "selection process" of doulas is an critically important aspect of DST's program for two reasons: 1) it provides women with a choice of doula so they can find someone with whom they feel comfortable and with whom they feel a connection and, 2) it empowers young women to make a choice about who will be at their birth. For many young moms, having a choice of doula was the first time that they were offered or had exercised a choice regarding care providers and birth options.

This approach was highly effective: for example I met all of the young women I provided doula support to through the childbirth classes. Sometimes the young women would approach me directly, more often they communicated their desire to work with me to Shea, who would then provide me with the client's contact information so I could schedule an appointment. There were also situations where women had known complications or were especially young (between 13-15) for whom Shea or Iris would carefully assign them a well-established doula, or a doula who had experience working with complex social situations. Indeed, working at DST also functioned to familiarize me with a variety of social service organizations. I helped clients get signed up with the

Women Infants and Children (WIC) nutrition supplementation program, Temporary Assistance for Needy Families (TANF) and other social service providers. For many clients, DST was not just about providing education and support for birth per se, it often involved making sure that the young women had the resources and support necessary to successfully parent their child.

Since teens at all stages of pregnancy enroll in prenatal classes, women who birthed mid-way through the class would usually come in and tell their birth story and show off their baby to the rest of the group. Contact with postpartum teen mothers enabled the teens in the classes to hear first hand the challenges and triumphs of giving birth directly from one of their peers. As one client of mine said to me after hearing another mom's birth story "I mean, don't take this the wrong way, but you know, she's so tiny and, well, so preppy, and I mean, *she* did it [had a natural birth]. And that makes me think that I can do it too." Aside from giving the women first-hand accounts of their peer's birth experiences, classes also provided an opportunity for women to meet other pregnant and parenting teens. The networking opportunities provided by the classes, which I describe in more detail in the following chapter, appear to provide a critical opportunity for young parents to develop new friendships and sources of positive social support.

Doula Support

In addition to classes, many of the teens involved with DST also chose to receive one-on-one prenatal, birth and postpartum support from a doula. Working with a doula typically involved numerous prenatal visits, far more than the typical 2-3 visits with a

doula in private practice. Prenatal doula meetings with DST clients typically occurred at their houses. Home visiting is an essential component of accessing teen parents since transportation is so often a barrier to supporting this demographic (Maynard, 2004). These appointments typically focused on the woman's desires for birth, making her aware of her choices for labor and birth, and helping her to create a birth plan—a detailed communication about her desires for labor and birth to share with her care provider(s). More than just covering the pragmatics of birth and labor support, prenatal appointments were a key opportunity to establish a relationship with the woman and her other support network—usually her family. These prenatal appointments enable the DST doula to know a client's wishes and worries, but also her family dynamics, her home environment, the ups and downs of her relationship, and ultimately her needs in the larger context of her particular social situation. And, this extended to their relations with their medical care provider. For example, when working with my DST clients, I often accompanied them to at least one prenatal appointment with their care provider, usually the appointment when they shared their birth plan with their provider or when they met to address any questions or concerns that the mother had. Most DST doulas make a point of meeting the teen's care provider prior to labor and birth, especially if the doula has not worked with that care provider before.

Case Study: Melanie's Birth

This brief case study of one woman, Melanie, and her birth provides a concrete example of the effect that DST education and support can have on teen mother's knowledge, empowerment, and birth experience. I met Melanie at one of the DST

childbirth classes, and am still in loose contact with her today. Melanie was a quiet woman, who developed a clear desire for a natural birth after attending DST's childbirth classes. She was an interesting woman to work with, because she was so transformed through education and information. We had numerous prenatal meetings, including once to make a plaster cast of her belly. When I met her at the hospital at the time of her labor, she was also supported by her boyfriend, and another teen mom. Doulas often explain their services as "holding the space" for birth—that is giving their client the space to enter the primitive place in their brain that makes them able to give birth. For me, Melanie's birth was a powerful example of what happens when you disrupt a laboring woman, and a powerful example of why medicalization of birth for women without complications leads to poorer birth outcomes and high rates of medical procedure intervention.

When I met her at the hospital, Melanie was already in active labor experiencing frequent contractions. She labored on the birthing ball, moved to the tub for several hours, and then to the bed, where she was sitting up coping with the contractions by having her doulas and her mother continually rub the lower portion of her belly. The room was dark and peaceful, and she never said anything to indicate that the labor was painful or unbearable. Suddenly the on-call doctor came into the room, turned the lights up, and without even acknowledging the young woman, asked the nurse "is she ruptured?" in reference to the client's amniotic sac. When the nurse responded that her bag of waters was still intact, the doctor then began preparing an amnihook to break her water. As Melanie became aware of what the doctor was planning to do, she opened her eyes, and asked what was going on. The doctor said simply "I'm going to break your

water to help things moving along." Melanie's eyes fixed on the doctor, "No, you're not going to break my water" she said, arms crossed, cheeks flushed, and contractions suddenly disappearing. After a several-minute long conversation about how Melanie's labor was not progressing quickly enough, and frustrated that she would not comply with her desires, the doctor brusquely left the room. Melanie, who had been experiencing regular, intense contractions approximately 2 minutes apart and lasting well over a minute long, stopped contracting, sat in a defensive position and said " I do not want to see that doctor again. I'm going to scream if she comes in here again." After reassurance from both the nurse and myself that her wishes would be respected and that there was currently no medical indication for her water to be broken if she didn't want it broken, her contractions gradually returned. Less than two hours later, her water broke as she began pushing and she gave birth to a healthy baby girl without any interventions. At 17 Melanie not only experienced a natural birth, the birth she so desired, but also was a powerful advocate for herself and her baby.

Parenting Classes and Group Activities

After giving birth, many of the young women begin attending the parenting groups, led by Iris Bicksler, through DST. I attended, observed and, occasionally when needed, led the parenting groups. The parenting groups met both in the basement of the church, and then later, in the Springfield Relief Nursery's main lobby area—a comfortable room with couches and a television for showing videos. DST's parenting groups were a far cry from what most people would likely think of when they think of groups offered to teens on parenting. The groups addressed issues ranging from dating

someone other than your child's father, having sex postpartum, relationship challenges, what constitutes violence and abuse, what infants need and desire. The groups were filled with babies of different ages and provided positive mentoring opportunities, helped normalize positive breastfeeding behavior, and encouraged attached relationships with one's child. Many of the young women knew each other from the childbirth classes, which helped the group have a level of camaraderie and cohesiveness that was deeper than would be the case had these been newly formed relationships. Although the topics were varied, conversations often shifted back to relationships and sex, the challenge of balancing being a mother with being a teen, how their bodies were changed by pregnancy, embarrassment of stretch marks on their bellies, breasts, and thighs, and the difficulty of maintaining a sexual relationship with their partner. The parenting group also functioned to provide social connections for the mothers involved—indeed, many of the women established friendships through prenatal classes, which extended to parenting groups, and meetings outside of DST classes and events. On several occasions I overheard mothers talking about getting together to go shopping or trade clothes, and one mother organized a walking group so that the moms could get together and get exercise with their children.

The parenting group also functioned to normalize breastfeeding. For a demographic of women who typically have low rates of breastfeeding, attending a group where breastfeeding was the norm provided positive role models for other mothers. I remember one of my DST clients struggling with breastfeeding—Iris and I both did multiple home visits with her to support and encourage her to continue, but she eventually switched her baby to formula. What I remember most clearly was her

discomfort about bottle-feeding at the parenting group. After working with several other teen mothers' groups, I have never seen this dynamic replayed—the opposite, yes, where the one breastfeeding mother felt awkward, but DST generates a culture which normalizes breastfeeding and where this becomes the expected method for feeding your baby. As discussed in chapter three, this is not a moot point of cultural variation and preference: a wealth of scientific evidence demonstrates the multiple positive effects of breastfeeding for infants.

A Continuing Support Community

Another key component of DST support were bi-annual events for the teen mothers who were or had been in the DST program. Typically held in December and again sometime in the late spring or early summer, these parties were big social events and opportunities to acquire resources that otherwise were unavailable to many of the teens. Shea and Iris both have extensive connections with the parenting community in Eugene and would solicit donations of lightly used baby clothing and gear. There would be literally truckloads of donated items at these events, and the teen moms were encouraged to bring their friends and families. At the Christmas party there was a Santa, and Shea and Iris took photos of kids and families. There was always more food than could be eaten, and teens went home with bags of clothes, cribs, changing tables, toys, books, and other things for their children. For many of the women who lacked the economic means to afford baby supplies, this was an important time to celebrate and socialize, but also to amass the resources that would help them with their infant or toddler.

DST also helped mothers celebrate their pregnancies. Both Iris and Shea are talented photographers, and both of them offered pregnancy photos and pictures of mothers and new babies. For many of the young woman, uncomfortable in their expanding and stretching young bodies, taking prenatal pictures with Iris or Shea was a way to celebrate being pregnant. The teens were encouraged to bring their mothers, their boyfriends, or just themselves, and they came made-up and looking beautiful. For many of them this was a unique opportunity to celebrate their pregnancy, their bodies, and their babies, something few young mothers are able to take the time to do. Many of the young women also did belly casts—casts made by dipping pre-coated strips of cast material into water and lying them over the woman's breasts and belly—the casting material hardens and the pregnant belly is preserved. In a culture where teen pregnancy is deemed shameful, these rituals of celebrating and commemorating their pregnancy was often the only outlet or time these women celebrated being pregnant.

In addition to providing opportunities for women and their families to celebrate their pregnancies, DST also provides referrals and links to social services. DST makes sure that their clients are connected with the local WIC program, food banks, and other social services so that their basic needs are being met. DST also received a community supported agriculture (CSA) box donated by a local farm, containing a share of locally grown fruits and vegetables that were donated on a weekly basis. The box was brought to the parenting and prenatal classes in the summers and mothers were able to take home fresh fruit and vegetables to their families. Many of the women had never seen, let alone eaten, the majority of the foods that came in the CSA box, so cooking and eating from the

boxes of fresh produce was another way that DST modeled positive lifestyle choices, rather than simply lecturing about them.

Where Is DST Now?

After years of storing teaching materials in the back of cars, shuffling between church basements and other donated classroom space, DST moved to the Growers Market in October 2006. They currently occupy two offices, a breastfeeding room and teaching classroom, and also have access to a large communal meeting space. Over the last several years, their services have continued to expand and the client load has grown.

Since opening its "doors" in 2003, 6 young mothers who received the support of a DST doula for the birth of their baby have gone on to complete doula training and now offer support to other pregnant and parenting teens. Indeed, having someone your own age, and someone who has first-hand experience with giving birth at a young age, makes these women uniquely qualified to support other teen moms—and increasing the number of young mothers who return to provide support is a long-term goal of the organization.

As one client whose baby was nearing one, and who was starting to feel too old to come to the groups anymore said: "I love DST, I loved being pregnant, I loved working with my doula. I loved the attention. It makes me want to have another baby and do it all over again." Although this comment would likely send shudders through someone in policy and prevention, it articulates two important things that I observed in working with these women. First, the teens are seeking direction, some indication as to what they should do with their lives. Second, teens are seeking positive, accepting community, something that is difficult to find as a teenager, pregnant or not. DST functions to fill

both of these gaps—that is, they provide the information and education to make teens well informed about their choices and options for giving birth, and they provide access to a structured group—access to other young mothers and positive role models.

Despite the professional-sounding description of the organization—DST is a small non-profit, run on patched together, shoestring finances and a lot of love and elbow grease. Although the volunteer doulas are critical to providing support and assisting with classes and events, Shea Hardy and Iris Bicksler are the heart and soul of this organization. It is their dogged work and effort: grant writing, organizing fundraisers, negotiating classroom space, planning events, and sharing their unique personalities and skills and inviting teen families into their lives, hearts and homes—that have kept the organization up and running. This dedication comes at a cost; it is difficult to maintain a regular job when attending births at odd hours, and there are significant personal and health costs associated with losing days and nights of sleep supporting women as they give birth. Without question, the demands of being a doula are hard on relationships, families, and on the one's overall health.

At the time of the completion of this dissertation, in the summer of 2010, the fate of DST remains uncertain. Shea is newly married and in the process of relocating to Portland, Oregon. Although she still plans to stay involved with DST, it will be in a limited capacity. This summer, Iris and her family are leaving to go abroad for a year, and she will reassess her role in DST when she returns home. In the meantime, Courtney Everson, a graduate student at Oregon State University, will be running DST as the education and outreach coordinator and will provide the bulk of labor support to the

clients that they serve. Other doulas will still remain involved, and some classes will be offered, however, all services will be provided in a more limited capacity.

Section II: Participant Observation of Doula Births; Reflections on How Doula Support Impacts Births, and the Doula's Role in the Hospital and Birth Center

In this section, I draw upon my experience attending 50 births as a doula in various settings with women aged 15 through 42. A majority of the women I have supported have been young, and have had some social risk factors. As a doula I have supported 26 women under the age of 19 at the time they gave birth. 10 women have been between the ages of 20-24, and the remaining 14 were aged 25 and above. My clients have chosen to give birth in a hospital (28), birth center (14), and (8) at home.

In this section, I describe my experiences providing labor support primarily through my position at the Juneau Family Health and Birth Center (JFHBC), through the Strength in Families Program (SIF). Although I draw upon my experiences broadly, I focus specifically on hospital and birth center births, and on instances that seem to illustrate the ways in which doula support impacts birth outcomes, as well as trends that I have noticed among the women that I have served.

Clientele

As I'm writing this morning, my on-call phone has rung three times before 10am. First, a call from a client who had her baby at 37 weeks while I was out of town, she's worried about her baby's latch, about jaundice, and is wondering if I could come over in

a little bit? Another called to recount the story of her older son being taken by Medivac[7] to Seattle (I attended her youngest son's birth just over a year ago). The third a client of mine who is about to have her second baby, and who wants to tell me about her doctor's appointment she had yesterday. I need to write my dissertation. I'm not writing the above to solicit sympathy for the mayhem in my life, but to provide a sense of what my days consist of as a doula at the Juneau Family Health and Birth Center.

Currently most insurance companies and Medicaid do not cover the fees associated with doula services. Because of the cost associated with doula support, hiring a doula is often prohibitively expensive for young or otherwise at-risk mothers, and make hiring a professional doula a luxury afforded primarily by middle-to upper class women who often pay over a thousand of dollars for continuous support. Programs such as DST, and the Strength In Families Program (SIFP) in Juneau, Alaska were created to fill the gap and make doula support accessible to young and low-income women who would not otherwise be able to afford the support of a doula. Programs such as DST and SIFP also are unique because the relationships with clients are typically much more involved than the typical two prenatal meetings, labor support, and postpartum visit typical of most private doulas.

I work as the program coordinator for the Strength-In-Families Program (SIFP) at the Juneau Family Health and Birth Center in Juneau, Alaska. My job is to provide doula support as well as case management for women who are young, single, or who have other

[7] At Juneau's community hospital, they are unequipped to deal with most complex or high-risk medical problems. If an individual falls out of their scope of practice, they are flown to Seattle or Anchorage for care in a hospital equipped to deal with whatever health emergency they are experiencing. This practice is referred to as Medivac.

social risk factors. Although my doula trainings and experiences at DST prepared me for some of the situations I support my clients through, nothing prepared me to support women through pregnancy who also are coping with the level of poverty, uncertainty, poor health and often violence that my clients at SIFP. Approximately half of my client load at any given time is homeless, or living in an unsafe location, struggling with issues of crowding, mold, and domestic abuse. Although Juneau is the capital of Alaska, it is still a relatively isolated Southeastern Alaskan town—accessible only by boat or plane. The town struggles with high rates of drug and alcohol abuse—and the state of Alaska has the dubious distinction of having one of the highest rates of domestic violence, partner homicides, and sexual abuse in the United States (Alaska Network on Domestic Violence and Sexual Assault, 2006). I get referrals from hospital social workers sending home 14-year-old women with their first babies with nowhere else to refer them to. Aside from having a public health nurse come to your home, the Strength-in-Families Program in Juneau is the only home-visiting support program currently available in Juneau. My position is funded through the Alaska Children's Trust, a fund intended to help prevent child abuse and neglect. Doula support is available at no cost for women who have social risk factors, and I support women wherever and however they choose to give birth. Because I work for the birth center in Juneau, a large percentage of my referrals come from the midwives there—however, because I work with a higher risk demographic, my clients are often risked-out of midwifery care, and I end up providing support for them when they have a hospital birth. In Alaska, like many other places in the United States, your pregnancy must be classified as "low-risk" to birth in an out of hospital setting. Clients that are risked out may have high blood pressure, gestational

diabetes, psychological issues, not be eating well or caring for themselves in a way that makes the midwives feel that they are healthy, or have a history of labor and birth complications that make them better suited to be in a hospital setting. Because of these factors, I have a range of experience in supporting women in different settings.

Education

Information and education are perhaps the most common types of support that I provide to the women and families that I work with. Of the 50 women I have provided doula support to, I have provided specific elements of prenatal education for 38 of them. Of the 26 teens I have worked with, only 8 of them attended any prenatal classes, and 4 of the 8, went to one class, and then quit attending. A majority of the teens I work with prefer to do 1-on-1 childbirth classes rather than attending the classes offered through the birth center or hospital. Many of the teens describe discomfort with attending the class alone, and express that they feel judged by other parents for their age and level of preparation for the pregnancy. Others won't go because their partners were unwilling to accompany them, or because childbirth classes typically happen in the evenings and they don't have reliable transportation. With only a few brief office visits to their primary care provider, many of these young women would typically show up to the hospital woefully uninformed and unprepared for the realities of labor and birth. Therefore, I spend between 4-6 prenatal visits educating my clients about; what to expect during labor, what an induction is like, the interventions associated with different types of pain medication, different coping techniques, the mechanisms of labor, breastfeeding skills,

the terminology of labor and postpartum and generally increasing her knowledge of the birth process.

Education and preparedness seem to positively impact the dynamic between pregnant teens and their care providers and may change the treatment that women receive during labor. As described in the next chapter, several of the DST interview participants described how being more informed positively impacted the relationship between themselves and their care provider. This has been the reported trend among clients of mine as well. Recently, one of my teen clients reported feeling frustrated about her relationship with her care provider "she rushes me all the time, she asks 'do you have any questions' waits one second, and the walks out of the room." At our next meeting we sat down and wrote out three questions for her to ask (actually she typed them in her phone—she *always* has her phone) at her next prenatal appointment. After the appointment she called me and reported: "You should have seen her face. She was so surprised that I had questions. And, like, she sat down, and talked to me, for 15 minutes!" Doula support, for young and at-risk parents no doubt impacts the amount of information that women and their families have preparing for birth, and may change the relationship between a teen and her care provider. This may not only be because educated women are more likely to ask questions, but also because physicians' educational training specifically involves answering specific informed questions about birth process or medical procedures but does not prepare them for dealing with patients who may not have the skills to ask questions, or engage their healthcare provider generally.

At the birth center I helped to create and run the New Parents Group. The New Parents Group is a support and informational group for women and their partners with infants to one-year-olds. The group, started nearly three years ago and facilitated by a doula has a regular attendance of 8-10 women and their babies (occasionally a dad will attend, but this is rare). The parent's group was initially created to provide information to parents—how and when to start baby sign language and introduce solid foods, examples of great books and toys, infant massage, teething, dealing with unwanted advice, infant carriers etc. I often invited community members to come in and present and found that it was difficult to get the women in the group to stop talking to each other and give their attention to the presenter. Although giving your attention to anything for an extended period of time is difficult with a small baby, the group seemed mostly to function as an opportunity for the mothers to socialize, talk about their babies, ask each other questions, discuss frustrations and generally provide support and information to one another. The group, however, seemed to attract a particular demographic of women—attendees were typically well educated, invested in attachment parenting, cloth diapering, and co-sleeping, and these topics often became the focus of their conversations. I often encourage my teen clients to come to the group, envisioning mentoring by the other mothers, but they usually sit next to me, talk about their baby, and don't return the following week. When I ask them why, they tell me that they didn't feel like there was anyone there that they identified with, and that they felt shy reaching out and starting conversations with women they had never met. Creating a parent's group aimed at and only open to teen parents is one of my goals for the future.

Doula Support in the Hospital and Birth Center

In this section I highlight the differences in doula support offered when a woman chooses to birth at the hospital or at a freestanding birth center. I then focus on a few case studies of particular births that are illustrative of how doula support impacts birth outcomes, with particular attention to the treatment of mothers, and the role of the doula.

Hospital Support

When a woman arrives at the hospital in labor she is typically hooked up to an IV, and monitored with both a fetal heart rate monitor and a contraction monitor for at least half an hour. She is given a vaginal exam and instructed to change into a gown, and lie in bed where she is monitored. Despite the fact that both of the hospitals where I have spent the majority of my time providing labor support have recently undergone significant facelifts; new floral bedspreads, medical equipment hidden in cupboards and behind screens, rooms with tubs and a "home-like" feel, most women laboring get into bed, and remain there (except for trips to the bathroom) until they give birth to their baby (Listening to Mothers, 2006). Women who desire a natural birth, but who still feel most comfortable in a hospital setting sometimes turn to a doula to help them achieve this goal. Typically, women who birth in the hospital are as Robbie Davis Floyd (date?) says: "choosing to birth in the company of strangers." Despite the carefully chosen care provider, unfamiliar people—albeit often kind and well intentioned people but strangers nonetheless— are in and out of the room during a woman's labor. Although most women spend a good deal of time thinking about who their doctor will be, if they like the practice, and whether or not their beliefs mesh well with their doctor's style of practice,

most doctors typically spend very little time at births. A typical OB appointment in the United States offers less than 5 minutes with the actual doctor (Wagner, 2006). And labor is not all that different; the doctor on call, which may or may not be the doctor you have seen throughout your pregnancy, typically comes in briefly sometime after the laboring woman is admitted to check in with her, do a vaginal exam, and write orders for various interventions, narcotics, pitocin, and an epidural past a certain set point in time. If the woman has an uncomplicated labor, she likely will not see the doctor again until she is about to push her baby out.

Often, when supporting a client as a doula in the hospital, I am the only person that she has met prior to going into labor. In my experience, women who birth in the hospital choose doula support for one of several reasons 1) they want someone to help them navigate the medical system who is familiar with normal birth and hospital protocols, 2) they are single, or their partner is concerned about being the primary support person, 3) they desire an unmedicated birth and have done their research and figured out that doulas increase the likelihood of natural birth or, 4) they are concerned about having a caesarian section and hope that a doula will reduce the likelihood of that intervention. Supporting a woman who desires a natural birth, or who desires something other than standard procedures and hospital protocols, often means encouraging a woman and those who support her to advocate for her, and actively working to interrupt the standard procedures at the hospital.

In the hospital, I encourage my clients to remain active, to move, to use the tubs, to ask for more time and options. But, despite my best efforts, it is often difficult to help women achieve a natural labor and birth in a hospital setting. The nurses inform me that

they are required to offer pain medication, and to assess a woman's pain level every hour. With IV pain medication constantly available, often drawn up and sitting in the room, and with "I have some Stadol right here, just in case you change your mind" indicated, even when a woman has asked for no offers of pain medication, it's rare to get someone through labor without them asking for pain relief. It's interesting to note that women at the birth center who are about to begin pushing, or who are pushing their babies out, often say "I can't do this!" but without the option, women almost never ask for pain medication. In the hospital the presence of medication makes it tempting, and some nurses seem overtly eager to get pain medication on board and get the woman back into bed—where they are can be monitored and managed remotely from the nurses station.

In the hospital, I have had the interesting experience of working with a woman who requested that I just sit with her and act only as a friend and not as an advocate during her birth. Although I offered the same type of educational support and options as I did with other clients prenatally, this client indicated that she was happy with the hospital's performance during her first birth, but unhappy with her partner's support—they got into an argument and he stormed out of the room just before she gave birth. In her case, I was her only support person during labor. I found her labor to be particularly interesting because it gave me some insight into regular hospital protocols. Because of low amniotic fluid, a condition that is commonly diagnosed late in pregnancy, my client was induced at 39 weeks of pregnancy. Her labor was induced with Cervadil, a cervical ripener, applied directly to the cervix that usually functions to thin and soften the cervix, but sometimes stimulates regular contractions. Her contractions began and intensified after the insertion of Cervadil, and her labor progressed quickly; her child was

born perhaps 3-4 hours after her induction began. About an hour before giving birth she received a dose of narcotic pain medication—and the nurse came into the room wiggling the needle and doing a dance "look what I have for you..." she said. My client was delighted to get her narcotics, and they both giggled as the nurse administered the pain medication. Her doctor was numbing her perineum to do an episiotomy with an intern looking on as she quickly pushed her baby out without tearing. Although her baby was given to her immediately after birth, she held him for less than a minute before he was taken by the nurse to be washed, diapered, measured, weighed, immunized, and returned to her swaddled and sleeping nearly 45 minutes later in a bassinette that they wheeled over next to her bed. With the increased awareness about the importance of mother/infant bonding, breastfeeding after birth, and a seemingly renewed interest in natural childbirth, I sometimes wonder if women's experiences and treatment by the hospital staff are all that different in the hospital without a doula. Obviously assessing the sequence of events without an observer is an impossibility, but attending her birth led me to believe that having someone there identifying themselves as a doula, or as an advocate, leads staff to believe that you have different desires for your birth and that you are well-informed of your options.

Birth Center Support

Since my position is funded through the JFHBC, many of my referrals come from the midwives at the center. When a woman chooses to birth in an out of hospital setting, she is choosing to labor without medical intervention—without pain medication, without labor enhancing drugs, and typically with the support of a midwife. At the Birth Center

in Juneau, women are not routinely offered the support of a doula, this is reserved for women who the midwives believe do not have adequate support, express the desire for additional support, or who are young or otherwise unprepared for labor and birth. At the birth center a laboring woman is assigned a primary midwife—one woman who will monitor her throughout labor and birth—a second midwife is called when the woman begins pushing, or when birth appears imminent, and is assigned to the baby to monitor heart rate, respiration, and transition to the extra-uterine environment. When supporting someone at the birth center, I join her wherever she feels she would like my support, which is usually about the same time that she arrives at the center. At the birth center, women are free to move around, wear their own clothes, and take walks outside. Laboring women are monitored every hour during early labor, and every half hour in active labor with a Doppler monitor that tracks the baby's heart rate. There are large tubs available to help deal with the pain, and women are able to birth in the tub if they desire a water birth. The midwives monitor women more frequently during pushing contractions, listening to heart tones both during and following contractions to make sure that the baby is not experiencing any heart decelerations.

At the birth center, my support differs from the midwives in that I tend never to leave my clients' side (in some situations I do, if she has a partner and they want some time and space together). Generally, however, I stay with the laboring woman throughout labor, encouraging movement, giving her foot and back massages, sitting quietly beside her in a chair, breathing with her, encouraging position changes, and offering verbal encouragement. Even at the birth center, doula support tends to be much more hands-on than the midwives. My support is also solely focused only the emotional

well-being of the mother and her partner—and does not have to be interrupted by clinical responsibilities, such as monitoring heart tones, blood pressures, or assessing cervical dilation. If the woman is laboring during the day, and is not in active labor, the midwives often attend clinic, and care for other clients while the woman labors—checking in on the hour or half hour to monitor her progress. Even in labors where the midwives do not have other responsibilities to tend to, the midwives typically do not provide continuous support; while they do much more supportive care than other providers, they typically come and go throughout labor. I have heard women complain that they needed more support during labor as their midwife came and went—and felt like their birth-outcome might have been different with continuous, uninterrupted support.

Although my position is paid for in part by funds through the birth center, the role and importance of continuous support is debated there. I have heard the executive director say, "If you have a midwife, then you don't need a doula," and she and I have had several conflicted conversations about the difference between the role of the doula and the midwife, and over the fact that doula support is only offered to women with social risk factors. Often I meet women postpartum at the parenting groups that I lead and they say, "You work here? You do labor support? I would have loved that at my birth." Other women feel that the support of their partner, and whomever else they chose to have at the birth was plenty. My frustration lies in the fact that women are not aware of all their choices, and that some describe not feeling well supported enough, especially if their labors progress quickly, that their partners were overwhelmed by seeing them in pain, or that they were uncomfortable when there was no one there in the room with them. The director's position on doulas, and her argument for her belief that the fewer

people in the room the better, comes from supporting thousands of women during labor—and indeed, I've found that the more births I attend the less I tend to do for women during labor.

Initially, when I first started doing doula work, I felt like I had to be massaging, encouraging, assisting and continually doing something during labor, and now I tend to be much more hands off, encouraging partners and family members to provide support. I think that ultimately the director's issues with additional labor support come from the fact that she believes that birth is such a transformative event for women that women find their strength in labor and develop a new sense of accomplishment of self-respect. I think that her hesitation about doula support is that she wants women to be able to say, "I did this. I did this myself." After they give birth, and when midwives or doulas are too hands on, they are thankful to their support people and do not feel that they could have given birth alone when in reality they did give birth themselves, and would have with or without support.

Parental Support

More often than not with the teen clients that I serve, there is some level of parental involvement with the pregnancy and birth. This involvement does not always mean that the relationship is positive or supportive, and many parents, especially mothers, seem deeply distraught when watching their daughter give birth. One thing that impresses me is how different the landscape of birth is today than it was 15-20 years ago when the majority of mothers gave birth to their daughters. I've had client's mothers at prenatal appointments say, "you better ask your doctor for an episiotomy, or you're

gonna tear like crazy!" Mothers not only provide out-dated information, but are often largely unaware of their daughter's wishes for birth. Sometimes I will have worked extensively with a couple who are coping well together during labor and then a mother shows up and starts wandering the hall demanding nurses and doctors to do something, "Oh my God! Can't you see she's hurting? Do something for her!"

Many mothers of teen clients have had particularly negative experiences giving birth, often as teen mothers themselves. Sometimes this makes them a powerful advocate for their daughter, but other times they are so wrought with fear and the emotions brought about by watching their daughters give birth, that they function instead to perpetuate the negativity that they experienced giving birth. These mothers may provide inaccurate information or bring powerful amounts of fear to the birth that are hard for anyone to overcome, let alone a worried teen preparing to give birth herself.

What's Going On?

The SIF program is woefully understaffed; myself and another doula split a 30-hour a week position, which also includes running both a toddler and parenting group as well as intensive prenatal, postpartum and continuous labor support. Our hours often exceed the 15 per week we are each allotted, and we see much more need than we are able to fill. Despite our limited hours, my work at the SIF program has impressed upon me the level of social instability and unpredictability of many expectant women's lives. Although a doula may spend relatively little time with an individual client, the cues of support provided by her presence for mothers in such unstable and unpredictable

situations may be enough to cue levels of social support, and to access resources to help her to have a successful pregnancy and birth.

Numeric representations of my work in Juneau at the birth center aren't particularly illustrative of what doulas are functioning to do; this section was intended to situate my experience working with young, at-risk mothers, and the context in which I provide support.

CHAPTER VII

PARTICIPANTS' DEMOGRAPHICS AND BIRTH OUTCOMES

I begin this chapter by describing interview sample population characteristics followed by quantitative data on maternal conditions and birth outcomes provided by DST clients during semi-structured interviews. Maternal and birth outcome data is followed by data on participant's perceptions of the challenges of pregnancy and birthing, and of how having a doula impacted their pregnancy and birth experience. I start by examining outcomes considered problematic or which lead teen mothers to be classified as high-risk, focusing on outcomes that doula support has been found to significantly impact. Although sample size is small for statistical analysis generalizable to mothers and the birth process in general, my sample does include approximately 2/3rds of the postpartum clientele involved with DST at time of the interviews. My intention was to situate the women I interviewed into the larger picture of teen pregnancy, and, most importantly, to elicit mothers' perceptions of doulas to determine whether these perceptions accord with evolutionarily-relevant cues mothers would be expected to be sensitive to based on a cooperative breeding model of human birth. As I will argue later, data indicate that the sample is characteristic of older teen pregnancies generally, and provide a relatively representative sample of the women that DST typically serves. I should note here, however, that early in 2010, DST lost its computer database where

client demographic data was held that I intended to use for comparative analysis. Only summary percentages based on published information remain, but these must be taken with a healthy dose of caution since the actual number of individuals being described through DST's statistical data is unknown.

Sample Characteristics

DST Interview Sample

20 women who were between the ages of 14 and 19 years of age when they gave birth participated in this study. All were at least 16 years of age at the time of the interview. Table 7.1 summarizes the distribution of the participant's ages at the time they gave birth and number of children at the time of interview based on their interview responses. Participant's children ranged between 3 weeks and 2 years of age at the time of the interview. Of the 20 women I interviewed from DST, 19 gave birth with their doula present. One participant, who worked extensively with her doula prenatally and in the postpartum period, birthed so quickly upon arriving at the hospital that her doula could not arrive until just as her child was being placed on the participant's chest after delivery. Sixteen of the women interviewed had only one child, two had two children, and two had three children. Of the two women with two children, both had a doula for the births of both of their children, but the interview and information provided during the interview focused on their most recent birth. Of the two women who had three children, one had a doula for her first birth, and then for the birth of her twins, the other received the support of a doula for her third child only. As noted in the methods, participants chose the location for the interview. Fifteen of the women chose to be interviewed in

their homes, and 5 of the women chose to come to the DST office, a place all of them were familiar with from attending classes and meeting with their doulas there.

Table 7.1. Participant's Age at the Time of the Birth Described in Interview

Mothers' Age at Birth			*Mother's Number of Children (count)*		
Age	Count	Percent	One	Two	Three
15	3	15	3	0	0
16	4	20	4	0	0
17	4	20	4	0	0
18	2	10	2	0	0
19	7	35	3	2	2
Total	20	100%	16	2	2

Level of Involvement with DST and Referral Source

In the first part of the semi-structured interview I asked participants specific questions about their relationship with DST. Here I present information on how women found out about the program, their level of involvement in childbirth and parenting classes, the number of prenatal and postpartum visits they had with their doula, and other information about the involvement, support and education that they received while working with DST.

Eleven of the women interviewed found out about DST through the school they were attending. Indeed, outreach to schools is a major component of DST, both the program director and volunteer doulas make frequent visits—as often as one presentation a week—and informational presentations to the teen parent programs at high school programs throughout Lane County. Of the women who found out about the program through their school and specified the school they were attending, 4 of them attended

Gateways Alternative High School, the alternative program to Springfield High School, which has a curriculum specifically created to accommodate teen parents. Gateways provides nearby childcare for both infants and toddlers, prenatal and parenting classes at their campus, transportation to and from the school, and access to counselors who connect young parents to various social service agencies.

Two participants found out about DST's programs from Springfield High School, the high school affiliated with the Gateways alternative program. Two participants heard about DST through Willamette High School. Several of the participants stated that they found the "drama" of being in a non-alternative high school and being pregnant to be too stressful and either chose to graduate early, get their GED or transfer to an alternative high school rather than dealing with the stresses of attending a mainstream school.

The remaining participants found out about DST through the following sources: from a friend (3), from their mother (2), from their sister (1), from a WIC nurse (1), from their doctor (1), from a social worker (1). Referral sources and frequencies are summarized in Table 7.2. The diversity of ways in which women found out about DST's programs is a testament to the quality relationship that the organization has with other local social service and primary care providers in the community. Indeed, several of the women who identified their school as the referral source, also heard reference to the program through other social service providers and through their primary care provider.

Table 7.2. How Teens Reported Finding out about DST

Source of Information	*Count*
School	11
Mother	2
Sister	1
Friend	3
WIC Nurse	1
Doctor	1
Social Worker	1

Initiation of Doula Relationship

I asked women when they started working with their doula through DST. There was large degree of variation in when participants began working with their doula, ranging from beginning at 6 weeks into the pregnancy, where the doula was contacted by the participant (it was her second baby, and she had worked with this doula during her first pregnancy), to a woman who met her doula at a school presentation the day before she was going to be induced at the hospital at 40 weeks of pregnancy. The average time for establishing a relationship with their doula was 22 weeks plus 1 day into pregnancy.

Prenatal Meetings

Doulas Supporting Teens runs the most intensive home-visiting program in Lane County and spends an average of 45 hours in the prenatal and postpartum period with each client. In my sample, participants met with their doula an average of 7.6 times prenatally, ranging from once, in the case of the client mentioned above who met her doula the day before an induction, to a high of meeting with the doula 25 times. These meetings function to establish a personal relationship between client and doula, to

educate the mother about her options, to learn how to best support the client, to learn about the dynamics of client's personal relationships, and to work to define client's vision for her babies birth. These extended relationships allowed the woman and her doula to develop a trusting relationship which is characteristic of most doula client relationships (Lantz et al., 2005), and may allow for trust and cues of social support that assignment in active labor does not allow.

Support During Labor

Women were also supported during labor by their doulas—typically their doula met them either at home (n=4; excluding two home birthers) or at the hospital (n=14) and stayed with them throughout the labor and birth. Nineteen of the women felt that the amount of time their doula spent with them was ideal, 1 woman felt that her doula was difficult to reach, and was displeased with the amount of time spent with her. DST Doulas stayed an average of 1 hour postpartum, usually leaving once breastfeeding had been established, and the mother was comfortably resting, or visiting with family and friends.

Postpartum Support

Postpartum support is also offered, and in my sample participants met with their doula an average of 4.3 times in the postpartum period. This number is smaller than the prenatal visit number—in part because meetings tend to taper off following the birth, but also because women who remain involved with DST often connect with their doula through the parenting classes offered, and did not count those as individual home visits.

Three of the women indicated that they had relatively few postpartum visits, but saw their doula at the parenting classes on a weekly basis. Another three of the women indicated that they stayed in close contact with their doula by phone—through conversations and texting—but did not have a great deal of direct contact.

Attendance at Classes

Participants exhibited substantial variation in the amount of involvement they had with DST classes and functions. 16 of the 20 women (80%) were involved in either childbirth or parenting education classes through DST. Of these, 8 participants attended both the childbirth and parenting class, 4 attended only the childbirth class, and 4 attended only the parenting classes.

Of the larger population of teens who receive DST doula services, less than half of them attend prenatal and parenting classes (personal communication, Iris Bicksler). This rate of attendance is still substantially higher than the rates of prenatal class attendance by teen parents in other documented samples (Lu et al., 2003). Table 7.3 summarizes the levels of participation by interviewees in DST's classes and activities. 1 of the women I interviewed indicated that she was bored with the 1 childbirth class she attended and chose not to return, I did not count her among the 12 that attended childbirth classes. Of the remaining 7 women who did not attend DST's classes, they offered varied reasons for not attending: 1 attended a hospital childbirth class because she was unaware of DST's childbirth classes, 4 were not comfortable with childbirth education classes in a group setting regardless of class make-up, the remaining 2 indicated that the

educational component they received from social services providers and from meeting one-on-one with their doula was sufficient.

Table 7.3: Participation in DST Classes and Activities (note: percentages add to over 100% because class/activity categories not mutually exclusive)

Class or Activity	*Count*	*% of total sample (n=20)*
Childbirth Education Classes (CBE) Only	4	20%
Both CBE and Parenting Classes	8	40%
Parenting Classes Only	4	20%
DST Bi-Annual Functions	4	20%
Walking Group	2	10%
Pregnancy Photos/Belly Casting	2	10%

Birth Characteristics and Outcomes

Prenatal Care

19 participants could remember when they began receiving prenatal care from a provider of any kind. Initiation of prenatal care ranged from 4 weeks to 16 weeks of pregnancy. The average initiation of prenatal care was 10 weeks and 2 days. I only asked participants about initiation of prenatal care, not about the number of visits or other factors to determine the "adequacy" of that care.

Rate of Preterm Birth

On their website DST cites a preterm labor and birth rate of 4.8%. As mentioned above, this statistic should be interpreted with caution because the sample size is unknown due to catastrophic data loss; however, their rate of reported preterm birth does

appear to be about half that of Oregon's reported long-term rate of 9% for preterm birth among teen mothers (Oregon Center for Health Statistics, 2010).

In contrast, among the overall population of young women who receive the doula support through DST, the preterm birth rate hovers around 5% of births (Iris Bicksler, personal communication). In my DST interview sample, two participants (10%) gave birth prior to 37 weeks. One woman birthed at 36 weeks +3 days, and the other, a mother of twins, birthed at 35 weeks +1 day.

Birth Weight

As discussed in chapter three, data indicates that teenage pregnancies are also at higher risk for low birth weight infants. Low birth weight is defined by the World Health Organization as less than 2500 grams (5.8 lbs) at birth (Kramer, 1987). In the DST interview sample, after removing data from one set of twins and from another participant due to unclear birth weight response of 8lbs 18 ounces, the average birth weight was 7.3 lbs (n=17). Infants ranged in weight from a low of 5.13, to a high of 8.13. There were no mothers in the sample with low birth weight infants, except for the twins—which weighed 5 lbs and 5.1 lbs at birth, which is not considered below average for identical twins (Alexander et al., 1998). Figure 7.1 shows birth weight and number of weeks of pregnancy at birth. Even in this small sample, the linear relationship between gestation period and birth weight can be seen even though none of the infants would be classified as low birth weight babies.

DST's website states that 4.8% of infants born with DST doula support were born with low birth weight. Despite the caution necessary when considering this statement, it

is nearly half of reported rate in Oregon (9.3%) for low or very low birth weight infants born to teen parents (Ventura, Abma, & Moser 2008).

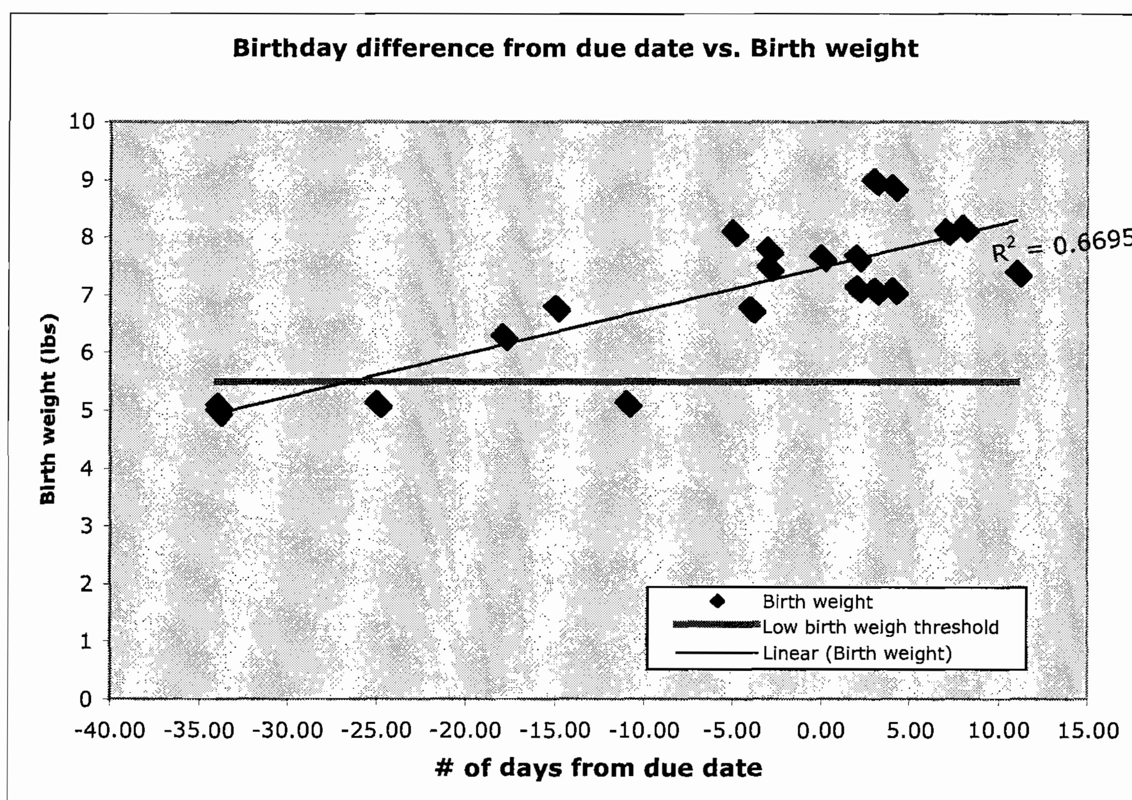

Figure 7.1. Birth Weight plotted by deviation in days from estimated due date

Infant Length

Infant length is considered to be a developmental marker, and while there are not strict parameters to define infants as being short, in large samples studying intrauterine growth retardation, infants are considered "short" if they fall two standard deviations below the average length of "normal" infants in the sample. Shortness may be an indication of intrauterine growth retardation, or other complications. Infants in the DST interview sample (n=21) averaged 19.9 inches in length (range from 18 to 21.5 inches).

No infants in this sample would be considered small for gestational age based on length (Karlberg & Albertsson-Wikland, 1995).

Complications

Participants were asked whether or not they experienced any complications associated with their pregnancy. Following my goal of eliciting mother's perceptions of their births as opposed to clinical definitions, I allowed mothers to interpret "complications" freely. Three participants identified preterm labor as a complication. Of the women who indicated that they experienced preterm labor, only the participant who had twins gave birth to her babies prior to the 37th week of pregnancy. Preterm birth is defined as birth before 37 completed weeks of pregnancy. The woman who gave birth to twins birthed at 35 weeks plus 1 day[8], which is early, but not considered abnormal for twins. One of the women experienced Intrahepatic cholestasis of pregnancy (ICP)[9] a complication of pregnancy that only occurs in .5% of all pregnancies. Two of the women reported being very sick with viral infection towards the end of their pregnancies, something that would not likely be defined as a complication by a health care provider. No other complications were reported.

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[8] One other participant had her child before term, but she did not experience bouts of preterm labor prior to giving birth.

[9] Intrahepatic cholestasis of pregnancy (ICP) is caused by an impairment of bile secretion in the liver. As the bile backs up in the liver, the level of bile acids increases in the bloodstream. These bile acids are deposited in the skin causing the intense itching.

Location for Birth and Type of Care Provider

Table 7.4 provides a summary of birth location and the primary care provider for the birth. In my sample, 8 of the twenty women interviewed (40%) birthed with midwives, and 12 (60%) birthed with obstetricians. Of the 8 who birthed with midwives, 6 (30%) birthed with a Certified Nurse Midwife (CNM) in a hospital setting, and 2 (10%) birthed at home with the support of a Direct Entry Midwife (DEM). The rate of both of midwife attended and out of hospital births is significantly higher than the general population in Oregon, where 15.5% of births are attended by CNMs and only 2.5% of women birth in an out of hospital setting (Ventura, Abma, & Mosher 2008). Although the proportion of DST teens who birth with midwives as opposed to obstetricians is not a statistic DST has tracked in the past, both Iris and Shea indicated that the proportion of midwife attended birth in my sample seemed higher than the women they generally work with.

Table 7.4. Location for Birth and Health Care Provider

Home Birth with Midwife	*Hospital Birth with Nurse Midwife*	*Hospital Birth with Obstetrician*
2	6	12

After attending childbirth classes and learning about the risks of medications and interventions, all but one of the women in my sample expressed a desire for natural birth. Because DST doulas have worked with a number of different care providers in sEugene/Springfield area, and because they either know or have a sense for which providers are most supportive of natural birth, doulas sometimes encourage their clients

to explore other options if a clients' desires do not mesh well with that of their obstetrician's typical practice. Among my sample of teen moms, two chose home birth with a home-birth midwife. One of these received care from the midwife throughout her pregnancy, and never saw another care provider. The other woman switched to a home birth midwife at 41 weeks, when her obstetrician wanted to artificially induce her labor but she did not want to have a hospital induction. She ultimately birthed at home 11 days past her due date with the support of a home birth midwife.

All of the other women who birthed with the support of midwives n=6, birthed with the support of hospital-based midwives. When Sacred Heart hospital was located in downtown Eugene, there was a free-standing birth center associated with it. However, this center has been closed since the hospital moved to Springfield in August 2008, and the midwives practiced in the hospital there until a new birth center opened in May 2010. In contrast to home-birth midwives, hospital-based nurse midwives are allowed to administer intravenous fluids, antibiotics, narcotic pain medication, and pitocin to increase the frequency of contractions. In Oregon, home birth midwives are allowed to administer pitocin to deal with postpartum hemorrhage, and run an IV, but cannot administer any pharmacological pain medications, or antibiotics.

Coping Techniques

Participants were asked to describe things that they did in labor to help them cope. These coping techniques ranged from lying in the bed to sitting on the ball to using the Jacuzzi tub. Participants generally indicated that their doula helped them be more active in labor, and get into varied positions. In contrast to typical medicalized birth, where

laboring women typically engage in only one or two natural coping techniques through labor, participants supporting the DST sample reported engaging in an average of 6 coping techniques while they were in labor (Table 7.5).

Table 7.5. Number of Participants that Used Various Coping Techniques

Technique:	*Count:*
Birth Ball	16
Jacuzzi	15
Walking	14
Massage	8
Rhythmic Rocking	8
Breathing	7
Vocalization	7
Shower	6
Hands and Knees	5
Meditation	3
Rocking Chair	3
Affirmations	3
Distractions	3
Standing	2
Squatting	2
Music	2
Aromatherapy	2
Counter Pressure	2
Position Changes	2
Hot Packs	2
Other*	4

* Other consisted of: prayer (1), eye contact (1), visualizations (1), and keeping the room quiet and dark (1)

Number and Perception of Support People

When asked who was there to support them when they gave birth, participants reported an average of 4.1 people supporting them during labor and birth. Table 7.6 summarizes the categories of support persons, and the frequency of which they were mentioned by the 20 interviewees. The number of support persons reported ranged from

1 to 7 persons. 19 of the 20 women who had doulas reported their doula as a support person present when they gave birth. The remaining woman birthed so quickly upon arriving at the hospital that her doula arrived just as the woman's baby was being born; her boyfriend primarily supported her for the birth.

Three of the eight women who had a midwife present at the birth reported the midwife as a support person. Notably, of the twelve women who received care from an obstetrician at the birth, none reported their doctor as a support person, and only one woman mentioned her nurse. One participant reported her doula being her only support person, and five of the women had 6 people present supporting them. Women in the sample reported being supported at the birth of their baby by a variety of different people, most commonly the father of their baby (n=13) and their own mother (n=13). Other support persons mentioned by the participants were: the birthing mother's father (n=5), sister (n=5), friend (n=3), grandmother (n=3), the baby's father's mother (n=4), the baby's father's grandmother (n=3), the baby's father's sister (n=2), birthing mother's aunt (n=1) and a coworker (n=1).

Participants reported 13 of 20 fathers were present at the birth and involved with the mother and the child. At the time of the interview, which varied from 3 months to nearly 2 years following the birth in question, 10 fathers were still involved with the mother and the child.

Table 7.6. Reported Support Persons During Labor

Support people during labor	*Count*
Doula	19
Father of baby	13
Mother of participant	13
Father of participant	5
Friend of participant	3
Participant's grandmother	3
Baby's father's grandmother	3
Midwife	3
Baby's father's sister	2
Aunt of participant	1
Nurse	1
Coworker	1

Pain Medication

Nine of the 20 interviewees had some form of pain medication during labor. Of the nine, three received intravenous narcotic pain medication only, two received both IV narcotics and epidural anesthesia, and four received epidural anesthesia only. 11 of the participants gave birth naturally, without pain medication. Table 7.7 summarizes the number of individuals and the types of pain medication received.

On their website, DST cites an epidural rate of 37%, compared to approximately 75% of women birthing in the general population who receive epidurals (Listening to Mothers, 2007). In this sample 15% received IV pain medication alone, 10% received both IV and epidural anesthesia, and 20% of participants received an epidural alone. Over half of the participants (55%), had a natural birth and did not receive any type of pain medication.

Table 7.7. Frequency of Use for Various Pain Medications During Labor

	Type of Pain Medication			
	IV Narcotic	IV and Epidural Anesthesia	Epidural Only	None
Number of Participants	3	2	4	11
Percentage of Participants	15%	10%	20%	55%

Birth Interventions

In this sample, 2 participants received episiotomies. One of the women that received an episiotomy had an infant with poor heart tones who was born "white and floppy," the other did not give an indication as to why the episiotomy was cut. The woman whose baby was born with poor tone and low Apgar scores also suffered from a broken collar bone as he was being born.

Three of the women had assisted deliveries. Assisted deliveries are births where either a vacuum extractor or forceps are used to assist the baby in emerging from the mother's birth canal. In this sample, only vacuum extractors were used. One of the infants in the sample born with the assistance of a vacuum was born with a broken arm. The participant indicated that her infant was frequently uncomfortable due to the arm and had difficulty nursing as a result of the injury.

Only one infant in the sample was born by caesarian section. The infant was the second baby of a set of identical twins who went transverse[10] in the uterus after the first

[10] Transverse presentation means that an infant is lying horizontally in the uterus presenting with a back, arm or side. Vertex, or head down presentation, is the infant's position in nearly 95% births.

twin was born. The obstetricians attending the birth tried unsuccessfully to turn the infant into the vertex position, but after several failed attempts, the mother was placed under general anesthesia and her baby was born by caesarian.

DST's website cites an average caesarian rate of 12.7% (http://doulassupportingteens.org/). This average was based on birth outcomes from 2007 and 2008, or roughly 35 births. However, as mentioned earlier, this data must be interpreted cautiously, as DST lost their database in 2009, and the exact sample size is unknown. However, the rate does give us a sense for the difference in caesarian rate between DST and the United States generally, where the national average is nearly 33%.

Length of Labor

I asked participants to describe the length of their labors. Although some women needed no additional prompting, for those that did, I asked them to think of their labor starting, when they actually knew that it was labor and that they would have their baby. Length of labor may be considered a relatively subjective measure, because some women begin counting at the first contraction, while others begin counting when their contractions were strong and regular enough to recognize an established labor pattern. Either way, the sample participants' reports indicate an average of approximately 12 hours of labor, varying in length from 4 to 36 hours. The Listening to Mothers II survey (2006) found the average women's labor to last approximately 10.2 hours, with 11 hours as the median for first time mothers.

Breastfeeding Initiation, Duration, and Anticipated Duration

Breastfeeding was initiated in 100% of interview participants. Duration of breastfeeding was variable; the shortest was 2 weeks of breastfeeding before switching to formula, the longest 19 months. At the time of the interview 8 participants were currently breastfeeding, of these women, 5 anticipated continuing until their baby was one year old, and 3 planned to nurse until their infant was 2 years, or until the child was ready to wean. Of the women who had ceased breastfeeding at the time of the interview, the average duration of breastfeeding was 24 weeks or approximately 6 months. This is higher than the national average where only 43% of women are still breastfeeding to any extent by the time their baby is 6 months of age.

Chapter Summary

Data from my interview sample of 20 women suggests that the support of a DST doula is associated with positive birth outcomes. These findings are in line with results from other studies of doula support. However, DST's doulas often-lengthy relationships with their clients make this organization unique, as do the teen-focused teen childbirth and parenting classes, which draw many of DST's clients. Both the intensity of the doula/client relationship, and the classes may function to signal higher levels of social support than found in other evaluations of doula programs.

CHAPTER VIII

RESULTS PART III

Qualitative Analyses of Interviews with DST Participants

In this chapter, I present data from semi-structured interviews with 20 teen mothers who received support from a doula for the birth of their child. These interviews were analyzed for content regarding participants' perceptions of their experience relevant to the following research questions, which are addressed in this chapter in the following order:

1) What are the challenges associated with teen motherhood?
2) How does doula support impact mothers' perceptions of their births?
3) How do teens describe their relationship with their doula, and how does the doula/client relationship impact other inter-personal relationships?
4) What were the participants' perceptions of DST as an organization, and how involved were they with DST's classes and activities?

Although participants varied in birth outcomes, levels of detail in birth stories, and how they articulated elements of their experiences in reference to the doula/client relationship, several themes were repeated in many of the interviews. I used content analysis to identify reoccurring themes relevant to each of the preceding research questions, both in my semi-structured interviews and in the participants' birth stories.

Challenges Described by Teen Mothers:

Changed Communities, Relationships, and Priorities

To better understand the modern context of teen pregnancy and the social landscape in which the young mothers I interviewed were living and raising their children, I asked mothers to describe the "biggest challenges that they faced as teen parents." Through analysis of the interviews, both in response to the question of challenges, and descriptions of frustrations and challenges that emerged in the course of their birth stories, I found that social issues made up 6 of the 9 cited challenges faced by the teen mothers, accounting for 33 of the 39 times that different issues were cited (84%). The most frequently cited challenge was loss of friends; followed by being a single mother; parent's negative reaction to the pregnancy, and subsequent frustration with their dependence upon their parents for support; assistance and child care; lack of support from the baby's father; and isolation/lack of community with their non-pregnant peers (Table 8.1). Challenges that were not directly stated in terms of social issues followed in frequency, including post-partum depression, responsibility of caring for the baby, and finding a job. Note however that all three of these stated challenges are closely related to issues of social support in evolutionary contexts discussed in Chapter 2 (e.g., Hagen, 2002; Hagen & Barrett, 2009; Hrdy, 2000; 2005; Hill & Hurtado, 2009), and, if these are included as social issues, 100% of the stated difficulties are related to social issues of some type.

Table 8.1. Challenges Identified by Teens of Becoming a Parent

Challenge	*Times Mentioned*	*% of issues mentioned*	*Number of Individuals*
Losing friends	12	30.77	7
Being a single mom	5	12.82	5
Parents' negative reaction to pregnancy	5	12.82	5
Dependence upon parents	4	10.26	4
Father of baby unsupportive	4	10.26	4
Isolated from non-pregnant peers	3	7.69	3
Postpartum depression	2	5.13	2
Responsibility of caring for baby	2	5.13	2
Finding a job	2	5.13	2
TOTAL	39	100%	--

To put this in context, loss of friendships, and lack of community were the two most frequently cited challenges of being a teen mom, mentioned a combined total of 15 times by 10 individuals. Indeed, responsible behavior during pregnancy and as a parent makes it difficult to keep up with many of the activities that non-pregnant teens are involved with. Lisa, for example, articulates this challenge, "Still having friends. I've lost like 90% of my friends, because they are all still kids, you know, and I can't be." Rebecca and her partner also described losing friends after finding out she was pregnant: "most of them have stopped talking to us because, oh God! You're parents and your not fun anymore! You can't go out, everything is about the baby, so like none of my friends really talk to me anymore."

Both of these women articulate the fact that their lives and priorities were forced to

change as a result of becoming teen parents, and that this negatively impacted their peer support group. Another mom, Rachel, describes being chastised by a friend for her status updates on Facebook, a social networking site:

> I have Facebook and I always post things like, 'man I love breastfeeding, or I'm so glad I'm breastfeeding' and my sister, I have a twin, she told me the other day '[our friend] told me to tell you that not everybody is a mom and not everybody loves to breastfeed…' and I was like, 'I'm sorry, I don't even think about it, it's just how I feel.'

The loss of friends, difficulty relating to teens that were not parents and the changed priorities that accompany the birth of a baby were echoed throughout other interviews as well.

Another mom, Quinn, describes losing her friends and the pressure that this placed on her relationship with her boyfriend:

> I got pregnant when I was so young, and just having my friends, you know, kind of separate themselves from me. Feeling like I didn't have someone to be close to beside [my boyfriend] so I had to really rely on [him] and it was really kind of hard on our relationship.

Not only did her friends drift away because of her pregnancy, but Quinn also felt that her relationship with her partner suffered because of her increased dependence upon him for support.

Mazzie also describes the difficulty of becoming a mother "Giving up hanging out with my friends all the time…like my best friend that I had, I barely ever talk to her anymore. Like she's totally on a different thing than I am doing." Mazzie was a self-

described "partier" before getting pregnant with her daughter. She liked to go out and have a good time, and even articulates pregnancy as "saving" her from her partying lifestyle and the problems that that may have led to.

A couple of other mothers spoke about not being able to see their friends or go out the way that they used to—how having a baby changed their priorities, and that this was a difficult adjustment for them. Claudine describes the challenge of her priorities changing with the arrival of her child:

> You have to take care of someone else before you. Like diapers or shirt? Diapers… You've got to grow up fast and I don't hang out with my friends as much, because I have someone else, a bigger responsibility to take care of.

Although Claudine described still getting a lot of support from her family, especially her mother, she described the challenge of having to put someone else in front of herself, her wishes, and her social life.

In addition to losing support from their friends, 5 participants described struggling with their parent's negative reactions to their pregnancies, and 4 described the difficulty of being open to accepting assistance from their families. Moriah describes her mother and grandmother's reaction to finding out that she was pregnant:

The first thing that came out of my mom and grandma's mouth was uh, 'are you getting an abortion?' I said 'I dunno.' My grandma sent me hate mail for a while and disowned me for the majority of my pregnancy. She just didn't want to have anything to do with us because she thought that I was the worst person ever for bringing a kid into the world because I was such a hypocrite. Because I didn't want to be a teenage mom, but I

am. SO that kinda sucked. And my mom came around, she gave me the silent treatment for a while, but she came around eventually.

One of the women Elena, described "telling her mom" she was pregnant as the most difficult thing about becoming a mother.

Aside from their parent's reactions to the pregnancy, participants also described struggling with the dependence that having a child generated between themselves and their parents, at a time when they would normally be moving away from their parents. Piper, identified receiving support from her parents as the most difficult thing about becoming a mother:

> One of the biggest challenges has been getting over myself. Because, I uh, feel like I've felt like I have to be going out and going to school and getting a job and moving out, and doing all these, and ...because of all the support I've been getting, the hardest part has been accepting it, accepting help.

Just from the two hours I spent interviewing her, it was clear that Piper was a fiercely independent young woman, very devoted to her son, and whose parents were supportive of her getting the space and time that she needed to be a good parent to her child. She articulated both appreciating their support but also struggling with receiving it, and how she felt guilty and conflicted about being there, raising her son instead of out being a struggling single mom like other young moms that she knew.

Indeed, several of the young women articulated feeling conflicted about their desire for independence, and the dependence that having a child created on their parents, at a time when they would normally be moving away from their families, and preparing for the separation that becoming an adult and graduating from high school typically brings.

As Bailey describes,

> Before I got pregnant I was like this crazy rebellious teenager and just doing my own thing, and when I got pregnant I was home every night and I started to make dinner and I think it was a huge change.

This struggle of changing their identity—and attempting to find themselves at the same time they are becoming parents was identified by Bailey, another participant. Bailey said "being a young mom, trying to find myself as a person in this world on top of being a new mom." Indeed, several of the young mothers identified the struggle of finding themselves, finishing their own education, growth as a challenge while also meeting the needs of their child. Several mothers also identified the conflicted emotions of wanting to be more independent of their parents, but that having a baby suddenly made them more dependent upon them for childcare, resources, and made them be home around their parents more than they were used to before becoming pregnant or becoming parents.

In addition to struggling with increased dependence upon their parents, participants also described struggling with being single parents, and dealing with unsupportive fathers. As Katrina, a mother of three kids describes her greatest challenge as "being a single mom and not having help whatsoever from any of their dads." Another mother described the difficulty of separating from the father of her child:

> It's hard. The hardest thing was that he was here for a while, and now he's gone. So it was like all of this help, and now there is nothing, which is almost worse than there being nothing from the very beginning, you know?

Interestingly the challenges most often described by participants; loss of friendship or

community, parental disappointment and dependence, as well as the challenge of being a single parent or dealing with an unsupportive partner—all focus on elements of social support. Indeed, losing friends, dealing with your parent's disappointment and frustration with your pregnancy in addition to being a single parent for half of the participants at the time of the interview, suggests that teen pregnancy creates a climate of social instability, where teens may struggle with finding reliable supportive relationships that they can trust.

Quantitative Summary of Teen Mothers' Perceptions of How Doula Support Impacted Their Birth Experiences and Outcomes

Table 8.2 summarizes the predominant themes that emerged through the content analysis of how mothers' perceived that doulas impacted their birth experience. Informational and social support was mentioned by 90% of individuals—and were mentioned almost twice as frequently as any other form of support (81 and 70 mentions respectively). Emotional support was next highest, with 43 mentions, referenced by 85% of participants, and most participants referenced emotional support multiple times. Availability and physical support were mentioned by 65% of individuals, however the frequency with which they were mentioned dropped to 32 and 24 mentions, respectively. Finally, advocacy was mentioned by seven out of 20 interviewees, a total of 13 times—although it's numbers rank well below other forms of support, the way participants articulated this type of support made it stand out.

Table 8.2. Elements of Support by Individual

	Types of Support: Frequency Mentioned						
Participant	*Info.*	*Social*	*Emotional*	*Availability*	*Physical*	*Advocacy*	*Total*
20	*10*		*2*	*5*		*1*	*18*
21	*7*	*11*	*2*	*3*	*1*		*24*
22		*1*		*3*			*6*
23	*2*	*3*	*3*	*3*			*12*
24	*3*	*2*	*1*	*2*	*1*		*9*
25	*10*	*7*	*3*		*1*	*3*	*21*
26	*6*	*4*	*6*	*4*	*4*	*1*	*24*
27	*2*	*6*	*3*		*2*		*13*
28	*4*	*2*	*1*	*2*	*1*		*10*
29	*5*	*5*	*3*	*2*	*2*		*18*
30	*2*	*5*	*3*				*10*
31	*2*		*3*			*1*	*5*
32	*1*	*2*	*3*			*4*	*10*
33	*2*	*2*		*1*	*1*	*2*	*7*
34	*5*	*3*	*3*		*3*		*15*
35		*2*	*1*		*2*		*5*
36	*6*	*3*		*3*	*1*	*1*	*13*
37	*4*	*5*	*3*	*2*	*1*		*15*
38	*1*	*3*	*1*	*1*	*4*		*10*
39	*9*	*5*	*2*	*1*			*17*
Support Total	*81*	*70*	*43*	*32*	*24*	*13*	*262*
% of participants	90%	90%	85%	65%	65%	35%	---

Qualitative Summary of How Teen Mothers' Perceptions of Doula Support Impacted Their Birth Outcomes and Experiences

In this section of the results, I describe in detail the following five salient themes that characterize teen's perceptions of doula support.

1. Knowledge and confidence
2. Unbiased, non-judgmental support

3. Availability, accessibility and attention
4. Physical support
5. Advocacy and empowerment

Knowledge and Confidence

Participants indicated that working with a doula substantially increased their knowledge and confidence in the birth process, as well as their knowledge regarding their options for birth. Table 8.3 describes the most commonly identified themes in regard to the type of informational support provided by the doula. The table identifies the total number of times a theme was mentioned, and the number of individuals that identified this type of support.

Table 8.3. Salient Features of Information Support

Type of Support	*Times Mentioned*	*Number of Individuals*
Doula increased mothers knowledge	18	10
Being informed of options	18	9
Doulas as a source for reliable information	15	9
Increased confidence	7	6

In total 19 of the 20 women I interviewed mentioned an increase in knowledge about the birth process and/or of the options available to them when giving birth. Ten participants described doulas as having increased their knowledge about the birth process, and nine about their options for birth. Many of the women that said that doulas increased

their knowledge of the birth process or birth options, also indicated that this knowledge translated into increased confidence in their ability to give birth.

For example, one participant describes how the information and education she and her partner received from her doula shifted her beliefs about birth: "I think the most important thing she did was just kind of educate me, and [my boyfriend]." She goes on to say that:

> She gave me the confidence to just be so intuitive and just totally trust all my instincts, because, I mean, I think now so many people think that their idea of birth is in the hospital, ya know, hooked up to all these machines with all these doctors around you and I think that people totally lose sight of the fact that before we had all this modern medicine, people were being born every day and labor is something that is totally natural and a woman KNOWS what to do. If she's able to relax and be in that state, she knows what to do and [my doula] helped me feel confident enough to trust my instincts.

Shelby also describes the information she gained through prenatal meetings with her doula, and how this knowledge impacted her decisions and choices about birth: "I learned a lot like about childbirth and what like different medicines there are" she goes on to say "when I first got pregnant I figured I was going to need the epidural and like I was just scared of the pain, but then [my doula] explained, she made it sound not that hard, and like you can do it." For Shelby working with her doula not only helped her define what she hoped for in her birth, but also gave her confidence that she could achieve the type of birth she desired.

With increased information, participants described being empowered to make different choices than they had seen their family members, their peers or situations that are commonly depicted in mainstream media. Lisa describes a change in her belief about her ability to cope with the pain of childbirth after meeting with her doula,

> When I found out I was pregnant with [my daughter] before I even knew about DST, I knew right away that I was getting an epidural, I didn't think that it was possible to do it without it. And then when meeting with [my doula] learning that it is possible to do it without—and uh learning coping techniques and everything was what made me do it natural. Definitely if I didn't know about DST, I would have had an epidural.

Rebecca also describes the shift in what she wanted for her birth, and in her interactions with her doctor that working with her doula impacted "I probably would have gotten drugs, like an epidural or something because I didn't know all the risks of it." Rebecca's view of what she wanted for her labor and birth changed as well as her interaction and belief about how she worked with the doctors:

> I was always very intimidated by the doctors, I figured, you know, they're doctors and they know what's best. But they don't. It's me, it's my baby, and I know what's best. She [my doula] helped me figure that out and helped me to stand up for myself.

In addition to increasing the knowledge that the women themselves had, participants described their doulas as being a source of reliable information throughout their pregnancy and birth. Elizabeth describes both an increase in knowledge about the birth process, and the relief that knowing someone she had worked with was going to be

there in supporting her in labor "it made me more calm. Just like knowing the information from someone that really knows about birth, knows what's going to happen, knows how to be calm during the birth." Elizabeth attributes the information that she got from her doula, and the expert support that she received, with keeping her calm during labor and birth. Mazzie describes the information her doula provided her with:

> [My doula] actually knew what she was talking about...she was like professional help, if I had like a serious question that I needed to ask, instead of not knowing or getting some weird answer from someone in my family, I could get a good answer.

Many of the participants described the information that they got about pregnancy, labor and birth from their doula as being more accurate and reliable than information they got from family members.

Participants also described talking with their doulas about topics ranging from circumcision to pain medications, coping techniques, writing a birth plan, and talking them through the different situations that might arise during labor. As Quinn describes:

> [In one-on-one meetings] we would kind of alter what we did in class to just individual they would say 'how do you feel about pain medication? How do you feel about a caesarian? What would you want if you did have to have a c-section?' So that way they could be there to advocate for me if [my boyfriend] couldn't advocate for me, or to advocate for [my boyfriend] and me.

Bailey also describes both the information and the support her doula provided "I think she's more informed than all of my other support, I think that's about it, she was really supportive like emotionally too, but she knew a lot more than anyone else, more than my

mom did even." Both Bailey and Mazzie, specifically indicated that their doula gave them quality information that differed from the information that they received from their families, especially their mothers, who they identified as providing outdated or inaccurate information.

Six of the women I interviewed indicated that the relationship with their doula made them more informed about their options for a care provider. That is, through classes and discussions with their doula they became more informed about their options in terms of the various settings and care providers available to attend their birth, the different options for natural birth, and medicated births, coping mechanisms for birth in terms of where they could give birth (between birthing with an OB, family practice doctor, at the birth center in the hospital, at the freestanding birth center, or at home with the support of a home-birth midwife) all of these options were present in my sample. To learning more about their options for how to birth—birthing naturally, natural coping mechanisms, who could be there, different methods of coping, what her rights were as a laboring woman.

Indeed, 5 of the women in my sample changed care providers at some point during their pregnancy with encouragement from their doula. Five of the women who birthed with the support of midwives switched from the care of an obstetrician to the care of a midwife at some point during their pregnancy. Their reasons for switching were varied, but most often they felt that their doctor did not give them the time they needed, made them feel intimidated or ashamed, of because they were concerned that their care provider would not be supportive of the natural birth that they desired. One woman,

Rachel, explains her experience with an OB at 12 weeks of pregnancy, when the OB believed that she was having a miscarriage:

> And he kept saying, 'when you have a miscarriage this weekend, when you start bleeding, when you get more cramping' and he totally thought that I was having a miscarriage and then I didn't have a miscarriage! And I was thinking, I don't want someone who has this point of view—the medical point of view—I want someone who has a compassionate, caring, personal relationship with me, and that was when I decided that the midwives would be best.

Another woman, Anna, described her interactions with her obstetrician,

> I didn't like her AT ALL. She was really rude and she never really told me nothing about my kid inside me. I was like I don't even know nothing about this, I'm just a teenager and you're supposed to be telling me stuff. And I don't know, I just quit going there and started going to the midwives and they were way better than the place I was going to.

Another young mom, Elizabeth, reported feeling judged by her OBGYN as the reason that she chose to switch care providers, "I went to the OBGYN I definitely got some looks that I was incapable of it—I was 16 and pregnant—people were there to judge you. And the midwives were definitely not like that." Elizabeth went on to describe how her interactions with the midwives were different than with the doctors—"The midwives were better people, people, you know? Better at communicating, talking and keeping a smile on their face." For many of these young women, the decision to leave a care provider who didn't fit their needs, didn't answer their questions or make them feel respected, represents an important turning point in their pregnancy where they switched

from a passive patient, to an active consumer, exploring their options for care providers and becoming more informed generally about their options for birth.

As Shelby describes—"[my doula] told us about the midwives when we decided that we wanted a natural birth…we went and tried them out and really liked them." Shelby also felt that the midwives were more "personal" with her, and that they also "told me more than the other clinic did and they were just nicer." Working with her doula empowered this young woman to explore her options for care, and she ended up having a natural birth—what she desired prenatally—with the care of hospital-based midwives, providers that she felt were supportive of her choices and desires. Many participants indicated that their doula was a key source of information regarding their options for birth. Not only did they know more about their bodies, and about how birth worked, but also they were better informed of their options, and felt more confident in their desires for birth.

Unbiased, Non-judgmental Support

Unbiased and non-judgmental support was frequently mentioned as an impact of doula support. Table 8.4 provides additional information regarding the specific types of emotional support provided under the broad category of emotional support in table 8.1. Nine participants described their doula as providing essential, non-judgmental support, support that differed from the support that they received from family members and other supportive individuals. As one participant described "[My doula] was able to tell me both sides and not have an ounce of judgment towards anything that I chose."

Table 8.4. Salient Features of Emotional Support

Types of support	*Times mentioned*	*Number of Individuals*
Provided non-judgmental support	6	5
Provided unconditional support	4	4
Provided support with postpartum depression	6	5

Teens often noted that their doula was far enough removed from their situation that they didn't feel the doula was imposing her beliefs or opinions on the teen. As Alex states:

> [In contrast to my parents] I trusted that she knew what she was talking about and she was always very non-judgmental so I felt very open to talk to her about anything. I can talk to my mom about something, well she's, of course, going to have an opinion and share it, [my doula] wasn't like that. I could ask her about something and she'd give me a very open ended, you know, here's the pros and here's the cons."

Doulas were also reported to be different from familial support in that they were perceived to be supportive of the teen mothers choices regardless of the doula's own opinions. "I felt like I could talk to her, I felt like I could trust her with helping me make decisions because ultimately she'd still let *me* make them." This quote by Alex exemplifies the trust that existed between her and her doula, and the struggle that often occurs between teens and their parents with regard to who is the parent and who is responsible for making decisions for the new baby.

The importance of unconditional support, and the importance that this support was coming from someone other than a family member, was echoed by Katrina as well: "somebody who wasn't family, and I wouldn't say not, didn't, care but would support me in what I wanted, you know, instead of feeling like I was in too much pain and trying to make the decision for me." Katrina also exemplifies the importance of support that was unconditional, allowing her the space to make decisions for herself and respecting her choices and desires for giving birth.

Lisa also commented on the importance of non-judgmental support and how this was different from the support she received from her parents:

> I think family members um can be more judgmental, you know, they think it's their right to tell you how you should do things. And [my doula] was able to tell me both sides and not have an ounce of like judgment towards anything that I chose and I think that was good.

Lisa differentiates here between the type of support that her doula provides and the type that her family, in this case, her mother provided her; "I think that's the biggest thing, not being judgmental and sticking to my birth plan more than even my family wanted to. Finding the importance of my birth plan for me."

Alex also describes the difference between the support of her doula and her parents. She ended up having a caesarian and explains,

> I could only take one person [into the operating room] and she knew what everything meant and she wasn't going to be too emotionally tied to it, so she could actually focus on what was going on and she was the one who was really

> walking me through it—so both times my birthing experiences have really just been me and the doula.

Doulas seemed to fill an important role here—that of being supportive, non-judgmental, and having an intimate enough relationship with their clients that they knew what the client wanted and could support them in those wishes, but having enough emotional distance that they were able to be supportive without being so emotionally invested that they couldn't provide cues of reliable support.

Depression

Several participants described struggling with depression. Notably, all of the women with multiple children described experiencing depressive episodes following the birth of their second child. As predicted, participants who lost the support of the child's father were also more likely to describe feelings of depression in the postpartum. Participants indicated that many of the types of support provided by their doula helped them cope with these feelings of depression. Indeed, participants described their doula's presence, availability, and attentiveness to the participant's emotional state—all signs of reliable support—were linked to the teen mothers getting treatment and support to help deal with postpartum depression. Women who described struggling with postpartum depression indicated that support from their doula helped them cope with postpartum emotions and realize that they were not bad parents for feeling depressed or withdrawn from their infants. For instance, one mother who had been institutionalized several weeks prior to the interview, described struggling with postpartum depression this way:

> Me and him (her baby's father) split up a little bit and I started raising the baby by myself so I went from having a lot of support and a lot of help to it was me and [the baby] all the time, every day, 24 hours. And it got really hard and I started having really bad thoughts about him and wanting to hurt [the baby].

She and her boyfriend had since gotten back together and were raising the child together again. This participant indicated that her doula was supportive and knew about PPD,

> She (her doula) went through postpartum (depression) so it's easier to talk to someone who has kids, who's been through it, and she comes over and she's offered to take him over night to give me a break, just to sit with me, to take me out of the house, make sure that I'm getting outside...make sure I'm okay. She'll come over; I can go over there. I spent the night at her house once because she invited me. She's there constantly, whenever I need her.

For this participant, the support of her doula was described as crucial to getting the support and assistance she needed to cope with postpartum depression. Indeed, her doula's presence, availability, contact and willingness to help with her son all likely provided signals of available, reliable social support, and were linked to her getting the treatment and support she needed for her depression.

Participants with multiple children also indicated that they struggled with PPD. One mother said that she struggled much more with depression after her second child was born:

> It lasted quite a while—like still to this day—he's 8 months old and I cry over everything, I cry over little things, I'm more stressed out and I think that's why. Because, I think, with [my first child] I was a first time mom but I wasn't working

> or going to school…[but this time] I went back to school and then I also had a three year old running around and I was doing all of that by myself.

Another mother who did not have the support of a doula describes the severe disconnect that she feels with her second child:

> It's hard to even explain the way that I feel to people. My husband doesn't understand it. He's like: 'so you're so depressed about your life that you have to take pills?' And I'm like 'no that's not it, it has nothing to do with that' it's just like, with him I feel like if you had a baby and I was around him a lot—I don't love him (her second son) any more that I love your baby. Like I love him because he IS a baby, not because he's my baby. So when he cries it doesn't hurt. I can let him hurt, I can let him cry and it doesn't bother me. But as soon as [my first son] cries, even now, right when he starts crying it hurts—you know like you do with your baby.

Having multiple children can be an overwhelming prospect for anyone, and mothers in my sample who had two, even three children before turning 20, expressed being both overwhelmed and depressed with the addition of another child. As one mother said about her child, "I just don't have it [love for her second like she did with her first]. I just don't have it with him." For participants who struggled with depression, they indicated that their doula seemed to be an important help in supporting them through the depressive episode as well as helping them get the assistance that they needed.

Availability, Accessibility and Attention

Participants indicated that continuous availability and attention to their lives provided by their doula through one-on-one appointments, phone conversations, and home-visiting were critical to their feelings of support, and positively impacted rates of breastfeeding in the postpartum. The critical dimensions of availability (Table 8.1) are further summarized as four key features in table 8.5.

Table 8.5. Salient Features of Availability

Elements of Availability	*Times mentioned*	*Number of Individuals*
Continuously available	18	12
Importance of home visiting	5	5
Importance of personal attention to participant	6	5
Impacted breastfeeding success rate	5	4

Indeed, the importance of the doula's availability was mentioned a total of 18 times in the interviews, by 12 individuals. DST doulas are typically available by phone anytime, and are on call and prepared to meet a woman at her home or wherever she is birthing within an hour two weeks before and after a woman's due date. This continuous availability was cited both prenatally, when they could be contacted for questions and support, during labor and in the postpartum period. As Rebecca said:

> She was always there for me. If I called her day or night, if I called her at 1am because I thought my water broke...she came here until 4 in the morning when I was having false labor, three times! She just was always here to answer any of

> my questions, help me to speak up for myself, and I learned a lot about pregnancy because of her.

Although the level of support Rebecca describes receiving might not be characteristic of most doula/client relationships it does not seem all that out of the ordinary for the type of support teens receive from their doulas from DST. Mariella also indicated that the availability of her doulas postpartum was an important form of support,

> For the first three months they were keeping in touch with me, they would stop by and visit the baby, make sure that I was doing okay, even now, if I have any questions and I call one of them they still answer my call and let me know the answer to my questions.

Bailey also describes the importance of her doula's availability in the way she transitioned to parenthood:

> [My doula] helped like with me she came over and re-helped me breastfeed, and she gave me advice with mastitis, because I got that, I think she helped me with settling into becoming a new mom, I think she just let it be known that I was okay and that these things are normal and that she's there whenever I need her help.

The importance of availability was also referenced in the one interview I conducted with a woman who had a negative experience with her doula. This negative experience, however, also indicates the importance of availability—this young woman had her child approximately 4 weeks early before her due date and before her doula was technically on call for her. In her interview she expressed a great deal of frustration because her doula was unreachable by phone—" I think she shoulda been there when I called her, I don't think that she should have her phone off *ever* when she's a doula" this mother, who

subsequently trained to become a doula herself and had supported 3 other women in labor at the time of the interview, believed that her doula should have been available for her any time she called and was frustrated that her doula was inaccessible when she went into preterm labor. Although the expectation of constant availability may not be realistic, her frustration with her doula exemplifies the importance of availability to the support provided by her doula.

The availability of the doula was also exemplified by Alex's experience as a victim of domestic violence ending her relationship with the father of her twins:

> When everything happened with the break up and my hand getting broken and all that like you know, she answered her phone at 2am and probably spent a good hour on the phone with me, just talking me through it–telling me that everything was going to be okay, she definitely helped with that.

In addition to the theme of availability, five participants identified the importance of the individualized attention provided by their doula, attention to their feelings and to their particular situation. As Piper describes:

> She made the commitment to being *my* doula, and she really focused a lot more energy on me and I felt more like I was her first priority, whereas other people would talk to me in passing and I still felt really alone, and I felt like I wasn't getting the kind of attention I needed from people. And she would sit down with me and just be completely focused on me. And that was great.

Rachel also articulates the importance of having her doula check in on her life:

> We talked about what was going on with me during my pregnancy at that time, she talked to me about health and nutrition, birth control afterwards, but most of

> the time we just talked about how I was feeling and how, like, my relationship was with [my partner].

Indeed, it appears that availability and attentiveness to the details of participant's family life and the intimacy established between the doulas and their clients signals a different type of support than other providers offer—one that is more intimate and one that signals a level of investment in the woman and her infant that is deeper than a relationship with a doctor or even some types of friendships.

Additionally, 5 of the mothers mentioned that postpartum, home-visiting support of a DST doula was critical to their success with breastfeeding. As one client, Elizabeth said about her experience breastfeeding, "If I didn't have [my doula] I probably would have stopped breastfeeding. Wait, I *would* have stopped breastfeeding if I didn't have her there during ungodly hours of the night." Elizabeth described difficulty breastfeeding and said that when her breastfeeding troubles were at their worst, her doula would come over sometimes twice during the night to help her with feedings. Four young women mentioned the critical role that their doula played in encouraging them be deeply committed to breastfeeding prenatally and 5 credited their doula's home visiting and hands-on lactation support as attributing to their breastfeeding success.

As Shelby states, "She's been over a lot, There was one day when she came over three times in a row because that's the only time [the baby] would latch on was when [our doula] was here—it was weird!" This client indicated that the support of her doula was critical as she and her baby were first learning how to breastfeed and indicated that the fact that her doula was "always there" was key in helping her stick with her choice to nurse her baby.

Even mothers who did not plan to breastfeed their infants, or who did so reluctantly, indicated that their doula encouraged them to nurse as long as they possibly could. This was the case with Mariella who returned to work quickly after her daughter was born, and who did not intend to breastfeed:

> I mean, the only reason I did those three weeks, because my mentality was that I was not going to breast feed, but then they [the doulas] said that the breast milk and the first milk that comes out is the best for the baby. So I mean that's why I did it. Just because those three weeks I just thought it was really important for her to get what ever I was producing and then I just decided to stop, I was, I was done with it.

Physical Support

Participants described their doulas as assisting them with coping and pain management during labor. Interestingly, descriptions of this type of support had far fewer mentions than informational, social and emotional support and generally lacked the richness and detail that was present for other types of support. Table 8.6 describes the two most prominent features described by participants in terms of physical support.

Table 8.6. Salient Features of Physical Support

Types of Physical Support	*Times Mentioned*	*Number of Individuals*
Assistance with coping	6	5
Pain Management	12	8

Descriptions of support tended to focus on ways that the doula helped the women cope with labor, or ways that they impacted the level of pain experienced. As Elizabeth

described “she just helped with pain management and keeping me comfortable.” She describes further:

> Like in the tub, she was here and she’d like put cold clothes on my head and make sure that I was as comfortable as possible in the hospital and stuff. And when I got out of the tub, she was there standing in the hallway, and I’d rock back and forth with the pain, and she rubbed my back.

Claudine describes, “she was really good, just kept telling me to breathe and stuff.” And Elena describes, “she rubbed my back. I think that changed it, it helped the pain go down.”

Shayla also describes the physical support that her doula provided during labor—“we walked up and down stairs and she had an I-pod of music and it was just relaxing and I didn’t have to worry about anything if I needed something she would just go handle it.” Certainly physical support was an important component of the type of support described, however, it is interesting to note that it was described fewer times than other types of support, and the description of physical support was far less detailed and seemed to lack the detail that other descriptions of support included.

Advocacy and Empowerment

The final element described by teens as an element of how having a doula impacted their experiences during the childbearing year, was advocacy and empowerment. Participants described their doulas both as advocates for them but also used language and descriptions of advocating for themselves and their babies. Table 8.7

summarizes both the participant advocating for herself, as well as instances where the doula acted as an advocate on behalf of the participant.

Table 8.7. Descriptions of Advocacy by the Participant

Type of Advocacy	*Times mentioned*	*Number of Individuals*
Participant describes self as advocate	20	10
Describes doula as advocate for self and baby	13	6

Moriah described the ways that her doula impacted her relationship with her doctor:

> There have been quite a few cases, especially with younger moms, where they [the doctors] try to intimidate you, so [working with a doula] gave me the tools so that I knew what she was talking to me about and they weren't trying to talk me in circles—oh they tried—and I got treated like an idiot until they found out I was 17 and in my second year of college, then they treated me more like a human being.

Two of the mothers indicated that their doctors questioned whether or not they could give birth naturally because of their age, something I have also heard several of my teen clients reference. Moriah also describes an interaction with her doctor:

> I wanted an OB downtown because I was living downtown, but I wasn't really sure about her—she didn't think I could do it all naturally. I was like 'I don't want any drugs, I want it to be all natural' I figured if my mom could do it and

> she's smaller than I am, they've been doing it for hundreds and thousands of years and she was like 'okay, we'll see when the time comes'... OH I hated that!

Moriah's frustration with her doctor began as she shared her desires for her birth and her doctor indicated that she doubted that she could achieve the natural birth that she was planning. Moriah also indicated that her doctor "treated her like an idiot" until she demonstrated how well informed and prepared she was for the birth of her son. Lisa also indicated that her doctor didn't recommend a natural birth "when I said that I wanted a natural labor, they said natural labor is doable but we don't really suggest that young moms do it, and I thought that was just crazy." Both of these young women went on to achieve natural births with their care providers.

Several of the interview participants also described how their doula changed the way that their doctor treated them and the way that they interacted with their care providers, Alex explains,

> They didn't act like I knew what I was talking about, and [my doula] really helped there because I DID know what I was talking about and I did know what they were doing—and they just kind of assumed that because I was young I wouldn't know anything about it.

This participant indicated that the support of her doula and the knowledge about birth she gained from her doula prenatally changed the way that she interacted and her confidence level when interacting with hospital personnel.

Several of the young women indicated that their relationship with their doula made them ask more questions of their doctor or midwife. Because they were informed,

they asked about protocols, practices and had more questions for their doctors. One woman Delilah said,

> I definitely asked more questions—I found out about the delaleutin[11] and having a doula made me want to research more stuff. That way I understood more about what I was doing and what was going on… my doctor wasn't, didn't give me a lot of information about the drug they were injecting in my back.

Here Delilah began researching the drug they were giving her to prevent preterm labor, and started asking her doctor more questions about it. "They didn't give me any handouts or nothing" about a drug that had been largely discontinued and had substantial risks. Despite this interaction, Delilah had a positive relationship with her doctor, and believed that her doctor viewed her as more proactive and informed, and that she asked more questions because of working with a doula.

Another participant also indicated that her doula was her advocate with the doctor, and both helped support her as well as assisting her to advocate for herself. As Lisa describes:

> When it came to the doctor coming in like 4-5 times asking if she could break my water, and I'm saying 'I want it to break naturally,' and my mom is like '[Lisa] just let them break your water' and I'm like 'that's NOT what I wanted' you know and [my doula] was like 'don't let them do it if you don't want to, don't' let them keep bugging you and talk you into it. This is your birth!'

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[11] Delaleutin is the trade name of Hydroxyprogesterone caproate, a synthetic steroid hormone for prevention of preterm delivery in women with a history of preterm delivery. The drug was first approved in 1956 and removed from marketing in 1999. Several clinical trials have indicated that intramuscular Delaleutin increases rather than decreases the risk of preterm birth.

Participants also spoke about themselves in terms of advocacy—their birth stories were filled with personal triumphs and examples of them advocating both for the type of birth that they wanted, and for exclusive breastfeeding. Elizabeth describes how she was encouraged to supplement with formula in the hospital,

> When we were in the hospital breastfeeding was absolutely miserable and one thing I really hated was that I wanted to get really good at it—but the nurse, the night nurse—kept saying 'you can give him formula, and he'll be fine' but I know once you give a baby formula it's like then you do the easier thing, so I didn't want to do any of that—I just wanted to keep breastfeeding.

Rachel also describes advocating for herself and getting the support and tools she needed to breastfeed her baby. She had an urgent gall bladder surgery when her baby was 4 weeks old, and she describes going from the doctor's office to the hospital prior to her surgery:

> I was like, okay, well when I get there you need to have a breast pump ready for me, because I need to pump milk so that while I'm in surgery she can eat and he (the doctor) was like 'well if she has to use formula a couple of times, it's not going to mess up her breastfeeding' and I was like 'NO!'

Katrina also describes her belief that her doula's presence helped her get the birth that she wanted— 'her being there kind of let them know not to push things on me, and to follow my birth plan as I wanted to have done and it actually got followed this time with a doula." Katrina felt that the doctors and midwives that had been present during her first two births had not respected her wishes, and believed that simply having a doula there, helped her have the birth that she wanted.

Rebecca also provides a description of advocating for herself regarding the type of induction that her doctor was going to do in the hospital. She had discussed the plan for the induction with her doctor, but when she went to the hospital, the nurse told her something different than what they had discussed. She describes the interactions between herself and the nurse:

> 'She's like NO your doctor says that you're getting pitocin' and I was like 'well go ask my doctor because she wrote the wrong thing then because I am NOT getting pitocin.' And she was like 'well it's in her handwriting I know what she said' and I was like 'well so do I,' and then she was like 'well do I need to go talk to her then?' and I was like 'YES, you do!'

The nurse ended up talking to the doctor who realized her mistake, but Rebecca's description of arguing with the nurse and making sure that she received the type of care that she and her physician agreed upon, was filled with a sense of triumph and accomplishment.

Teens' Descriptions of Their Doula and How She Impacted Other Supportive Relationships

Table 8.8 summarizes how teens perceived the social support received from their doula. Ten of the 20 women I interviewed described their relationship with their doula in familial or friendship terms. They also described the doula as providing critical support for their family, and increasing the involvement of the father of their baby with both the pregnancy and the birth. Doulas, then, appear to provide reliable cues of social support

not only in the support that they directly provide, but also function to make the young women feel better supported by their existing support networks.

Table 8.8. Salient Features of Social Support

Elements of Social Support	*Times Mentioned*	*Number of Individuals*
Participants described doula in familial or friendship terms	14	10
Doula as support for family	18	10
Doula support impacted the father of the baby's involvement	16	10
Doula provided support for romantic relationship	6	5

Doulas Described in Kinship and Friendship Terms

To gain insight into how women perceived their relationship with their doula, I asked how their relationship was different from other supportive relationships that they had during their pregnancy. These descriptions of support often involved familial and friendship terms. Elizabeth powerfully describes her relationship with her doula:

> She was more like family, like I probably consider her more like family than my mom and dad because she was there. She knew what was happening, my mom didn't give birth to me. I was adopted. So she didn't know any of like this kind of stuff—she had no idea, she had NO idea what was going on with me, so having [my doula] there as like a mother figure of knowing like what was going on, what's going to happen, I had a better relationship with her than with any care provider.

Other participants also used familial terms in reference to their doula. Mariella said,

> I dunno how to explain how I felt having them [the doulas] there, but I know it was nothing bad—because they were just there like family, it seemed like we just knew each other from forever, you know how much they care about my pregnancy and how much they just followed through.

Another woman described the physical support she received from her doula in the following way "I'd lean on her and rock and all that kind of stuff, it was kind of like having a sister who would help you with everything."

Another mom described her relationship with her doula:

> I felt like [my doula] was like a mom figure and a friend. So I felt like I could talk to her about—I told you how like my family and even [my boyfriend's] family were like—oh you can't do it naturally, you have to use an epidural, and I felt like I could talk to [my doula] about doing things naturally and she would be totally excited about how I felt all of these primal instincts whereas my family would just be like 'okay…' I guess [my doula] was like a friend too because all my friends were, I couldn't relate to them anymore. And even though [my doula] had never had a baby just being able to hear all of her advice she just really, really reassured me and helped me feel like I wasn't going through this alone.

Shelby described her relationship with her doula as a "good friend. Like a good like older friend with a lot of advice." One young woman, Rachel, broke down in tears speaking about her relationship with her doula:

> Like if I said I was hurting she wouldn't be like you know, you've been hurting all month, get over it, and she helped me a lot with, I dunno, I fell in love with

> [my doula] (crying) I don't even know why I'm crying. I just hope it's a relationship that's going to be around for a while.

Clearly, these young woman felt intense connections to the doulas who attended their births and assisted them both prenatally and in the postpartum.

Two of the participants who described being involved in other social services, stated that their doulas were different from other social service providers, as Katrina said "I was in a lot of community agencies and I think with her I was a lot more comfortable. Um it was more like having a friend come over than having a caseworker or something come over."

Rebecca described her relationship with their doula in the following way:

> Well with our WIC nurse, that's just what she was, a WIC nurse, she just came over and she left and that was that. I feel like [our doula] became a friend, like I can still talk to her she still wants to be friends and meet up, and she doesn't want our relationship to be over just because she's not our doula anymore. So I feel like I definitely got more support from her.

Doulas Increase Paternal Involvement

In addition to providing one on one support for their clients, participants also indicated that their doula helped to make the father's of their baby more involved in the process. Previous research on fathers and doula support has found that fathers tend to be more involved and supportive during labor and birth with the presence of a doula (Bertsch et al., 1990). This was also the pattern among the women I interviewed as well. Of the 20 women in my sample, 13 of them had the father of their baby present at the

birth. Of the 13, 10 stated that having a doula made the father of the baby more supportive of her and more helpful during labor and birth. It is important to note, however, that at t he time of the interview, only 10 of 20 fathers were still actively involved with their children. Perhaps not surprisingly, the three women whose child's father had ceased being involved in the time between birth and the interview had less positive things to say about the father's level of involvement and support during the birth.

For women where the father attended the birth, and who were still involved with the fathers, described their partners as more comfortable and more involved because of doula support. One mother indicated that with her first child (the father of her second baby, but who was present for her first birth as well) her partner hardly participated because he was like "oh well you've got a doula, they can do everything and I don't need to do nothing." With her second birth she describes:

> [My doula] gave him information as well as me, and so he knew what to expect this time, and he felt more confident and was able to, you know, help me to walk, help me to do a lot of stuff.

Another young woman, Lisa, described the way that her doula increased her partner's participation and made him more comfortable during the birth:

> There was times when like, I'd be sitting in the tub, and then I decided to get out so...my boyfriend was trying to help and then a contraction would start, and I'd like sit down because they were getting so bad and I couldn't talk through them and he'd say 'oh my gosh, I don't know what to do! I'm trying to help her but she won't even get up' and then, like, I couldn't even talk, and [my doula] was like you've got to calm down, she can't move she's going through this, and he's never

> been in a room, he don't know anything about it, so it was just like he had NO clue. So it was good because [my doula] could explain things when I could not talk. Because he was getting overwhelmed, he'd never seen this happen before.

Several participants described the ways that their doula's guidance and suggestions helped their partners to be more involved during the labor and birth. Another mother described her partner's increased involvement as she labored:

> I don't think he would have known, like, how to handle it. He did a really good job, like, I think he was amazing, but I think [our doula] helped him to be more of a support than he would have been if she wouldn't have been there.

She went on to elaborate, "because you know guys, they want to fix things, we talked about that a lot like while I was pregnant and so she helped him kinda like fix some of the pain that I was in." Indeed several women echoed sentiments about how their partners wanted to be helpful, but didn't know how to support them without guidance.

Quinn also described the way that her doula had instructed her partner to touch her prenatally, and how helpful his touch was to her during labor:

> She taught us a lot of the coping techniques that we used and um she taught us you know a woman in labor doesn't like to be rubbed like this (indicating upwards) and he totally did that (rubbed her in a downward motion) and it felt awesome, and he never did this (upwards motion) because he knew, and he was just a really awesome support system for me because of what [our doula] taught us we both knew sort of what to expect and it was a lot less scary.

Another mom described how her doula helped her partner be more supportive to her emotions prenatally,

> she helped to kinda teach him what to expect and to teach him what I was going through. I think a lot of guys have a lot of misconceptions about pregnancy and they don't totally understand that you can't control your hormones and you're going through so many hormonal peaks and so many hormonal lows, that you really can't control your mood swings, and getting emotional because you feel fat or you feel bloated or whatever um, I think that she kind of taught him what to expect more, and that made our relationship more positive, and she continues to help us now, which is awesome.

Participants overall indicated that doula support through DST helped make fathers play a more active role in the pregnancy and get them to realize the seriousness of what is about to come their way. It's no doubt difficult to articulate what having an infant is like, but attempting to get the fathers to have a better sense of what having an infant will be like, and the hormonal landscape of the postpartum period, may help to smooth that transition.

Doulas also assisted with complext social situations, Anna described how her doula encouraged the father of her baby to attend the birth,

> Because one of the things that he was scared of is that he's over-age and he's not legally here so um, she helped him understand that they weren't going to do anything if he was there [present for the birth of his child]...So I think she basically got him more comfortable too—so for most of the times that she met with me, he was here and he kind of sat and learned and he actually asked some questions about the baby and what would happen with me when I went into labor, stuff like that. I think it changed it in a good way.

Doulas knowledge of the hospital system, and familiarity with what would be asked of the father allowed her to encourage the father to attend the birth regardless of his citizenship status.

Rebecca described how her partner's expectations of his role during labor changed as they worked with their doula, she states:

> One time before I gave birth he said that he felt helpless that he wasn't sure what he was going to do other than sit in the corner and watch me push out a baby that was all me, that was my job and he didn't know what he was supposed to do. And [our doula] made him participate in everything, he was there for everything, when I was getting sick, when I needed something to drink, when I was hungry when I was having my contractions, he helped with the baby, he slept in bed with me.

Both she and her partner credited her doula in helping him transition from someone who didn't expect to be involved with the birth to someone who was very capable and interactive throughout the labor and birth.

Doulas Mitigate Relationship with the Baby's Father

In addition to making fathers more involved with the preparations for and birth of their child, 5 of the women indicated that having a doula helped clarify and define their relationship with the father of their baby prenatally. Two of the women indicated that they might not be together and co-parenting now without the help and guidance of their doula. Moriah described the way that her doula impacted her relationship with her partner "definitely helped a lot, we probably would be together if it weren't for [our

doula] we probably would have broke up and been our separate ways quite a while ago."
She went on to elaborate, about her partner's attitude towards the pregnancy:

> Before he took it more or less as a joke. But with a doula there, having someone backing me up and saying 'this is kind of a BIG thing' you know you need to get your head out of your ass...But having someone else kick him in the ass as well, saying you need to get on board before your kid is born.

Moriah felt that her doula helped her partner understand the responsibility involved in having a child—and helped him be more supportive, both prenatally, during labor and postpartum.

In addition to mediating relationships, doulas' skills in reflective listening, helped several mothers leave negative relationships. One of the young women, Alex, indicated that her doula helped her to leave an abusive relationship and provided support as the relationship ended violently during her pregnancy. Alex had three children with the assistance of DST doulas, a son when she was 15 and twins when she was 18. Our interview focused on her experience giving birth to the twins, although she also made mention of her first child and the support she received with that pregnancy and birth as well. Reflecting on the relationship with the father of her twins she said:

> [My doula] affected it in a good way because [she] was one of those people who would watch out for me to—and she was like, I'm not so sure that this is a healthy relationship. Not that she's nosy, but like if I talked to her about something, she'd point out that maybe that wasn't quite okay, so she gave me somebody else that backed me up that what he was doing probably wasn't okay. And as soon as she had said something he was very much like 'I don't want you to see your doula

anymore because she doesn't like me' and it was important for me to have a doula too, and so that was one of the things that I kept my foot down about, that I was GOING to have a doula. And so I think that kinda helped give me a boost. And when everything happened with the break up and my hand getting broken and all that, like you know, she answered her phone at 2am and probably spent a good hour on the phone with me, just talking me through it—telling me everything was going to be okay, she definitely helped with that.

Another young woman, Elizabeth, echoed similar sentiments to Alex. She left the father of her baby while she was pregnant, and made the decision that she did not want him to attend the birth of their son. In her description of these events, she articulates how conversations with her doula had a large impact not only on her leaving her partner, but also in processing whether or not she wanted him at the birth.

> Talking with my doula made me realize that I didn't need someone like him in my life. I was able to talk to [my doula] about my whole situation and just tell her what was going on and she'd give me advice and listen, and be like, 'okay, well, this is going on, what do you think you should do?' It wasn't really like advice, it was just making me realize that having me talk about it, and having her be like 'okay, um hum.'

Elizabeth suggests that talking with her doula made her realize that her partner's controlling behaviors were a form of abuse "I realized that I didn't need that sort of abuse in my life… I became in control of that situation." Elizabeth identifies conversations with her doula as the catalyst to leave an abusive relationship, and to take charge and control of the amount of contact that her son was having with his father.

Doulas Enhance Support from Teens' Families

Participants also indicated that their doula encouraged others to be more involved during the birth, regardless of the father's level of involvement. Women in the doula-supported sample had an average of 4.2 people present during the birth, including their doula, the father of the baby (if he was involved), mothers, aunts, other family members, and friends.

A number of women indicated that having a doula was key in helping their families support them, and that an important element of the support that their doula provided them with was either helping their support people know how to support them, or the doula supporting their families during intense times in labor. Participants also described feeling relieved because the doula was also there to support their family members, especially their mothers. Ten participants spontaneously mentioned that the doula was key in terms of either helping emotionally support their family (n=5) or in terms of helping their families know how to better support them (n=5).

Five participants mentioned that it was very difficult for their family members, specifically their mothers, to watch them give birth. For example one participant, Lisa said "my mom gets really emotional when she sees one of her kids hurt, which is, you know, natural, so when she gets upset when I'm upset that doesn't always help. When I'm in pain crying and she's over there crying ..." While Lisa did not begrudge her mother's emotional response to her labors, she didn't feel that it was supportive, or that it assisted her in getting the birth that she desired.

The theme of the doula helping the participant's mother appeared in several other interviews as well "[my doula] would be there rubbing my mom's back and telling her it was okay. She was really good support for both of us." Another participant mentioned: It felt nice to have someone there other than my family so that all the pressure wasn't on my family and on my boyfriend—I think that she helped my mom really a lot to cope with it all, because it was really intense for her.

One mother who was in the kitchen and passing through the house during the interview had this to say about the doulas presence at her daughter's birth "she ended up being my doula (laughing) Piper didn't really need or want anyone during labor but [her doula] and I sat there holding hands." Another participant, Alex, said that her doula, helped her parents deal with the fact that she was pregnant at age 15 helped them process the changes that this would bring to all of their lives. "She not only helped myself, but also my parents kinda cope with it. That it's [teen pregnancy] not that uncommon and gave them some coping techniques. She really helped with the family." Helping support the parents as they deal with the emotions of finding out that their daughter is pregnant, and helping them deal with the emotions of supporting someone they love during labor were important roles that participants identified their doula playing for the mothers in this sample.

Additionally, women identified that their doulas were critical in terms of helping their families know how to support them more effectively. One of the things that doulas strive to do is to encourage fathers and other support people to be as active as possible in supporting the laboring woman—indeed, setting up this support structure during labor may be helpful in terms of giving fathers and family members the confidence and the

skills to help in the postpartum as well. Many of the participants indicated that the doula was critical in terms of giving their support persons tools to help them be supportive during labor. Another mother, Shayla, said: "[my doula] supported me and my family if they had any questions. I thought that was really good, that she was there for me AND them not just like for me, because they were probably freaking out too." As one woman, Mazzie, said: "she mainly let my mom and the baby's dad help me out, and she gave them ideas and helped them." Another mother, Rachel said:

> I think not just for me, but for my whole family [she] made everybody more comfortable with what was happening because my mom has a lot of anxiety problems and she talked to my mom a little bit and kinda especially during the labor helped everybody feel more comfortable and gave everybody jobs.

Rachel went on to say that "People weren't bothering me, I had one person to report to and she helped everybody else figure out how to support me." Rachel's comment indicates that the doula helped get her the mental space she needed to be in labor, without having to "come out" of labor to talk to her family, but while also allowing her family to know how to be supportive to her.

Moriah also described her doula as helping her support people know how to be helpful without coming to her for guidance, she describes:

> My mom is tiny, but she's just in your face…I was worried that my mom was going to push [my boyfriend] out of the way and not let him do anything or help with anything. I couldn't monitor everyone or like make everyone get along, because I was kinda preoccupied at the moment (laughs) so [my doula] kinda did

that balancing act and made sure that everyone knew what they were supposed to do.

Here the doula played an important part in family dynamics and helping keep tension and conflict between family members at a minimum so that the mother could focus on laboring. Indeed, aside from providing physical and social support during labor themselves, doulas also appear to encourage cues of support from fathers and other family members as well.

Perceptions of DST as an Organization and Level of Involvement in Classes

The final question for the qualitative component of this research was to gain insight into the way that participant's perceived support from not only directly from their doula but also from the other elements of the organization such as the childbirth and parenting classes. As I discussed in the quantitative section on class participation, 13 of the participants I interviewed attended the childbirth classes, and 8 of those 13 went on to attend the parenting classes. Of the women that participated in the classes through DST, 11 of them mentioned that classes and the support of their doula increased feelings of community and of supportive friendships. Indeed, as described earlier, because loss of friends and community was the most commonly cited challenge by participants, DST appears to generate new, supportive relationships between not only doulas and teen moms, but to help form a new community for the teen mother. Table 8.9 summarizes the number of individuals, and the number of times these individuals mentioned that DST impacted their feelings of support and sense of community.

Table 8.9. Participants' Perceptions of DST

Elements of Social Support	*Times Mentioned*	*Number of Individuals*
DST increased feelings of community and friendship	12	11

As one participant described:

> The way I would describe having a doula is not necessarily her individually but the whole of DST I think. It was just really complete package, because DST gave me all the information and she gave me all the emotional support, and I think she just gave me an extra layer of comfort.

Lisa also described her involvement with both her doula and with DST as helping to fill the gap as her friends disappeared:

> Having a doula helped, but having DST have the parenting groups has helped a lot, because like I'm saying, I lost a lot of my friends, well a lot of people in the parenting group, all of them are young moms so they can relate. You become friends with a lot of them—it's a good networking thing to find people.

Quinn describes how she struggled with the loss of her friends, and reached out to DST for community,

> All my friends kind of started to go away from me because I couldn't necessarily do all the college things that they were dong, and I didn't want to, so, I kind of felt like I needed some other kind of support group and I wanted to find maybe people with had a little bit more in common with me. I e-mailed Iris and she was like you can come to this meeting, and I talked to Shea, and when I talked to Shea on the phone I like kinda told her what was going on, and I remember, I broke down and

> was like, you know, I feel really alone.

Quinn also describes how DST helped her in "knowing there were other girls or younger girls going through the same thing as me." Since Quinn and her partner were in college at the time they had their baby, she describes participating in DST's parenting and prenatal groups and wanting to set an example—wanting to "show that you can make it through college…AND be a mom." This is an excellent example of the type of mentoring behavior and support that exists through DST and the pregnancy and parenting groups.

Lisa also credits the support that she received from her peers at DST as giving her the courage to have her baby the way she wanted to:

> I think it was a lot [my doula] but I think it was also going to the birthing classes and having another girl my same age around me, giving birth, and her telling her story and saying that she was able to do it natural—gave me the courage—'cause you know, if another fellow person can do it then I know it was doable.

In this situation, the information that Lisa received from her doula changed the way she envisioned giving birth—and the support and community found through her prenatal classes empowered her to believe that she could achieve her goal of having an un-medicated birth. She has had two un-medicated births with the support of a doula.

Piper also described her friends disappearing, and how her doula and other teens filled the gap,

> I was really lonely, it felt like most of my friends were like 'woah, this is all too new and weird' and were starting not to come around as much, so seeing my doula was a real highlight for me, it made my attitude and energy levels totally change.

Piper also describes the camaraderie she felt and the support from the other teens at the childbirth classes:

> [My doula] said something about a free childbirth class and I was like FREE, yeah! Awesome! So, like, I signed up for that as fast as I could and I found that (the childbirth class) really, really helpful throughout the whole thing, just because I could go and commiserate with other pregnant moms and it taught me a lot of stuff that I didn't realize that I didn't know.

Elizabeth also describes her experience attending the parenting classes "the parenting classes, that's where I met [my three best friends]..." It seems that DST's classes, events and the peer support which naturally arise out of these groups help fill the gap of disappearing friends, and community that many of the teens identified as the predominant challenges of teen pregnancy.

CHAPTER IX

DISCUSSION OF RESULTS

This dissertation evaluates teen mothers' perceptions of how support from a trained doula impacted both birth outcomes and their feelings of support during the childbearing year. If, throughout our evolutionary history, the presence of supportive individuals during labor, birth, and postpartum resulted in fitness benefits, then mothers should have evolved to be sensitive to indications that supportive individuals were present. The presence of supportive individuals likely not only functioned to improve immediate birth outcomes by decreasing infant and maternal mortality (Trevathan, 1999), but may also signal to the mother that there are adequate levels of alloparental support to embark upon childrearing.

As a biological anthropologist who became a doula over 5 years ago, I became interested in functional explanations for why doula support impacts birth outcomes. Although numerous, randomized, controlled studies have found significant impacts of continuous doula support for both mothers and babies there are still only speculative explanatory models offered for why doulas are linked with positive effects. My goal for this project was to describe and evaluate an evolutionary model of human birth as an ultimate explanation for improved birth outcomes generated by doula support. I evaluated this model by conducting interviews with teen mothers who received doula

support for the birth of their baby. The interviews were designed to explore the challenges described by teen parents; to evaluate teen mothers' beliefs about how and why having a doula impacted their birth outcomes; to contextualize the doula/client relationship; to evaluate teen's perceptions of DST as an organization and how it's structure might function to facilitate community and cues of social support among the women who participate in classes and events.

Birth in the United States today can be an isolating experience for women. Most women choose to birth in a hospital setting, surrounded by unfamiliar care providers, novel machines, protocols, and procedures. In many areas, child-rearing support networks are sparse to non-existent, and teen parents, in particular, may have unstable support systems. In our current birthing context, doulas may function to mimic evolutionarily relevant cues of available alloparental support and resources.

I chose to focus on teen mothers because unstable social environments may make them highly sensitive to the presence of supportive individuals. The intensive support offered by DST doulas, often beginning early in pregnancy and extending into the postpartum, made the doula services available through DST particularly appropriate for testing an alloparental model of doula support.

Results suggest that support from DST doulas not only provide salient cues of alloparental care, but also provide education and informational support that help teens navigate the often-confusing landscape of medicalized birth. Finally, doulas may help with the social isolation associated with birthing in a culture where delayed birthing is the normative pattern.

The Landscape of Teen Pregnancy

In the United States, becoming pregnant as a teenager can result in a variety of medical and psychosocial challenges. Although becoming pregnant as an older teenager may not carry inherent biologic risks (Kramer, 2010; Stevens-Simon, 2002), the cultural expectations surrounding the timing of first reproduction, and the psychosocial stresses of early pregnancy may increase the level of risk overall (Logsdon, Gagne, Hughes, Patterson, & Rakestraw, 2005). Both my experiences supporting teen clients in Juneau, as well as the interviews with DST participants, suggest that the majority of teen mothers experience pregnancy as a time of social upheaval. Participants described losing friends and social isolation from their former peer group as the foremost challenges of becoming pregnant as a teenager. Women in the interview sample also described their parents' negative reactions to finding out that they were pregnant, and uncertainty about their partner's willingness and ability to provide support (if he was involved at all).

Research on females' response to stress suggests that women tend to seek out supportive friendships and relationships to help them cope with stressful events (Taylor et al., 2000). Thus, precisely when these young women may most be in need of friendship and support, they are instead experiencing tumultuous relationships and few cues of support.

The maternity system in the United States compounds unstable or unclear messages of support for teens. The medical system of birth is not set up to provide support from a caring individual who the pregnant woman knows and trusts, as the alloparental model would suggest to be ideal. Five-minute appointments with an OB once a month through 30 weeks of pregnancy are unlikely to provide cues of reliable

support, indicative of an environment that would encourage long-term investment in an offspring. Perhaps tellingly, when asked about support during labor not one participant mentioned their doctor, and only one participant mentioned the support of their nurse. Although I did not ask participants to specify the type of support they were referring to, the context of their comments made it clear that the support they were describing referred to individuals who were personally interested in their well being. Several participants expressed feeling very attached to their doctors and respecting their clinical expertise, however, not one described the care they received from their doctor as supportive.

In contrast, over half of the mothers in the interview sample described their doula as one of the only positive avenues of social support during pregnancy—as one woman said, "she was the only person who told me that I could be a successful parent."

How Is Doula Support Perceived by Teen Mothers?

Much of the supportive care provided by a doula prenatally, during labor and in the postpartum likely signals the types of supportive care traditionally provided by kin and women experienced in childbirth. While the positive impacts of a doula's care during labor has been well established, most research on the impacts of doula support has been outcome based—that is, it has evaluated the impact of labor support on birth outcomes, rather than evaluating the mechanisms connected to the positive outcomes (e.g., Campbell et al., 2006; Klaus et al., 1986; Sosa et al., 1980). The primary goal of this project was to assess the ways that teen mothers believe that having a doula impacted their birth experience and outcomes. Although the majority of speculation regarding how

doulas function to impact birth outcomes has focused on stress reduction (Campbell et al., 2006; Klaus et al., 1986) this was not articulated by participants in the current project.

Physiologically, emotional stress in labor has been found to decrease blood flow to the uterus and placenta and is associated with decreased uterine contractions, slower dilation, and longer labors (Lederman et al., 1985; Lieberman, 1992; Simpkin & Ancheta 2000; Wuitchik, Bakal & Libshitz, 1989). Since doula support is associated with faster labors, lower rates of complications, and fewer interventions overall, it is possible that the presence of a doula may function to reduce stress hormones. If doulas do in fact function to reduce stress in the laboring woman then one would expect to see evidence of stress reduction in the way that a woman articulated the impact of support, and in measures of stress hormones during labor. To the best of my knowledge, the only two studies to date have attempted to evaluate doulas impact on stress response in labor or in the postpartum have not found any effect of doula support on stress response (Hans, 2005; Hofmeyr et al., 1995). Neither the Chicago Doula Project (Hans, 2005) or Hofmeyr et al.'s (1995) study found that doula support impacted stress levels in a laboring or parenting mother. However, neither of these studies accounted for between subject variation in baseline cortisol levels; cortisol is highly reactive to social interactions, individual baselines, and fluctuates diurnally (Liggins, 1994; Alehagen et al., 2005; Grajeda & Perez-Escamilla, 2002). Hofmeyr et al.'s "pre-delivery" samples were collected only once per woman, and at various stages in participants' labors. A single sample, at various points in labor is problematic because labor and emotional stressors are well known to impact stress levels (Alehagen et al., 2001). Further research that more accurately measures maternal stress

response to labor and the impacts of doula support on physiological stress markers will be an important step in further evaluating the impact of doula support on birth outcomes.

Despite speculation that stress reduction is responsible for the association between doula presence and positive outcomes, of the women I interviewed, only one mother mentioned that her doula functioned to reduce her stress level in labor. Another mother stated that working with a doula decreased her levels of fear, however, decreasing stress and or fear was not how interview participants articulated the support that they received. Although stress reduction, may represent a proximate explanation for how doulas impact outcomes, this was not a theme that was articulated by participants.

Instead, when describing the relationship with their doula, participants focused on characteristics of support that are associated with reliable cues of support by a trusted individual. That is, they described the types of support that would likely have been provided by kin or close friends, throughout our evolutionary history. Research on female responses to cues of friendship suggests that females may psychologically interpret cues of friendship as cues of kinship (Ackerman, Kenrick, & Schaller, 2007). The following themes emerged from participant interviews with regard to how having a doula impacted their birth experience. Doulas provided: 1) increased knowledge and confidence, 2) a trusted source of unbiased, non-judgmental information and support 3) a person with availability and accessibility to the teen 4) physical support during labor and 5) support which assisted teens in advocating for themselves and their infants.

All but one of my 20 interviewees indicated that their doula increased their knowledge about childbirth and helped provide them with accurate information regarding labor, birth and infant care. The sole exception was a teen that gave birth prior to 37

weeks, when her doula was not yet on call for her. The informational support provided by doulas is likely similar to the types of information transmitted generationally in non-industrialized societies. Since the presence of supportive individuals during birth all but disappeared through the early 80s, and the technology and landscape of birth changes so rapidly, the support systems that do exist for teen mothers, may not provide reliable or accurate information. Teens also described the information that they received from their doula was described as increasing their confidence, and clarifying their desires regarding their birth experience. Many of the teens contrasted the information they received from their doula with the information that they got from their family. The described information coming from their mothers and other relatives as outdated or inaccurate, and based on their own experiences giving birth in the hospital many years before. Doulas were also described as nonjudgmental, and unconditionally supportive of their decisions. Nonjudgmental support was also identified to be different from familial support and input—as family members frequently voiced their opinions or tried to influence decisions. The tensions between teens and parents as a result of pregnancy, may make having someone with some level of separation from the family important, both for their distance from the situation, as well as for their level of expertise with current birth practices.

Another element of support articulated by participants was the continuous availability and accessibility of their doula. Doulas were described as always there to answer questions, talk when a client was in crisis, able to do home visits to assist with breastfeeding, answer simple questions at odd hours, and ultimately that the doula was accessible when the teen felt she needed support. Participants contrasted the care and

availability of their doula with other care providers, and described their doula as someone who was attentive to their feelings, emotions, and to the dynamics of their personal relationships. While the current maternity system may not give reliable cues of support, doulas availability and the attention that they provide to teen mothers may signal support, while also helping teens to navigate the maternity system. By expressing interest in interpersonal relationships doulas likely provide cues of friendship that are not provided by any other care provider. The doulas also frequently called to check in on their clients—something that also seemed to further indicate that they were there as support, and interested in the teen's lives and wellbeing. This description supports a model of birth where women were aided and supported by close friends and relatives.

Teens also described their doula as providing physical support during labor—they assisted with pain management, helped them change positions, assisted with comfort measures. Although physical support was a significant category, it is interesting to note that it was described less frequently, and with less detail and enthusiasm than other types of support. This may be because the doulas worked to encourage the father and other family members to be the primary providers of physical support, or it may be because physical support was less important to them than the other types of support they received from their doula. In the few other qualitative studies of doula support, physical support has been listed as highly important, however, in many of these situations, labor is the only time that the doula and client have contact with one another (Campero et al., 1998).

Finally, participants indicated that their doula both advocated for them with care providers, and helped them advocate for themselves and their baby. Given the current environment for birth in the United States and care providers perceptions of young

mothers, both being informed, and having someone as an advocate, may change the dynamic and experience a young woman has with her care providers. Doula studies which have assessed observer effects in labor situations, have found that simply having a woman in the room during labor impacts birth outcomes, perhaps by improving the type of care that a woman receives (Kennell et al., 1991). Participants indicated that as they became better educated and knew more about their options for labor and birth, they felt more confident both indicating their preferences to their doctor, and because they were informed, they felt like they had a voice in the care that they and their baby received.

Increased knowledge, cues of support and friendship, as well as physical and emotional support, all characterized the relationships the teens described with their doulas. It appears that doulas provide critical informational support to help navigate the modern obstetric landscape, and overcome some of the social obstacles encountered with teen pregnancy while also providing cues that there is adequate positive social support available to embark on childrearing.

Support for Fathers and Families

Previous research on father involvement and doula support has found that the presence of a doula increases the father's participation in the birth and signals investment in both the relationship and the child to the mother (Bertsch et al., 1990). All of the women who were still in a relationship with the father of their child (n=10) at the time of the interview, indicated that the presence of their doula positively enhanced her partner's participation in the labor and birth. A recent study of paternal involvement during pregnancy found that father involvement during pregnancy significantly reduced the rate

of obstetric complications and infant mortality (Alio et al., 2010). Alio and colleagues, (2010) suggest that father involvement may cause women to be more invested in their pregnancies, more likely to attend prenatal visits, and to take better care of their overall health. Increasing father involvement, which provides cues of paternal support, may be an important way that doulas positively impact birth outcomes.

Participants also indicated that the support of their doula helped their families be more supportive and involved. To the best of my knowledge, this is a component of doula support that has not previously been evaluated; yet it was mentioned by over half of interviewees. Similar to the way that doulas increased paternal involvement, participants reported that their doula was key in helping their families know how to best support them during labor. Doulas were also described as important in assisting parents and families adjust to the fact that their teen was pregnant, helping to normalize the experience, as well as providing emotional support for the family during labor.

In addition to providing social support, doulas also appeared to facilitate increased signs of investment and support from both the father of the infant as well as the woman's family. Mobilizing and increasing already existing support networks may be one way that doulas positively impact birth outcomes, and increase the mother's feelings of support and commitment.

Doulas Supporting Teens

Doulas Supporting Teens is a unique support network for pregnant and parenting teens, with impressive impacts on birth outcomes as well as teen's perceptions of support. DST provides both childbirth and parenting classes geared and open to teenaged parents,

participating teens reported the importance of peer support and new friendships established through the classes. Pascali-Bonero (2003) describes the importance of social support from individuals experiencing similar life events in their work with trauma survivors. DST's childbirth and parenting classes generate an environment of openness, and a place where teens feel comfortable asking questions and gaining knowledge about their bodies, their pregnancies, and options for birth that simply do not occur in classes where participants are from all age groups. These classes may also assist teens in dealing with the social isolation, and the shame associated with early childbearing by generating a community of peers with a common interest in childbearing.

Teen mothers indicated the importance of the entire organization, as one mother said, "The way I would describe having a doula is not necessarily her individually, but the whole of DST, I think. It was just really a complete package, because DST gave me all of the information and [my doula] gave me all the emotional support, and I think she just gave me an extra layer of comfort, an extra back-up, I knew there was going to be somebody else there who could help." DST not only provides one-on-one support but also a new network of supportive relationships—a place where mothers could meet other young moms who are in similar situations.

Postpartum Support

Evolutionary models of postpartum depression suggest depression signals a need for, and serves to elicit, additional support and assistance from other individuals (Hagen, 1999). Because of potentially low levels of support from the father and family, teens may be at a higher risk for struggling with postpartum mood disorders (Logsdon,

Berkimer, Simpson, & Looney, 2006). Several interview participants described struggling with postpartum depression. In line with evolutionary models, all individuals with multiple children described experiencing depressive episodes following the birth of their second child; and participants who lost the support of the father, also were more likely to describe feelings of depression in the postpartum. Participants described their doula's presence, availability, and attentiveness to her emotional state: all signs of reliable support, as linked to improvements in their feelings of depression, and with getting the treatment and support that they needed.

Limitations of the Study

Certainly a sample size of 20 women who received doula support does not lend itself to measurable outcomes of birth outcomes generalizable to other situations. However, positive outcomes associated with the support of a doula have been well established, and the overall goal of the project was to assess women's perceptions of doula support impacted teen's birth experiences. Additionally, interview participants were self-selected, which may mean that women who had the most positive outcomes, or who had the most positive perceptions of their doula and the support that they received from DST were the ones who chose to participate in the project. This is an important consideration, however, I did have one woman that described a negative experience with her doula, and doula care received the highest satisfaction rating of any care provider in the Listening to Mothers Survey II (2006).

My involvement with DST in the past may have also had some impact on the content of the interviews. Although I never provided direct service to any of the teens in

my interview sample, several of them had heard me mentioned through DST, and a couple of them knew past clients of mine. Although I made it clear that I wanted to hear about their experiences, good or bad, associated with doula support, knowing that I once volunteered with DST or that I was a trained doula may have impacted the information that they presented to me. Although I repeatedly stressed the confidentiality of the interview, I had two participants who expressed negative views say, “you’re not going to tell my doula this, are you?” The one participant that I interviewed who had a particularly negative experience with her doula was concerned that I would not want to talk to her since she was not going to have positive things to say about working with a doula. Although I did my best to alleviate women’s concerns about confidentiality, this concern may have limited what interview participants were willing to share with me regarding their experience receiving doula support.

Finally, one of the initial goals of this project was to contrast teen mother’s perceptions of support against a matched sample of mothers who did not receive support. Although I interviewed 7 teen mothers who did not have the support of a doula for their labor and birth, this did not constitute a representative enough sample to compare the two groups in a systematic way. Further qualitative research of the impacts of doula support, might include matched samples of doula supported and non supported groups to evaluate differences in the ways that individuals from each group articulates levels of support. This type of study would also provide insight into the amount of assistance doulas provide, and to what extent they seem to motivate fathers and other family members to increase support.

Future Directions for Research

There is still much to be done in the way of research on doula support. Additional evaluations of the functional mechanisms by which doulas impact birth outcomes are needed. Likewise, carefully conducted studies of maternal stress in labor, and whether or not doulas impact physiologic markers of stress would further our understanding of the proximate mechanisms that impact birth outcomes.

If doulas function to signal levels of social support needed for alloparental care and investment, then the length and intensity of the relationship with the doula should impact outcomes and perceptions of support. Since the majority of studies on doula support have assigned support in labor or upon arrival at the hospital, research on community-based doula projects would help determine if increased rates of contact function to improve outcomes and perceptions of support. Aside from evaluating doula support, it would be interesting to know whether DST's model of linking peer support through childbirth and parenting classes with intensive doula support, provides different cues, or outcomes than does the more restricted window of doula support addressed in mother other studies.

Another potentially valuable line of future research would be to compare the doula's and client's perceptions of how doula support impacts birth outcomes. Insight and perspective into how doulas themselves believe they impact birth outcomes, paired with maternal perceptions of support, may provide a more complete and complex understanding of how doulas impact outcomes.

Finally, additional consideration needs to be given to the impact of doula support in different birth locations. Does continuous support from a doula also improve

outcomes in less interventive birth settings such as freestanding birth centers? If doulas function to signal social support, there should be improvements in birth outcomes regardless of the setting, particularly for populations who lack supportive relationships. Although there is substantial variation in the amount of labor support provided by midwives, it would be interesting to evaluate whether or not doulas and midwives have different impacts. Do midwives and doulas signal the same types of support? Further, more information is needed regarding how the politics and policies of obstetric practices and the "culture" of birth at a given hospital, impact the effectiveness of doulas. Studies regarding differences in birth outcomes based on providers' philosophies may provide additional insight into and why doulas impact birth outcomes.

CHAPTER X

CONCLUSION

Throughout humans' evolutionary history women gave birth in familiar environments surrounded and supported by close friends and kin (Davis-Floyd & Cheyney, 2009). As birth transitioned into a medicalized event that typically occurs in the hospital, these systems of support and familiarity disappeared; however the cognitive mechanisms, which recognize such levels of support, remain. This qualitative study of teen mothers' perceptions of doula support suggests that women are carefully attuned to the levels of support around them as they labor and give birth. The lack of a supportive person during labor may function to interrupt evolved systems that calibrate maternal investment or reproductive outcome to the social resources available to the women. Indeed, cues of adequate levels of support may be the mechanism by which doulas facilitate improved birth outcomes. Further research, which attempts to assess the functional reasons for why doula support is so efficient in decreasing rates of complications during childbirth, is a critical next step in research on birth and doula support. This research suggests implementing low or no-cost doula support programs where mothers are particularly at risk to improve outcomes for both mothers and babies.

Critiques of the Doula Movement

Because most Americans choose to give birth in the hospital with little support from family and close kin, more and more women are turning to doulas for support prenatally, during labor, and in the postpartum. The entrance of doulas into the birthplace, however, has not been without critique or conflict. Because doulas provide the information, time, and hands-on care that is notably lacking in our maternity system, some scholars argue that the very presence of a doula represents a "vote of no-confidence" in current medical practices (Block, 2007). This dynamic has drawn negative attention to doulas and has even led to them being banned in some obstetric practices. Feminist and birth activists critique doulas for identifying as advocates for natural birth (Lantz et al., 1995) but practicing primarily in hospital settings where they function to maintain the status quo of medicalized birth, rather than changing the system that their presence critiques (Norman & Katz-Rothman, 2007). In spite of this critique, doulas often are simply meeting their clients where the majority of American women are—birthing in the hospital with an obstetrician. What I find to be the most persuasive critique of doulas is that DONA prescriptions for code of conduct does not allow doulas to speak up on behalf of their clients, or act on information or knowledge that they may have, even if it is information that is not being provided by a client's care provider. In this sense, doulas perpetuate a female stereotype of feigning lack of knowledge, and acting subservient to doctors, nurses and others in positions of power (Norman & Katz-Rothman, 2007).

Doulas have also been critiqued for their "embarrassingly simple" 3-4 day long trainings, as well as a lack of oversight present in most professions which provide support

to pregnant women (Norman & Katz-Rothman, 2007). However, if, as the results of this research suggest, doulas improve outcomes by providing genuine cues of social support, their paraprofessional status may be a key element of their effectiveness. More specifically, participants articulated that the accessibility of their doula was of particular importance, and referenced them in friendship terms; characteristics associated with close, trusted, relationships, but not with professionals or with highly trained medical care providers. Certainly doulas are not the perfect answer for every woman, or for a maternity system that is overburdened and saddled with increasingly negative outcomes; however, they provide a low-cost viable option for a significant cultural problem in the United States.

Doulas as Support for Mothers and Families

For mothers generally, and for teen parents in particular, doulas fill a social gap left in our culture. For teens doulas may help buffer social isolation generated by being one of the first in a social group to begin having children, provide information when there is little transmission knowledge between mothers and daughters about childbearing and birth, and provide support in a culture where teen pregnancy carries a strong social stigma.

The element of this project that impressed me most was the way that the women I interviewed talked about their doulas. Participants described their doulas in impassioned terms, even those who were young or concerned about their ability to answer questions or articulate their experiences. The words of the young women who participated in this study are testaments to the powerful impact programs such as DST have on the lives of

young parents and their children. As cross-cultural data show, it is not young age per se that put mothers and their children at increased risk, it is the amount of support and care a culture provides to its young families. Certainly, in my own experience some of the most wonderful, active, engaged parents I have ever met have been teenagers. When women are well supported and have sufficient care and support for their child, regardless of their age, they can be excellent parents.

As more and more women are geographically isolated from their families as they begin having children, and as medical care providers spend less and less time with their patients, concerted efforts to generate community and feelings of support need to be integrated into our model of maternity care.

Although doulas are not the perfect answer, they do provide a model of support and care that significantly impacts both birth outcomes and maternal perceptions of support. Programs such as Doulas Supporting Teens, which provide both one-on-one support of a doula and peer support through classes and events, offer a model for providing effective support to young parents. Connecting young parents with one another, and providing education and individualized support are critical elements to creating successful young families. As our maternity system struggles with ever higher rates of maternal and infant mortality, despite providing some of the most high-tech care in the world, doulas provide a low-cost, simple answer to improving outcomes for both mothers and babies.

APPENDIX A

INITIAL INTERVIEW SCRIPT FOR DST PARTICIPANTS

Script for initial contact (by phone or e-mail):

My name is Shayna Rohwer, and I am a student in the Anthropology Department at the University of Oregon. I am conducting a research project on young moms' birth experiences.

I am looking for moms to interview who:

1) were between the ages of 15 and 19 when they gave birth
2) gave birth in the last two years
3) are currently over 16 years old
4) had the support of a DST doula for the birth of their baby

If you decide to participate, we would choose a time and place to meet and do three things. First you would fill out a brief survey about your birth (things like, where you birthed, who was there, how many weeks pregnant when you gave birth and other questions about your birth). Second I would ask you to tell me the story of your birth and ask you a few questions following your birth story. I would like to tape-record this portion of the interview so that I can look at how you talk about your birth experience. Finally I would ask you to rate some statements about your experiences giving birth.

We can meet wherever is most comfortable and convenient for you (at your home, at a coffee shop, at the DST office, or at the University) and you are welcome to bring your baby. When choosing a place to meet, please remember that I cannot guarantee privacy if we meet in a public place (like a restaurant or coffee shop)—so keep this in mind when you're choosing where you'd like to meet. The survey, interview and questionnaire should take no more than two hours. At the completion of the interview, you will be given a $15 gift card for your time. Remember, this is completely voluntary. You can choose to be in the study or not. You are welcome to think about whether or not you want to participate, and call me back, or contact me to ask any questions you have about the project.

My contact information: **(541) 953-9003** srohwer@uoregon.edu

Participant's contact information (if they are interested in participating):

Name ____

Cell Phone Number ____

Home Phone (if different) ____________________________________

Mailing Address____

APPENDIX B

INITIAL INTERVIEW SCRIPT FOR NON-DOULA PARTICIPANTS

Script for initial contact (by phone or e-mail):

My name is Shayna Rohwer, and I am a student in the Anthropology Department at the University of Oregon. I am conducting a research project on young moms' birth experiences.

I am looking for moms to interview who:

1) were between the ages of 15 and 19 when they gave birth
2) gave birth in the last two years
3) are currently over 16 years old

If you decide to participate, we would choose a time and place to meet and do three things. First you would fill out a brief survey about your birth (things like, where you birthed, who was there, how many weeks pregnant when you gave birth and other questions about your birth). Second I would ask you to tell me the story of your birth and ask you a few questions following your birth story. I would like to tape-record this portion of the interview so that I can look at how you describe your birth experience. Finally I would ask you to rate some statements about your experiences giving birth.

We can meet wherever is most comfortable and convenient for you (at your home, at a coffee shop, or at the University) and you are welcome to bring your baby. When choosing a place to meet, please remember that I cannot guarantee privacy if we meet in a public place (like a restaurant or coffee shop)—so keep this in mind when you're choosing where you'd like to meet. The survey, interview and questionnaire should take approximately one hour. At the completion of the interview, you will be given a $15 gift card for your time. Remember, this is completely voluntary. You can choose to be in the study or not. You are welcome to think about whether or not you want to participate, and call me back, or contact me to ask any questions you have about the project.

My contact information: (541) 953-9003 srohwer@uoregon.edu

Participant's contact information (if they are interested in participating):

Name ____

Cell Phone Number ____

Home Phone (if different) ______________________________________

Mailing Address____

APPENDIX C

CONSENT FORM FOR WOMEN WHO HAD DOULA SUPPORT

Consent Form:

You are invited to participate in a research study conducted by Shayna Rohwer, a graduate student from the Anthropology Department at the University of Oregon. I am writing my dissertation on doula support and teen moms and hope to learn more about how having a doula can affect a young mother's birth experience. You were selected as a possible participant in this study because you worked with a doula from Doulas Supporting Teens for the birth of your baby.

If you decide to participate, we will schedule a time to meet and do an in-depth interview about your birth and the experience of having a doula. During the interview, I will ask you both specific questions about your birth (how long labor was, what your doula did) as well as more open-ended questions (for example how having a doula affected your feelings about labor and birth). I would like to tape record this portion of the interview so that I can look at the ways you talked about your birth experience. After the interview, I will ask you to rate thirty statements about your labor and birth. The entire interview should take between no more than two hours.

The interview may bring up intense emotions associated with describing and re-telling the story of your birth. You are welcome to share as much or as little detail as you feel comfortable with, and can always choose to skip or not to answer specific questions. Please feel free to bring your baby with you to the interview and don't hesitate to take breaks to care for your baby. Your participation in this project will contribute to a growing body of research on doula support. This study will hopefully lead to more information about the impact of labor support, and better outcomes for both moms and babies. However, I cannot guarantee that you personally will receive any benefits from this research. You will be given a $15 dollar gift card to compensate you for your time at the end of the interview.

Any information that is obtained in connection with this study and that can be identified with you will remain confidential and will be disclosed only with your permission. For example, your doula will not be told what you have said about your birth experience. Your identity and birth outcomes will be kept confidential by assigning a participant identification number and a pseudonym (a name that you make up).

Your participation is voluntary. Your decision whether or not to participate will not affect your relationship with Doulas Supporting Teens. If you decide to participate, you are free to withdraw your consent and discontinue participation at any time without penalty.

If you have any questions, please feel free to contact me, Shayna Rohwer, (541) 953-9003 or my advisor Lawrence Sugiyama (541) 346-5142. If you have questions regarding your rights as a research subject, contact the Office for Protection of Human Subjects, University of Oregon, Eugene, OR 97403, (541) 346-2510. This office oversees the review of the research to protect your rights and is not involved with this study.

Your signature indicates that you have read and understand the information provided above, that you willingly agree to participate, that you may withdraw your consent at any time and discontinue participation without penalty, that you have received a copy of this form, and that you are not waiving any legal claims, rights or remedies.

____

Signature Date

________ Initialing here indicates that you consent to being photographed. Photographs may be used in presentations, but will not be directly linked to any information that you have provided during any part of the interview process. Having your picture taken is completely optional, and will not effect participation or compensation in any way.

APPENDIX D

18-QUESTION INITIAL INTERVIEW

Please list *your* date of birth ____________________

The date your *baby* was born ____________________

What was your due date? ______________________

Did you have any complications during pregnancy?

Where did you give birth (which hospital, birth center, or home)?

Did you have a DST doula present for your birth? Yes No

Did you have a vaginal or caesarian birth? Vaginal Caesarian

If you had a vaginal birth, did they use a vacuum or forceps to assist with delivery? No
Yes (if yes, which one?) vacuum forceps

Did you use pain medication during labor? Yes No

If yes, what kind:

Did you have an episiotomy?

How much did your baby weigh at birth?

How many weeks pregnant were you when you gave birth?

Who was there to support you when you gave birth?

Approximately how long was your labor?

How many centimeters dilated were you when you arrived at the hospital or birth center?

Did you breastfeed your baby? For how long?

Would you choose to have a doula again if you had another baby?

APPENDIX E

SEMI-STRUCTURED INTERVIEW SCRIPT FOR WOMEN WHO BIRTHED WITH DOULA SUPPORT

[The questions below are a guide—I may ask follow-up questions, rephrase or clarify questions as needed when meeting with a participant.]

A couple of reminders before we get started with the interview:
Please feel free to take breaks and tend to your baby as you need to (if baby is present);
remember you can choose to skip questions, stop the interview or have me stop recording at any time and you will still receive a gift certificate for your time; and
everything that you tell me is confidential and will not be connected with your name in any way.

The first thing that I'd like you to do is to tell me your birth story—tell me about your experience giving birth. You can begin this story wherever you want, with finding out you were pregnant, or just with the birth itself—and use as much or as little detail as you feel comfortable. I'm interested in hearing the way that you tell the story of the birth of your baby.

[Some kind of reflection or follow up on the story of their birth—then transitioning to the fact that they were supported by a doula for their birth and that I'm interested in hearing more about this experience.]

Tell me how you found out about Doulas Supporting Teens.

When did you start working with DST?

What kinds of activities did you do with DST? (get them to list)

Which DST doula did you work with? [If they told me their doula's name over the course of their birth story then acknowledge doula's name and move to next question.]

How did you choose your doula?

When did you start meeting with your doula?

Approximately how many times did you meet before your birth?

Tell me what kinds of things you and your doula did during prenatal appointments?

Did having a doula affect the way you prepared, or got ready, for your birth? If yes, how did she do this?

When did your doula arrive during labor?

Did having a doula affect your labor and birth? If yes, can you give me specific examples of how she did this?

What kinds of coping techniques did you use in labor?

What did you spend most of your time doing in labor (i.e. some people spend a lot of time in the shower or bed)?

When did your doula leave the birth center or hospital following the birth?

How did you feel about the amount of time your doula spent with you?

How often did the two of you visit after your birth?

Who was your care provider during your pregnancy (by care provider I mean, your doctor, or midwife)?

How did you choose your doctor or midwife?

How far along were you when you started getting prenatal care?

Did having a doula affect your relationship with your care provider (doctor or midwife)? How?

Was your partner, or the father of the baby involved with the birth?

Did having a doula affect your relationship with your boyfriend/partner? How?

Did having a doula affect the way you and your partner worked together in labor? How?

Did having a doula affect your relationship with your baby? How? If not, who has impacted this relationship?

Did you attend childbirth classes? How many?
Tell me some of the things that you learned in the childbirth classes you attended.

Did you attend any DST events?
Tell me about the kinds of events you attended. What did you get from those events?

Do you currently or did you attend DST's parenting classes or other parenting classes?

Would you choose to have a doula if you were to give birth again?

Is there anything that you would change about your birth if you could?

Is there anything that you want to tell me or that you wish that I had asked you?

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