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Kate Baur Date

Obstetric Care Seeking Process of
Tribal Women in Karnataka, India

By

Kate Baur
Degree to be awarded: MPH

Global Health

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Obstetric Care Seeking Process of
Tribal Women in Karnataka, India

By

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An abstract of
A thesis submitted to the Faculty of the
Rollins School of Public Health of Emory University
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Master of Public Health
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2016

Abstract

Obstetric Care Seeking Process of Tribal Women in Karnataka, India
By Kate Baur

Background: India has made significant improvements in reducing maternal mortality. However, these advancements are disproportionate across social groups, with rural tribal populations continually reporting the poorest maternal health indicators. Greater understanding of the obstetric care seeking processes of tribal populations is necessary for the national maternal health plans to be truly and equitably effective.

Goal: The goal of this study was to examine and compare the influential factors identified by *Soliga* tribal women along their pathway to obstetric care and the influential factors perceived by the maternal health workers that treat them to illuminate any disconnect.

Methods: In this qualitative study, in-depth interviews were conducted with 13 *Soliga* tribal women who had delivered a child in the past two years and 5 maternal health care workers. A case study on one of the women and an observation in an obstetric care facility were also conducted to add further context to the interview data. Thematic analysis was used to identify key themes across the data.

Results: *Soliga* women identified influential factors affecting four key stages of the obstetric care seeking process: deciding to seek obstetric care, choosing an obstetric care facility, reaching an appropriate obstetric care facility, and receiving adequate obstetric care. The women identified social support systems and situational knowledge as key facilitators in overcoming most access barriers except those related to patient-provider communication about referrals. Health workers' demonstrated varying levels of understanding of the tribal women's path to care but diverged in their perception of tribal knowledge, motivation, and negligence as barriers. Furthermore, health workers' perceptions of barriers differed based on their attitudes regarding the provision of care to tribal vs. non-tribal women, with the majority of divergent barriers being identified by health workers with accusatory attitudes.

Conclusion: The findings emphasize a need for maternal health programming that supports pre-existing social support systems, improves referral related communication, and trains health workers to deliver culturally sensitive obstetric care. Further research is required to investigate why the attitudes and levels of cultural sensitivity among health workers vary and what affect their attitudes have on the provision of care to tribal women.

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Role in Thesis/Manuscript

- Collaboration with partner NGO
- Creation of in-depth interview guide
- Training of field team
- Observation at Obstetric Care Facility
- De-Identification of 22 transcripts
- Data Coding of 20 transcripts
- Data Analysis of 20 transcripts
- Review of the literature
- Primary author of Manuscript

List of Acronyms

ANC: Antenatal Care
ANM: Auxiliary Nurse Midwife
ASHA: Accredited Social Health Activist
BR Hills: Biligiriranga Hills
CHC: Community Health Center
CSSM: Child Survival and Safe Motherhood Program
FRU: First Referral Unit
GOI: Government of India
IDI: In-depth Interview
IRB: Institutional Review Board
JSY: Janani Suraksha Yojana
JSSK: Janani Shishu Suraksha Karyakaram
MCH: Maternal and Child Health
MDG: Millennium Development Goal
MMR: Maternal Mortality Rate
NGO: Non-Governmental Organization
NRHM: National Rural Health Mission
PHC: Primary Health Center
PNC: Postnatal Care
SC/ST: Scheduled Caste/Scheduled Tribe

Literature Review

Introduction

Maternal health seeking behavior is a topic that has been covered extensively in the academic literature. This review focuses on studies that have been conducted within the Indian context. It is organized in a broad to narrow format beginning with an overview of India's maternal health standing, policies, and policy shortcomings; transitioning to the current research on health seeking behaviors of various Indian sub-populations; and ending with the need for further research on the health seeking behaviors of tribal populations living in Karnataka, India. This review reinforces the commonly stated need for further research to inform contextually tailored maternal health policy.

Maternal Health in India

Current Maternal Health Situation

India has made great strides in decreasing maternal mortality. Their maternal mortality ratio (MMR) decreased by 65% between 1990 and 2013 with an average 4.5% decrease per year (World Health Organization; UNICEF; UNFPA; The World Bank, 2015). However, despite this progress, India still maintains one of the highest MMRs in the world at 190 deaths per 100,000 live births (World Health Organization; UNICEF; UNFPA; The World Bank, 2015). Furthermore, as of 2013, India still makes up 17% of the global maternal mortality burden (World Health Organization; UNICEF; UNFPA; The World Bank, 2015). Several studies conclude that the reason for these consistently poor maternal health indicators is because the Government of India (GOI) fails to extend adequate maternal health services to its socially and geographically disadvantaged populations (Adamson et al., 2012; George, 2007; Iyengar,

Iyengar, Suhalka, & Dashora, 2009; Lim et al., 2010; Meerambika Mahapatro & Kumar, 2009; Neelanjana, 2011; Silan, Kant, Archana, Misra, & Rizwan, 2014; Sri, Sarojini, & Khanna, 2012).

Development of Policy

In response to the high rates of maternal mortality, the GOI started developing maternal health policy well before the country's independence in 1947 (Tej Ram Jat, Deo, Goicolea, Hurtig, & San Sebastian, 2015). However, it was not until the early 1990s that maternal and child health (MCH) services extended beyond immunizations and birth control to address the nation's more pressing issue of maternal mortality (Tej Ram Jat et al., 2015). In 1991, the government—with support from the World Bank and UNICEF—created the Child Survival and Safe Motherhood Programme (CSSM) (Tej Ram Jat et al., 2015). This program expanded basic MCH services to include antenatal care (ANC), treatment of complications, and institutional deliveries. It also created a referral system which designated certain hospitals as First Referral Units (FRUs) that, unlike Primary Health Centers (PHC's), provide specialized obstetric care services (Tej Ram Jat et al., 2015). The system has since evolved into a three level referral system composed of PHCs, Community Health Centers (CHCs), and District Hospitals. The PHC's are equipped to serve the basic health needs of 30,000 people. The CHC's—which are also the FRU's—are intended to provide secondary level care to 100,000 people. Lastly, the District Hospitals provide tertiary level care (Sahoo, Singh, Gupta, Garg, & Kishore, 2015). This historical context and health system structure forms the platform on which India's current National Rural Health Mission (NRHM) is built.

The National Rural Health Mission

The NRHM was created in 2005 to enable rural populations to access primary health care, increase the health capacity of maternal health staff, reduce financial barriers, and strengthen health infrastructure (Bruce et al., 2015; Jayanthi, Suresh, & Padmanaban, 2015). The GOI hired staff for over 22,000 CHC's, 4,000 PHCs, and roughly 150,000 sub-centers providing primary level care (Adamson et al., 2012). A key focus of the NRHM is to increase institutional deliveries (Tej Ram Jat et al., 2015; Lim et al., 2010; Nair, Ariana, & Webster, 2012). This goal is operationalized through two main schemes, the Janani Suraksha Yojana (JSY) and the Janani Shishu Suraksha Karyakaram (JSSK).

JSY is a conditional cash transfer scheme that provides cash incentives for those that deliver in public hospitals or GOI-accredited private health facilities (Lim et al., 2010). After delivering in an approved facility, urban women typically receive 600 rupees ($9.05) and rural women typically receive 700 rupees ($10.56). In the high priority states—Uttar Pradesh, Uttaranchal, Bihar, Jharkhand, Madhya Pradesh, Chhattisgarh, Assam, Rajasthan, Orissa, and Jammu and Kashmir—this incentive increases to 1,000 rupees ($15.08) for urban women and 1,400 rupees ($21.12) for rural women (Tej Ram Jat et al., 2015; Lim et al., 2010). JSY is implemented by Accredited Social Health Activists (ASHAs). ASHAs are volunteers from communities that are trained by the government to assist women with their maternal health needs. Some of their responsibilities include identifying high-risk births, providing nutrition and maternal health information to the community, and accompanying women to the health center during delivery and for ANC and postnatal care (PNC) (Lim et al., 2010; Neelanjana, 2011; Silan et al., 2014; Sri et al., 2012). ASHAs are provided cash incentives based on their performance of these responsibilities (Silan et al., 2014).

The JSSY scheme, also known as The Mother and Child Protection Program, began in 2011. It is designed to limit access barriers by ensuring that all delivery services—drugs, diagnostics, food, delivery fees, cesareans, blood, transport—are provided for free (Tej Ram Jat et al., 2015). The scheme permits a 3-day hospital stay for a normal delivery and a 7-day hospital stay for a caesarian delivery(Tej Ram Jat et al., 2015). These two schemes form the backbone of the NRHM.

NRHM Shortcomings

Vast improvements have been attributed to the NRHM and its corresponding schemes. There has been a 59% decline in maternal deaths in the past 10 years and institutional births have increased to nearly 70% on a national scale between 2013-2014 (Bruce et al., 2015; Jayanthi et al., 2015). However, its shortcomings have been well documented in the literature (Adamson et al., 2012; Tej Ram Jat et al., 2015; Lim et al., 2010; Saroha, Altarac, & Sibley, 2008). One major criticism of the NRHM is that it fails to tailor its schemes to those most in need (Adamson et al., 2012; Lim et al., 2010; Pathak, Singh, & Subramanian, 2010). Studies have suggested that the improvements in MMR and institutional birth rates are more reflective of uptake by middle- and upper-income women (Lim et al., 2010; Pathak et al., 2010). Lim et al. (2012) unveiled that even when the poorest and least educated women did make it to health facilities, they often were less likely to receive cash incentives than their non-poor counterparts.

A second major criticism of the NRHM is its failure to build the capacity of health facilities to match the influx of institutional deliveries resulting from the JSY and JSSK schemes (Das & Sarkar, 2014; George, 2007; Lim et al., 2010; Sri et al., 2012). The literature suggests that this has resulted in poor quality care and incongruence between the meaning of safe delivery and institutional delivery (Khan & Pradhan, 2013; Lim et al., 2010; Sri et al., 2012). Health

centers are accused of lacking supervision, ethical treatment, adequate resources, sufficient personnel and proper referral mechanisms (Adamson et al., 2012; Das & Sarkar, 2014; George, 2007; Lim et al., 2010; Sri et al., 2012). These major criticisms are highlighted throughout the literature on maternal health seeking behavior in India.

Maternal Health Seeking Behavior in India

The link between NRHM's shortcomings and the maternal health seeking behavior of women in India has been extensively covered in the literature (Adamson et al., 2012; Lim et al., 2010; M. Mahapatro, 2015; Nair et al., 2012; Roy, Hegde, Bhattacharya, Upadhya, & Kholkute, 2015; Sri et al., 2012). Societal input, socio-demographic factors, structural barriers, and perceived quality of care are the overarching categories that encompass the major influencers of maternal health seeking behavior in India (Bruce et al., 2015; Das & Sarkar, 2014; George, 2007; Iyengar et al., 2009; Tej Ram Jat et al., 2015; Jayanthi et al., 2015; Kesterton, Cleland, Sloggett, & Ronsmans, 2010; Khan & Pradhan, 2013; M. Mahapatro, 2015; Nair et al., 2012; Neelanjana, 2011; Sahoo et al., 2015). While these categories are common in the literature, there is great variation within them, especially in regards to the location and the social identity of the population studied.

Societal Pressure and Perception of Risk

Many studies state that community input as well as familial and personal risk perceptions play an influential role in determining when and where a woman delivers in India. Community elders, mothers, mothers-in-law, husbands, community nurses and ASHA's have been identified as the most influential actors. Several studies have indicated that familial pressure, social networks, and community advice have enabled women to access delivery care faster (Iyengar et

al., 2009; Neelanjana, 2011). Neelanjana (2011) concluded that family support often enabled women to overcome logistical barriers in reaching care. On the other hand, several studies show that family members' negative opinions about institutional delivery services has led to delays in women seeking care (Tej Ram Jat et al., 2015; Khan & Pradhan, 2013).

Risk perceptions of both women and their families also play a role. The delayed recognition of delivery complications or life-threatening situations by women and family members was often identified in the literature as a barrier to seeking care (Das & Sarkar, 2014; Iyengar et al., 2009; Tej Ram Jat et al., 2015; Khan & Pradhan, 2013; M. Mahapatro, 2015). In Khan's et al. (2012) investigation of factors associated with maternal deaths in Jharkhand, two thirds of the cases took between 2-7 days to recognize complications; a delay that eventually led to the women's deaths. The type of risk has also been identified as important. Risks threatening the life of the child are sometimes taken more seriously than risks to the women's life (Das & Sarkar, 2014). The influence that family members and risk perceptions have on a woman's decision to seek care show why it is important to investigate these factors further in order to inform effective maternal health policy.

Socio-Demographic Influences

There are several socio-demographic factors that have been claimed to influence maternal health seeking behavior of women in India. Higher education of women and their husbands has been associated with greater acceptance of institutional health services, heightened awareness of need for skilled birth assistance and increased confidence in demanding quality care (Nair et al., 2012; Sahoo et al., 2015). High birth order, low household income, and poor socio-economic status have been identified as negative determinants of health care utilization (Kesterton et al., 2010; Nair et al., 2012; Sahoo et al., 2015).

The geographic region and social designation of women have also been identified as significant determinants of delivery location. Populations living in rural regions, especially those belonging to a Scheduled Caste/ Scheduled Tribe (SC/ST), are by far the most disadvantaged in regards to health access (Adamson et al., 2012; Iyengar et al., 2009; Nair et al., 2012; Saroha et al., 2008). It has been suggested that the MMR could be nearly 132% higher outside of cities (Adamson et al., 2012). Furthermore, in 2012, 32 million of the 40 million births not attended by skilled birth attendants happened in rural regions (Sahoo et al., 2015).

SC/ST primarily occupy rural regions and have been historically marginalized. The SC/ST system was created in 1935 to designate these disadvantaged and largely discriminated against populations to receive additional protection and services from the GOI (Adamson et al., 2012). However, the SC/ST title unfortunately resulted in persistent structural discrimination and marginalization; their maternal health indicators consistently rank the lowest out of any other group in India (Adamson et al., 2012; Iyengar et al., 2009; Nair et al., 2012; Saroha et al., 2008). While SC/STs only make up approximately 24% of the total Indian population, they account for more than one half of India's maternal mortality (Adamson et al., 2012). Several studies indicate that SC/ST are significantly less likely to seek institutional maternal health care (Adamson et al., 2012; Nair et al., 2012). This disparity is further exemplified by a study exploring maternal deaths in rural Rajasthan through verbal autopsy. While only 37% of the individuals in the sampling frame belonged to a SC/ST, 74% of the maternal deaths examined in the study were SC/ST women (Iyengar et al., 2009). The influence of socio-demographic factors—namely low economic status, rural regions, and SC/ST backgrounds—illuminates why greater research is required to understand the complexities of these marginalized populations. It is clear that simply providing institutional facilities will not solve the low institutional delivery rate issue. If these

populations and socio-demographic factors are not focused on specifically, the national maternal health policy will continue to fall short.

Structural Barriers

Access and availability barriers are the most commonly referenced influencers in maternal health seeking literature. The access barriers that are prevalent in India can be further categorized into communication, financial, and geographical barriers. One of NRHM's biggest challenges in reaching rural populations is that information about the various schemes is not dispersed effectively (Neelanjana, 2011). In addition, there is often miscommunication between doctors and patients regarding the severity of complications leading to delays in care. Furthermore, poor communication between hospitals leads to a highly disjointed referral system (Das & Sarkar, 2014; George, 2007; Tej Ram Jat et al., 2015).

Financial barriers also often lead to delayed care. Although the NRHM dictates that services associated with deliveries are supposed to be free, there are many indirect costs—such as travel and medicines—as well as bribes demanded by health staff that deter women from using health facilities (Bruce et al., 2015; Neelanjana, 2011). Disbursement of JSY and other NRHM incentives is not equal, thus failing to help impoverished populations overcome financial barriers to care (Bruce et al., 2015). For those that do access care, economic status has consistently been considered the strongest determinant of whether women choose to seek private over public health services (Bruce et al., 2015; Kesterton et al., 2010). Lastly, geographical access barriers have been disproportionately associated with women living in rural areas where transportation options are limited (Bruce et al., 2015).

In addition to access, the lack of availability of doctors and appropriate medical resources has also been highly associated with maternal health seeking behavior in India. The country

overall has an insufficient number of obstetric health personnel. Further, very few of these personnel elect for positions in rural regions (Adamson et al., 2012; Shah & Belanger, 2011). Paired with the lack of medicines, blood, and free transport that often occurs in health centers, this personnel shortage results in significant delays in maternal health care access and greatly influences the health seeking behavior of pregnant women (Iyengar et al., 2009; Tej Ram Jat et al., 2015; Khan & Pradhan, 2013; M. Mahapatro, 2015).

Perceived Quality and Acceptability of Care

While availability and accessibility of care have been extensively identified as powerful influencers of maternal health seeking behavior in the literature, it is increasingly argued that improving access and availability will be pointless if quality and acceptability of care is not considered (Bruce et al., 2015; Neelanjana, 2011). The opinions held by women and their families regarding health services are important determinants of MCH service utilization (Neelanjana, 2011). Jayanthi et al. (2015) uncovered that perceived quality of care played a much bigger role in determining delivery location than did the provision of cash incentives (Jayanthi et al., 2015). Furthermore, discomfort regarding the gender of health care staff, long waiting times, and physically revealing health exams have been identified in many studies as deterrents to institutional maternal health care utilization (Neelanjana, 2011). Bruce et al. (2015) explained that some women avoid certain facilities—often private facilities—because they believed that they were too quick to perform invasive caesarian procedures (Bruce et al., 2015).

Some studies identified health worker behavior as an important determinant of utilization. Health staff's refusal to provide care and abusive treatment were identified by patients as negative determinants, while kind and friendly attitudes were identified as positive determinants of women seeking maternal health care at a hospital (Tej Ram Jat et al., 2015; Jayanthi et al.,

2015; Neelanjana, 2011). Some cases further concluded that perceived discriminatory behavior of health care workers directed towards poor populations was an additional deterrent of care at a hospital (Adamson et al., 2012; Bruce et al., 2015; Das & Sarkar, 2014). These studies indicate why context-specific studies are necessary to understand how future maternal health policies need to be tailored.

Importance of Context Exemplified-The Unique Cases of Kerala and Tamil Nadu

While this review has touched on the overarching and common themes of maternal health seeking behavior, the literature repeatedly refers to the contextual underpinnings of influential factors. As Lim et al. (2012) points out, the quality of the maternal health care system cannot be evaluated on a national level; there is substantial variation between populations. Kerala and Tamil Nadu exemplify this as women in these states seek institutional maternal health care at much higher rates than other areas. A study on the utilization of maternal health care service utilization in Kerala concluded that 100% of pregnant non-tribal and 85% of pregnant tribal women used institutional maternal health services in the state. This high rate was attributed to high awareness, affordability, accessibility, and quality of health services as well as the motivation health workers provided to patients(Jose, Sarkar, Kumar, & Kar, 2014). Tamil Nadu was also identified as having high quality care, strong infrastructure, accountable health staff, and highly affordable maternal health services at PHCs (Jayanthi et al., 2015). These two states pose as stark contrasts to states such a Madhya Pradesh where there is little trust in the public health care system (Tej Ram Jat et al., 2015). These dichotomies illuminate why context-specific studies need to be conducted in order to inform effective maternal health policy.

Limits to the Literature: Maternal Health of Tribal Populations

Tribal groups are among the most marginalized groups in India; their health service access is much lower than any other caste and their maternal mortality and morbidity is much higher (Shah & Belanger, 2011; Sri et al., 2012). Sri et al. (2012) highlights how often caste and gender power hierarchies put tribal women at an extreme disadvantage in being able to demand accountability of health services.

While there has been some literature on SC/ST health, far less has focused specifically on the maternal health seeking behaviors of tribal populations. However, the research that has been conducted clarifies why generalizations cannot be made about India's tribal populations as a whole. While several studies (Islary, 2014; Pradhan, 2013; Shah & Belanger, 2011) explain that lack of health awareness, destruction of forests, magico-religious beliefs, traditions, illiteracy, and socio-cultural factors disproportionately affect the health seeking behavior of tribal populations, the literature also illuminates how the influence of these factors varies immensely between and within the different tribal groups (Jose et al., 2014; Shah & Belanger, 2011; Susuman, 2012). Susuman et al, (2012) looked at the variations within the tribal groups and discovered that women with a higher standard of living, attended ANC appointments, lived closer to health facilities or were delivering their first child—opposed to their second or third child—were more likely to have institutional births. Shah et al. (2011) compared different tribal groups and discovered that geographic region influenced health seeking behavior; tribal groups in Northeastern states were more likely to use institutional maternal health services than were tribal women in Central states. More qualitative research is needed to understand the variations in health seeking behaviors between tribes and to gain a greater understanding of how national policy can be tailored towards these populations.

Karnataka Tribes

Karnataka is one of the top ten ST states with a tribal population of 4,248,987 (Registrar General of India, 2011). However, there has been little research on the maternal health status of Karnataka's tribal groups (Roy et al., 2015). In a comprehensive review of the literature regarding the health status of Karnataka tribes, Roy (2015) unveiled that there have only been studies on 5 of the 50 tribes in the state. Furthermore, health care utilization was only studied in one of those tribes, the *Koraga* (Roy et al., 2015). The previously referenced literature identifies the need for maternal health policy to be adapted to specific populations. However, the lack of data on Karnataka's tribal populations prevents district health managers from being able to tailor policies to their needs(Roy et al, 2015). Qualitative research on the determinants of childbirth locations among Karnataka's tribal women would be invaluable for the development of effective maternal health policy.

The Soliga Tribe

There have been very few studies conducted on the *Soliga* tribal population and no studies conducted on the maternal health seeking behaviors of *Soliga* women. The *Soliga* tribe is concentrated in and around the Biligirirangana Hills (BR Hills) region of the Chamrajnagar district of Karnataka state. The sparse literature states that traditional medicine as well as traditional practices—such as giving birth in the squatting position with the aid of a traditional birth attendant—are common among the *Soligas* (Veena, 2006). Furthermore, their lifestyle and beliefs are claimed to be closely linked with the forest; personal health is viewed as being intrinsically linked to the environmental health of their community (Seshadri, 2015; Veena, 2006). As the *Soligas* are one of the most prominent tribes in Karnataka (Roy et al., 2015),

qualitative research regarding their maternal health seeking behavior would be highly valuable to the state's maternal health policy makers.

Justification for Study

The literature recurrently recommends that greater focus be placed on identifying the context specific factors that affect maternal health care utilization in India. Some studies suggest that stigma, discrimination, and socio-cultural factors specifically impact maternal health seeking behavior of tribal populations and recommend that greater focus be placed on tribal populations to investigate this issue further (Adamson et al., 2012; Sri et al., 2012). Moreover, as pointed out in the literature, the diversity between tribes demands that each population be examined individually in order to best understand how national policy needs to be tailored effectively to tribal needs as a whole. As there has been little research conducted on tribal populations in Karnataka and no research on the maternal health needs of the expansive *Soliga* population, context-specific qualitative research on this topic is essential.

Manuscript

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Methods: In this qualitative study, in-depth interviews were conducted with 13 *Soliga* tribal women that had delivered a child in the past two years and 5 maternal health care workers. A case study on one of the women and an observation in an obstetric care facility were also conducted to add further context to the interview data. Thematic analysis was used to identify key themes across the data.

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Conclusion: The findings emphasize a need for maternal health programming that supports pre-existing social support systems, improves referral related communication, and trains health workers to deliver culturally sensitive obstetric care. Further research is required to investigate why the attitudes and levels of cultural sensitivity among health workers vary and what affect their attitudes have on the provision of care to tribal women.

Introduction

India's maternal mortality rate decreased from 556 to 174 deaths per 100,000 live births between 1990 and 2015—nearly making the 2015 Millennium Development Goal (MDG) target of a 75% reduction in maternal deaths (World Health Organization; UNICEF; UNFPA; The World Bank, 2015). However, while the country has made great strides in decreasing maternal mortality, these advancements are disproportionate across regions and social groups. Studies have shown that the maternal mortality rate (MMR) could be under-reported up to 139% outside of urban areas (Adamson et al., 2012). Tribal populations, primarily residing in rural regions, are among the most marginalized and continually report the poorest maternal health indicators (Jose et al., 2014; Nair et al., 2012).

India attempted to address this health inequity by creating the National Rural Health Mission (NRHM) in 2005. The NRHM aimed to decentralize health program planning to the state and district levels so that programs are more focused on local needs, especially in rural communities (Ministry of Health and Family Welfare, 2014; Prashanth, Marchal, Kegels, & Criel, 2014). However, evaluations have shown that due to a failure to develop the capacity of health managers at these levels, plans are still not being contextualized (Prashanth et al., 2014); historically marginalized socials groups—mainly those belonging to Scheduled Castes/Scheduled Tribes (SC/ST)—are systematically disadvantaged in regards to the basic human rights of access, availability, acceptability, and quality of maternal health services (Adamson et al., 2012; T. R. Jat, Deo, Goicolea, Hurtig, & San Sebastian, 2013; Nair et al., 2012; Silan et al., 2014; UN Commitee on Economic and Social and Cultural Rights (CESCR), 2000).

While some of the NRHM incentive programs are succeeding in increasing antenatal and institutional delivery rates among SC/ST populations, a growing number of studies are highlighting the shortcomings of these incentive programs. In addition to increasing availability and affordability of maternal health services, focus needs to be placed on ensuring that the health system facilitates rather than restricts pathways to quality care (Adamson et al., 2012; George, 2007; Iyengar et al., 2009; Jayanthi et al., 2015; Kesterton et al., 2010; Neelanjana, 2011; Silan et al., 2014) Furthermore, some studies suggest that specific focus be placed on health worker behavior to examine whether or not discriminatory viewpoints impact tribal women's obstetric care seeking process (Adamson et al., 2012; Silan et al., 2014; Sri et al., 2012).

Significant research exists on the maternal health care seeking behaviors of SC/ST populations in the Northeastern and Central regions of India. However, there are few studies that specifically focus on tribal populations in South India (Roy et al., 2015; Shah & Belanger, 2011). Additionally, there have been some studies on health worker's perceptions of tribal women's barriers to care, but very few—and none in Karnataka—that compare these to the experiences of tribal women from the same area in accessing obstetric care (Sri et al., 2012). Such research would be useful in identifying areas of disconnect that can be addressed so that care is more tailored to the needs of tribal communities.

The purpose of this study is to distinguish between the perceived factors that maternal health care workers of Southern Karnataka believe to influence a tribal women's obstetric care seeking process and the actual influential factors *Soliga* tribal women of the same region faced in their most recent obstetric care seeking experience. This research is embedded within a larger participatory action research study, which aims to collaborate with tribal communities and

district level managers in Chamrajnagar to develop maternal health program plans tailored to the needs of the district's tribal communities.

The specific objectives of the current study are to: 1) Identify influential factors affecting the obstetric care seeking process of *Soliga* women living in the Biligirirangana Hills (BR Hills) region of Chamrajnagar, Karnataka 2) Examine the perceptions that health workers living in the same region have about tribal women and their obstetric care seeking process and 3) Illuminate how the *Soliga* women's experiences in seeking obstetric care compare to the maternal health care workers' perceptions to unveil how maternal health services can be realistically tailored to the needs of tribal populations living in similar contexts.

Methods

This study was conducted in the Biligirirangana Hills (BR Hills) region of Karnataka state, home to the forest dwelling *Soliga* tribe. *Soliga* women and maternal health workers were interviewed about their childbirth experiences to investigate their respective perspectives as patients and providers. Community and organizational counterparts conducted recruitment and interviews in the Kannada language. The interview guides were informed by local counterparts and pre-existing literature and were iteratively adjusted throughout data collection. In addition to the interviews, a case study investigation of a *Soliga* women's obstetric care experience and a non-participatory observation at a First Referral Unit (FRU) hospital were carried out to add further context. The data were translated, transcribed, and analyzed using thematic analysis.

Study Site

This study was conducted in BR Hills, located in the sub-district of Yelandur in the Chamrajnagar district of Karnataka state, India. It makes up a small portion of the Biligiri Rangaswamy Wildlife Sanctuary which is home to approximately 12,500 members of the *Soliga* indigenous tribe (Madegowda, 2015). There is one non-governmental organization (NGO) run hospital in the community that provides primary level maternal health services. A second health facility is located 20km away in the town of Gumballi. For complicated maternal health cases, women are referred to government health facilities in Santa Marelli (26km from the study site), Chamrajnagar (62km from the study site), or Mysore (82km from the study site), depending on the severity of their case.

Data Collection

Data were collected through semi-structured in-depth interviews (IDIs) and non-participant observation. The IDIs were conducted with two groups of study participants: *Soliga* women and maternal health workers. All interviews were conducted in the local language of Kannada.

Soliga Participants

The inclusion criteria for the *Soliga* women included that they were at least 18 years of age and had given birth in the past two years. Two Kannada-speaking tribal field assistants conducted recruitment as well as the interviews with Soliga women. The tribal field assistants were selected because the community viewed them as neutral and trust-worthy and because they had a wealth of community knowledge. They were provided with rigorous training on qualitative methods, ethics, interview tactics, and the purpose of the study.

The birth register from the NGO hospital and local sub-center was used for recruitment of the *Soliga* women. Purposive sampling was used to ensure variation among participants. Participants with differing numbers of children were selected to identify how prior experiences influenced the women's pathway to care. Women living in villages with varying levels of accessibility were selected to identify how geographic location affected pathways to maternal care. Lastly, women with differing delivery locations were selected. The diversity of locations included the home as well as primary, secondary, and tertiary level facilities. The purpose of this diversity was to illuminate factors that led woman to deliver at more or less equipped facilities.

The IDI guide for the *Soliga* women gathered information about the main actors in the maternal health decision making process, women's feelings during the childbirth experience, opinions about maternal health in the community, knowledge of the pregnancy and birthing

process, reasoning for child delivery location and the woman's recommendations about how to improve maternal health services and ensure a safe delivery in BR Hills (Annex 1).

The IDI guide was pilot tested on three women prior to data collection. After the pilot tests, women were asked about the clarity of questions and the guide was adjusted for cultural and linguistic relevancy. The pilot data were not included in analysis.

One of the women was selected for a case study as her childbirth story represented several themes that were common across all of the *Soliga* participants. Two of her family members were also interviewed. For the purpose of triangulating information about actions taken during delivery process, the IDI guide for family members of the woman selected for the case study paralleled that of the other *Soliga* participants (Annex 2). It was not pilot tested.

During data collection, the IDI guide was refined using the iterative approach to further investigate issues that arose in the initial interviews. Three substantial sections were added to the guide. First, a section was added to investigate the women's personal opinions about maternal health practice in the community to further explain why some women judged similar care experiences differently. Second, a section was added to investigate the women's pregnancy as it was identified in the initial interviews that some women mentioned prior interactions with care providers as an influential factor on where they decided to delivery. Third, a section was added to investigate the plans that were made prior to delivery as it was unclear in the initial interviews what reasoning went into decisions, regardless of whether or not that plan was followed through. Furthermore, after learning of the culturally rooted hesitancy to openly share childbirth stories, the author added additional probes and structure to the IDI guide to encourage elaboration (Seshadri, 2015). For example, probes related to decision-making, health worker interaction, and transportation were added.

Health Worker Participants

Semi-structured IDIs were also conducted with nurses that provided maternal health care to the study population. The inclusion criteria for the nurses were that they worked at one of the main primary level care facilities serving the *Soliga* women of BR Hills. All 5 maternal health nurses working in the two main health posts agreed to an interview.

The nurses were interviewed about their experiences delivering maternal health services, opinions about tribal populations, decision criteria for referrals, and recommendations on how to improve maternal health services. If the nurses identified as *Soliga*, they were asked additional questions on what it was like to serve a community they are a part of (Annex 3). A Kannada speaking organizational counterpart recruited and interviewed the health workers. The counterpart attended the same training as those interviewing the *Soliga* women.

The initial interviews with *Soliga* woman informed the development of the IDI guide for health care workers. Due to a limited number of health workers, the guide was not pilot tested. However, small iterative adjustments were made between the initial and final health worker interviews. The main change was that after realizing that differing levels in autonomy meant that nurse's roles in the delivery process differed greatly, initial questions were added to ask about the personal responsibilities of each nurse.

Non-Participant Observations

To supplement information gathered in the interviews, non-participant observation was conducted. The author spent one night observing obstetric care staff working at a FRU hospital. This location was selected because of its proximity to the site and because of the high volume of deliveries reported there each day. To ensure reflexivity, the author documented all prior expectations and emotions prior to beginning the observation. During the observation, the author

took detailed written notes defining the delivery location, routines of health care staff, and interactions between health care staff and patients.

Data Management and Analysis

All interviews were tape recorded, translated into English, transcribed verbatim, and de-identified. Data were reviewed in the field after the initial interviews with *Soliga* women. Emerging themes were organized using a combination of the three delays framework and the Anderson framework of health seeking behavior (Tej Ram Jat et al., 2015; Roost, Jonsson, Liljestrand, & Essen, 2009). This informed further development of the interview guide.

After data collection was complete, the data were coded using MAXQDA software and analyzed using thematic analysis. Thematic analysis was chosen for this study because of the emphasis on uncovering the common behaviors that influence women's path to obstetric care for the purpose of informing future maternal health interventions.

An open coding method was used in which segments of text were identified using words or phrases that captured their meaning. Separate codes were created for the health workers and the women. The codes were applied to all interview transcripts within each study population. They were then reviewed to identify which were most applicable to the research questions.

The applicable coded segments for the *Soliga* women were categorized into factors that influenced the women's path at four distinct stages of care seeking: deciding to seek obstetric care, choosing an obstetric care facility, arriving at the obstetric care facility, and receiving adequate obstetric care at the facility. Participants with differing site accessibility, delivery locations, and number of children were compared to investigate if any patterns existed amongst the women's stories. The case study was analyzed separately using narrative analysis for the purpose of constructing the entire story of the women's childbirth experience.

The health worker codes were categorized to distinguish between general attitudes about treating tribal women and specific factors viewed as influencing the tribal women's pathway to obstetric care. These influential factors were then compared with the factors identified in the *Soliga* women's stories. The factors were further categorized by the types of attitudes the health workers had about treating tribal patients. Health workers with differing levels of autonomy were compared to identify and explain patterns across the data. Contextual elements were extracted from the observational data and applied when appropriate to the health worker's and *Soliga* women's explanations of obstetric care. To validate the results, the author cycled back to the data to ensure that all thematic findings were rooted in the participant's stories.

Study Funding and Ethics

This study was fully funded by Emory's Global Field Experience Fund as well as Emory's Boozer-Noether Grant. The Emory University Institutional Review Board (IRB) determined that the current study was exempt from IRB approval because it is embedded within a larger, ethically approved, WHO Alliance project aimed at improving district level maternal health plans in Karnataka, India.

Nevertheless, high ethical standards were adhered to throughout the study period. Before each interview began, participants were first informed of the study objectives and purpose and were told that any information they shared would be kept confidential. They were also told that if they decided to consent to participate, they had the power to withdrawal that consent at any point during or after the interview and that their decision would not result in any negative consequences. After this information was shared, written consent to be interviewed and recorded was obtained from each participant. For illiterate participants, the form was read aloud and fingerprints were obtained. Verbal consent was attained from the hospital manager, doctor,

nurses, and patients to conduct the observation in the FRU. All field notes, recordings, and interview materials were locked up or deleted after use and transcripts were immediately de-identified to ensure participants remained anonymous and at minimal risk.

Results

This section outlines the four distinct stages of the *Soliga* women's most recent birth: deciding to seek institutional obstetric care, choosing an obstetric care facility, arriving at an appropriate obstetric care facility, and receiving adequate obstetric care at a facility (Tej Ram Jat et al., 2015). A summary of the influential factors that occur at each stage can be found in Table 1. Afterwards, the factors that health workers perceive along the tribal women's obstetric care seeking process are compared to the women's stories and the nuances within the health worker's perceptions are identified.

Table 1: *Influencers Experienced by Soliga Women Along the Path to Institutional Obstetric Care*

	Deciding to Seek Institutional Obstetric Care	***Choosing the Obstetric Care Facility***	***Reaching an Appropriate Obstetric Care Facility***	***Receiving Adequate Obstetric Care***
Influencers Experienced by Soliga Women	• Knowledge of birth process & labor signs (+-) • Judgment of obstacles (+-) • A need to be strong (+-) • Personal autonomy (+-) • Fear (+-) • Comfort level (+-)	• Judgment of health staff • Situational knowledge (+) • Personal autonomy • Comfort level	• Communication with and between hospitals (+-) • Economic barriers (-) • Social support (+) • Availability of transport, resources, and health staff (+-) • Lack of contextual familiarity (-) • Patient-provider communication (+-)	• Attentiveness of health staff (+-) • Family support (+) • Patient cooperation (+-) • Availability of health staff (+-) • Willingness of health staff to take risks (+-)

+ Factor accelerated path - Factor delayed path +- Factor accelerated and delayed path

Influencers Experienced by Soliga Women

Stage 1: Deciding to Seek Care

Influencers that fall into this stage include those that impacted if and when the *Soliga* woman or her caretakers decided to seek institutional obstetric care. It also includes factors that led the women who attempted a homebirth to change their mind and seek care at a health facility. The factors identified as influencers of the *Soliga* women's decision to seek care include: knowledge, fear, judgment, comfort level, a need to be strong, and personal autonomy.

When the *Soliga* women were knowledgeable about the birth process—such as the time it would take to deliver a baby at home and what would occur once labor started—and were able to recognize labor signs, they were quicker to decide to seek care at a health facility. This was found primarily in women that had a previous birth. When the women did not immediately recognize labor signs, this often led to delays; women would wait till the pain became unbearable to seek care. In some cases, neighbors or family members informed the women that the pain they were experiencing was labor pain and that they needed to seek institutional obstetric care.

Fear and judgment both delayed and accelerated the women's access to care. While some women chose homebirths because they judged them to have fewer obstacles and feared the obstacles that might arise if they sought care at a hospital, the majority was afraid that they would not be able to handle any complications that might arise if they were to have a homebirth:

> *"If we are at home, if any problem arises, we cannot do anything, in hospital, at least they will give some treatment and we will be all right. We have that wish, if we are at home, we can do nothing."*

The fear of homebirth complications influenced them to seek institutional obstetric care. In addition to safety, many women were also influenced to seek care at a hospital because they judged homebirths to be time-consuming and felt the delivery would be much quicker in hospitals. Perceived risk of homebirth and delayed delivery were the two reasons that led women who had originally decided on homebirths to change their mind and seek institutional obstetric.

Comfort level regarding male doctors and privacy played a large role in influencing the women's decision to seek care at a hospital. The majority of women mentioned male doctors as a major source of discomfort and a deterrent to immediately seeking institutional obstetric care. However, this discomfort was overridden if the woman feared for her survival:

> *"I felt bad, but what to do I have to save my life, so…. If I had stayed back home for delivery I think I would have lost my life, so I had no choice I went and the male doctor did the delivery."*

Perceived level of privacy also influenced the women's path to care. Some women were influenced to go to the hospital because they felt there were too many people at home and preferred only having the doctor and nurses see them give birth. On the other hand, one of the women that gave birth at home delivered alone because she did not want any one at all to see her during child delivery.

The women's hesitancy in having family members see them give birth was linked to a common belief that the women needed to appear strong in front of family members during child delivery. While the majority of women did think that it was right to rely on family members for physical and logistical support during delivery, they did not think it was right to allow their family members to see them in pain. This led some women to seek care at a hospital quicker because they felt that it was okay for doctors to see them in pain:

> *"We have to face our pain, can we go and tell somebody else. We cannot do that, I cannot tell neither to my in laws nor to my husband, I have to face my problem myself, I cannot complain to them that I have stomach pain I can't bare it, If we scream or cry of pain, the doctor may come and console me, so it is better if I go to the hospital, after all they are doctors who work there"*

On the other hand, this sometimes caused delays in seeking care at a hospital when the women's need to appear strong led them to conceal their labor pain. As the family members were often the ones that organized transport to the hospital, the decision to seek care at a hospital was sometimes delayed when the women hid their pain. Furthermore, a few women mentioned homebirths as a demonstration of women's strength and mentioned that as a reason they delayed seeking care at a hospital or why they wished they had not needed to seek care there. However,

the majority of women viewed homebirths as a risky practice of the "olden days" and opted to go to an obstetric care facility shortly after labor began.

Lastly, the women rarely made an autonomous decision to seek care at a hospital; parents, in laws, siblings, aunts, uncles, neighbors, and, husbands were identified as the primary decision-makers who influenced if and when women sought institutional obstetric care. Depending on their decision, this either delayed or accelerated their path to obstetric care. The majority of women willingly gave the decision-making control to their care team, but a few women either decided for themselves or made a decision that was overridden by a member of their care team.

Stage 2: Choosing the Facility

Influencers that fall within this stage include the factors that women or her care team considered in selecting which facility they would go to for obstetric care. This does not include factors that impacted the women's ability to access that facility. In addition, the majority of decisions made in this stage did not accelerate or delay the women's path to obstetric care; they just directed it. Situational knowledge, economic concerns, judgment, comfort level, and personal autonomy determined where the *Soliga* women decided to seek care at a hospital.

Situational knowledge—meaning knowledge about a certain condition or circumstance that would affect the women's ability to access care at a hospital—is the one factor in this stage that determined the speed of the women's path to institutional obstetric care. In a few cases, the women learned from social networks within the community that health staff or necessary resources were lacking at the facility they selected for delivery. This led the women to skip over those facilities and thus avoid the delay of arriving at an ill-equipped facility. In addition, *Soliga* women would accelerate their path to obstetric care when they went straight to a higher-level

facility because they knew from antenatal care (ANC) check-ups that their delivery would be complicated or if they knew from prior experience that certain hospitals were hesitant to attempt the delivery if the women had not yet reached the delivery date predicted in her medical file.

Furthermore, the *Soliga* women expressed a variety of negative judgments about certain facilities as reasons for avoiding them at the time of delivery. They avoided hospitals that they judged to have unreliable health staff, unskilled nurses, and insufficient resources:

> *"Many times doctors are not available in [hospital name]...So if something happens on the way to the hospital what to do, we will get into trouble. So I decided to go to the district hospital. There will be only nurses in [hospital name]. What can nurses do? They are all trainees and they do not know giving injections even. How can they do delivery? So I decided to go to district hospital"*

If possible, they selected a facility that had skilled female maternal health workers as they were uncomfortable with having a man deliver their baby.

Lastly, level of personal autonomy influenced how involved the participant was in deciding the obstetric care location; a few women chose where they wanted to deliver, but elderly female family members most often made the decision.

Stage 3: Arriving at an Appropriate Maternal Health Facility

Influencers that fall into this stage include those that affected the women's ability to arrive at a facility that was sufficiently equipped to handle her case. Intra-hospital communication, patient-provider communication, trust, contextual familiarity, economic barriers, social support, and availability of transport, resources, and health staff influenced the *Soliga* women's ability to reach an appropriate obstetric care facility.

Inability to contact the hospital occasionally delayed the women in accessing obstetric care at a hospital. There were a few cases, mostly at night, where the women did not have a way

to contact the hospital or transportation services. This led to delays in accessing care at a hospital.

Intra-hospital communication was an issue because hospitals would refer patients without first contacting the referral hospitals. This led to women arriving at facilities that were ill-equipped and not prepared for their case. On occasion it also led to the women being blamed as negligent for not going to the hospital sooner for her now emergency condition.

Furthermore, referral directions and reasoning were often not communicated effectively to women. In addition, women were sometimes turned away from facilities—because they did not have the appropriate paperwork or because the facility was not able to handle their case—without being referred or told where they should go. These three scenarios led them to go to incorrect and ill-equipped facilities, thus delaying their access to institutional obstetric care. Furthermore, there were a few cases in which the women felt that, due to a lack of an explanation, the health staff simply did not want to treat them. They did not indicate whether or not their trust in the referral reasoning accelerated or delayed their access to institutional obstetric care, only that that they questioned it. Nevertheless, in the few cases where intra-hospital communication was made and referral directions were communicated effectively, the women's path to obstetric care was accelerated.

A lack of familiarity in navigating outside their village as well as hospital and informal expenses served as an occasional barrier to institutional obstetric accessing care. However, family or social support usually overcame them. The *Soliga* women occasionally mentioned that they were referred but did not know how to navigate to the hospital in which they were referred to. When this was the case, family members were contacted to help them. Economic barriers were usually planned for ahead of time through saving and borrowing, but there were a few cases

in which women went to a private facility without realizing that they would not be able to afford the cost of admittance. This resulted in delays in accessing care at a hospital. There were a number of other economic concerns that were mentioned—such as lack of finances for transport, food at the hospital, or medicines—but the women always mentioned that they were able to borrow from neighbors or family members to overcome these barriers.

Availability was another substantial influencer on the women's ability to access care at a hospital. The lack of doctors and resources, such as blood, were a common reason that the women were referred and delayed access to institutional obstetric care. Furthermore, lack of functional transportation also led to delays in many of the women's stories. However, these transportation barriers were sometimes overcome with, again, social support and connections within the women's community. For example, when an ambulance was not available, vehicles from local businesses were used if the women had connections with them. Overall, when transport, doctors, and resources were available, the women's path to obstetric care was accelerated and if they weren't, it was delayed.

Stage 4: Receiving Adequate Obstetric Care Upon Arrival at Maternal Health Facility

The influencers at this stage include those that affected the *Soliga* women's' ability to receive obstetric care once they arrived at an appropriate maternal health care facility. Cooperation, attentiveness of health staff, availability of resources, family support, financial accessibility, and willingness of health workers to take risks affected the women's ability to receive adequate obstetric care once at an appropriate facility.

The *Soliga* women often felt that they must cooperate and listen to whatever the maternal health care workers said in order to receive adequate obstetric care. Some of the women indicated that they must cooperate to avoid being beaten and to avoid making a scene. While all

of the women accepted that they must cooperate with the health staff, some felt that it was for their own good, and other's felt that they had no other choice.

The attentiveness of the health staff, family support, and availability of resources determined how quick the women received obstetric care, if at all, at the facility. While in some cases, the women mentioned that health staff frequently checked up on them to make sure that she and her baby were safe, in other cases, the doctors lack of attentiveness led to significant delays in receiving adequate obstetric care. In one case, poor attentiveness of health staff resulted in a women giving birth in the ward of the hospital:

> *"We decided not to stay at home and we thought there are experienced nurses and doctors at hospital and they take care of us well. But they did not take good care…..When I went at the night, doctor said 'let her walk slowly in the ward' and went. But I was not able to walk. After that nobody came and saw me… I gave birth in the ward"*

In this case, female family members took charge in delivering the baby. Male family members sometimes played a significant role in ensuring adequate care by taking responsibility in retrieving any medicines or supplies that were not readily available during the women's delivery. Availability of blood, or lack thereof, also influenced the women's ability to receive adequate care at a hospital. Some hospitals ran out of blood for the patient and needed to refer them to another facility.

The women also identified the willingness of health workers to take risks as a determinant to receiving adequate care. While some health workers turned the women away immediately, others stated that they were not completely equipped but that they would attempt to deliver the women's baby. In cases where the health workers successfully delivered the baby, this willingness accelerated the women's path to adequate obstetric care. However, there were some cases in which the health worker attempted to do a risky delivery and then decided half-

way through that the delivery was too risky and referred the women late. This resulted in the women's case becoming increasingly complicated by the time she reached the delivery location and thus influenced her ability to receive adequate care at a hospital. In addition, the women identified the health workers' willingness to bypass certain rules, such as the necessity for women to have their maternal health card in order to receive treatment, as an influential factor affecting the women's ability to receive adequate care at a hospital. In some cases they would not allow the women in without appropriate paperwork, but at other times—often once the case had become an emergency—they would bypass administrative rules to treat the women.

The pathway to obstetric care was characterized by various influencers that both delayed and accelerated their care seeking process. While each woman's path was different, Case 1 illuminates the interaction between many of the common influential factors found across the women's stories. The true name of the patient was replaced with a pseudonym.

Case Study 1-Mahadevi's Story

Mahadevi went into labor at 3:00 pm. The delivery date on her maternal health card was not for 15 days, so her family hesitated in contacting the hospital. After 15 minutes the pain became severe and her husband called the community hospital to request an ambulance. He was told that the ambulance driver was not there. Mahadevi's husband then hired a local driver to come as near to their house as possible. Her husband, with the help of his sister, carried Mahadevi along the one-mile dirt path to the main road where the car was waiting.

The car took Mahadevi, her husband, and two of his sisters to the nearby community hospital. When they arrived at the hospital, they found the nurse and ambulance driver conversing. Mahadevi's husband argued with the nurse and ambulance driver about the claim that no driver was available, but was informed that the jeep was actually under repair. The nurse then told Mahadevi's family that they could not handle her delivery because the doctor was not there. Mahadevi's husband called one of his sisters that worked at a local business. She was able to give them a ride in the company vehicle. Before heading to the nearest primary level facility, a community member informed Mahadevi and her family that the doctor was not there today and that her case appeared too serious for the staff nurses to handle. The community member advised the family to go straight to the nearest secondary level facility.

Mahadevi arrived at the secondary level facility at 5:00pm. The health staff attempted to deliver her baby, but soon ran out of blood and told Mahadevi that they would need to refer her because she was anemic and her delivery was too risky. Mahadevi's family was concerned because they did not have enough money to stay for an extended period of time at the hospital and they had never been to the city they were being sent to. They were able to borrow money from family and Mahadevi's uncle came to accompany her, her husband and her sister-in-law in the ambulance as he was familiar with the tertiary facility and willing to assist them.

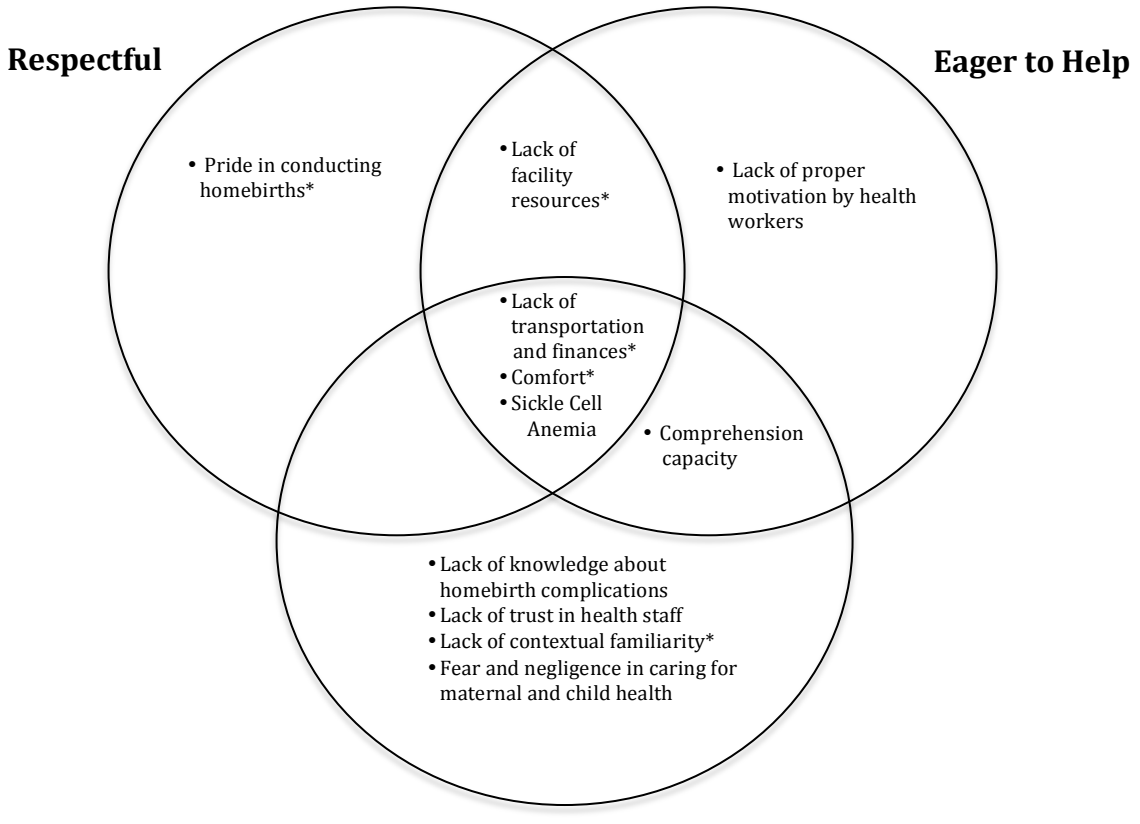
Mahadevi arrived at the tertiary level facility at around 9:00pm. She had substantial blood loss and was nearly unconscious. Mahadevi and her family were asked to wait in the waiting room. When the doctor approached them, she shouted at Mahadevi's family for waiting too long to come to the facility and scolded Mahadevi for being so anemic. The doctor told her family that she could not treat Mahadevi because the delivery was too risky. However, the family convinced her and she took Mahadevi into the delivery room. Mahadevi gave birth within an hour.

Spectrum of Maternal Health Care Worker Perceptions on the Provision of and Barriers to Institutional Obstetric Care for Tribal Women

Interviews with maternal health nurses in the area unveiled that they identified and understood many of the obstacles tribal women faced in their obstetric care seeking process. Similar to the *Soliga* women, they defined lack of transportation, discomfort with male staff, limited finances, lack of facility resources, and lack of contextual familiarity as barriers to obstetric care. In addition, they mentioned that clear patient-provider communication, patient cooperation, and a willingness of health care workers to take risks accelerated access to adequate obstetric care for both tribal and non-tribal patients.

However, they mentioned a number of additional barriers specifically for the tribal women. While all of the health workers highlighted transportation, finances, comfort, and the tribal women's common sickle cell anemia status as a barrier to adequate obstetric care, the majority of the other identified barriers differentiated among: (1) health workers that were respectful of the tribal women's perspectives; (2) health workers that were not completely familiar with the tribal culture but were eager to help them improve their maternal health; and (3) accusatory health workers that viewed tribal women as responsible for many of the barriers they faced in reaching obstetric care. The distinction between the barriers identified by these three attitude groups is outlined in Figure 2.

Figure 1: *Attitudes of and Barriers Identified by Maternal Health Workers Providing Obstetric Care to Tribal Women*



**Barriers that were also mentioned by the Soliga women*

Respectful Health Workers

When asked to distinguish between the challenges the health workers face in treating tribal and non-tribal women, health workers in this category identified or stated specifically that there was little to no difference between the two groups and that they did not think to compare them. In describing the tribal women, they explained that they had improved greatly in the recent years; their knowledge of how to care for their health and nutrition during pregnancy had improved, and their willingness to come to the hospital and be treated by male doctors had increased. Furthermore, they demonstrated great pride in being able to serve the needs of the tribal women:

> *"It is important for me to serve them, I never have a mindset that I receive salary so I have to work, what is important for me is I should listen to the problems of the [tribal] people and try to give my services to them and be helpful to them, I am always ready for that, in future people should remember me as, these were the changes brought in the period when I was working as health worker."*

Health workers in this category only identified obstetric care barriers for the tribal women in the stages of seeking care and accessing adequate care. The perceived barriers in the seeking care stage included a fear of obstetric care cost at a hospital and a feeling of pride in delivering at home. The perceived delays in the accessing care stage included: a lack of vehicles, limited awareness of how to organize transport, an inability of facilities to treat certain conditions such as sickle cell anemia and blood transfusion needs. On the other hand, they mentioned the willingness of health workers to speak nicely and make the tribal women feel comfortable with them as facilitators to receiving adequate care at a hospital.

Health Workers Eager to Help

Health workers in this category stated that tribal women did not know how to care for their hygiene and that they were harder to motivate than non-tribal women; they felt that more

effort needed to be put in to making them happy, comfortable, and able to understand why they should come to the hospital. The main barrier they identified was a lack of proper motivation by health staff. By proper motivation they meant to:

> *"Treat the tribal's in a very friendly manner, I especially remember some of their names and call them by their name, they will feel happy, if it is like that. First, the health workers should go and motivate them madam, then they will feel happy. Now you went to speak to them, they felt happy, these people have come to see us, they feel they are inquiring about us, they have concern for us, these things come in their mind."*

Health workers in this category expressed that if health workers visited tribal women on a regular basis and inquired about their health, the tribal women would then be more willing to listen to their advice about going to the health center for delivery. Other barriers that this group of health workers mentioned included: lack of transport in the night, the lack of capacity of some health centers to deal with the commonly found cases of sickle cell anemia, the ability of tribal women to quickly understand the importance of coming to the hospital, and the hesitancy of some tribal women in being referred due to their inability to pay for the informal costs that would be required.

Accusatory Health Workers

Health workers in this category found tribal women to be uncaring of their health, backward, dirty, unaware of how health centers worked or the need to use them, fearful and low in confidence during delivery, and unable to care for their own health without supervision. They spoke of the difficulties in caring for them, stating:

> *"Sometimes we may have to fear them (laughs) if you see them speak so roughly, we sometimes fear they will start fighting with us, and if we say, if anything untoward happens you should take the responsibility, they say why we are responsible, you are there, they will not stay even on insistence and if they go they will not take the responsibility of the health"*

Furthermore, they felt that tribal women acted very entitled when they came into the health facility, stating that:

> *"They will not wait, we are tribal, you should leave us first, they still think we are from backward community, and this is for us, they think like that, and all the facilities they should be given….They have this attitude, we are tribals, we need that money and [the health center] is for us"*

The health workers in this category mentioned a number of barriers and a few facilitators as influencers in the tribal women's decision to seek institutional obstetric care. They acknowledged that the tribal women were shy in receiving care from male health workers and that sometimes led them to delay in seeking care at a hospital. They also mentioned that the tribal women—including their families—sometimes delayed in seeking care at a hospital because they lacked knowledge about how to care for maternal and child health and the complication risks of homebirths. They felt that they needed to be told many times in order for them to understand the importance of coming to the health center for delivery and that health workers could motivate them by scaring them about the potential complications of a homebirth. Additionally, they mentioned the government's incentive programs as a facilitator in the women's decision to seek care at a hospital, stating, "they will at least come to avail that."

In choosing and reaching an obstetric care facility, the health workers in this category again mentioned a number of barriers. They felt that tribal women's choice of facility was influenced by economic concerns and familiarity with the facility. As far as reaching the first point of care, they felt that transportation was difficult from their village, but that a part of that problem was that tribal people did not know the hospital phone number or how to call an ambulance and thus needed to rely on others. In the case of referrals, the health workers in this category felt that tribal women were much more fearful than non-tribal women and that they allowed that fear to outweigh the importance of their health and the health of their baby:

> *"The non-tribal patients, if we explain about the condition of the patient like the [blood pressure] is very high, we cannot handle it here, you have to go to a higher center, if we say that they will immediately agree for that and get ready to go for the safety of the mother and the child, but in tribal community patients they will not be ready to go immediately, they will get panic, they say we are afraid to go such a long distance, we cannot handle it, anyone of you please come with us, like this they are very scared, but, general category is not like that, they boldly say ok, we will go to [the referral hospital], and they will go, but tribals are not that bold, they fear."*

Furthermore, they felt that tribal women often delayed when faced with referral because they did not trust that the reasoning for referral was for their own benefit, but instead for the benefit of the health worker.

Lastly, the health workers in this category named a few barriers for the tribal women in receiving adequate care once at an obstetric care facility. They mentioned that tribal people sometimes do not know where to get the necessary medicines, and that they are unable to understand health workers unless the health workers speak on the tribal women's level. Additionally, the health workers felt that tribal women sometimes face more complications in the hospital because they do not manage their nutrition during pregnancy and it thus creates problems during delivery.

In conclusion, the *Soliga* women experienced several influential factors that both accelerated and delayed their path to adequate obstetric care. The factors identified in the women's stories and those perceived by the health workers did overlap in some areas. However, there are several important distinctions between the two groups as well as within the health worker's perceptions. The importance of these differences will be discussed in the following section.

Discussion

This research outlined the pathway to obstetric care from the two distinct perspectives of *Soliga* women who had recently given birth and the maternal health nurses that provide them care. It further distinguished between the differing attitudes that health workers had towards tribal women and illustrated how these attitudes affected the barriers they perceived along the tribal women's pathway to care. There have been many previous studies on the barriers and facilitators to obstetric care for rural women in India. However, there have been no qualitative studies that investigated the perspectives of South Indian tribal women themselves on how they sought institutional obstetric care as well as how that seeking process was perceived by the maternal health workers. This study examined the obstetric care seeking process from both viewpoints to gain a more comprehensive understanding of the context in which barriers and facilitators to obstetric care arise and the reasons for them.

Four key findings arose from the data collected for this research. First, while health workers focused on knowledge, motivation, and capacity of tribal women to access care at a hospital, the majority of *Soliga* women demonstrated a keen awareness of the need to seek care at a hospital and most often did so. Second, more than half of the access issues that occurred in the *Soliga* women's path to institutional obstetric care happened after they reached their first point of care. Third, many *Soliga* women were able to overcome access barriers due to social support and situational knowledge. Lastly, the barriers identified by health workers varied by their attitudes towards tribal women and their perceptions of differences between tribal and non-tribal patients.

Knowledge of Homebirth Risks

Despite the perceptions of health workers that tribal women lack knowledge on hospital births, most *Soliga* women themselves were knowledgeable about the risks of homebirth and aware that a hospital birth was a safer option. However, the reasoning of *Soliga* women for homebirths went beyond safety issues to also include a desire for privacy, a preference to conceal their pain from others, and a discomfort with the presence of male doctors at the birth. This finding suggests a need for more female doctors as well as a need for increased health worker training on the awareness of tribal women's preferences and employing cultural sensitivity in delivering obstetric care. While many of the health workers acknowledged that the tribal women were uncomfortable at certain points, some providers felt that tribal women needed to overcome this issue and it was not something to be adjusted to on the part of the health facility. While further research needs to be conducted to understand exactly how this belief affects health workers delivery of obstetric care, studies in similar contexts have shown that such a lack of cultural sensitivity can severely impact the quality of care that is delivered (Adamson et al., 2012; Das & Sarkar, 2014; Sychareun et al., 2012). As the NRHM has employed more and more health workers that are members of the tribal communities themselves, there is potential for training to be sourced from within the health worker network itself (Ministry of Health and Family Welfare, 2014).

Referral Access Barriers

Another major disconnect between health workers and the *Soliga* women was that health workers assumed most barriers for tribal women occurred before the women reached the first obstetric care facility, while the majority of influences mentioned by *Soliga* women themselves occurred after they reached the first facility. The health care workers made little

acknowledgement of the barriers caused by not communicating with the hospitals they referred patients to. This paired with the insufficient communication between health workers and the patients they were unable to treat led to women travelling to an unnecessary number of facilities before receiving obstetric care.

The fact that most barriers occurred after the *Soliga* women arrived at an obstetric care facility provides evidence to the growing body of literature emphasizing that in addition to increasing incentives for women to seek a hospital birth and making transportation more available, focus also needs to be placed on improving supply-side factors within the health care system, especially the quality of referral services (Das & Sarkar, 2014; George, 2007; Knight, Self, & Kennedy, 2013). Significant delays in a women's pathway to obstetric care could be reduced if hospital referral policies were put in place that require health staff to give specific directions on where patients should go when they are referred and verify that a hospital is able to handle a maternal health case prior to referring a patient there. However, as observed in this study and in the literature, nurses are already being increasingly overloaded with work after the initiation of the NRHM; their excessive workloads already hamper their ability to deliver quality care (Lim et al., 2010). This heavy workload could be the reason that focus is not being placed on referrals. As improving the referral system would most likely decrease the number of emergency cases and the resources required to treat them, it would be a cost-effective decision for maternal health policy makers to either create initiatives that reduce the administrative workload of maternal health workers or allocate funding, especially at primary level facilities, for staff whose primary responsibility is to direct referrals. As some community members in the *Soliga* women's stories demonstrated knowledge of how to navigate between hospitals, this staff could be hired directly from the community—a solution that has proven successful in other

regions of India (Padmanaban, Raman, & Mavalankar, 2009). This would avert the growing challenge in India of hiring health personnel that are willing to work in rural villages far from their homes (Padmanaban et al., 2009).

Overcoming Barriers with Social Support and Situational Knowledge

Lack of transportation and finance limitations are common barriers identified in the literature on maternal health seeking behaviors (Bruce et al., 2015; Iyengar et al., 2009; Tej Ram Jat et al., 2015; Khan & Pradhan, 2013; Meerambika Mahapatro & Kumar, 2009). While *Soliga* women in this study also mentioned these, most women were able to rely on social support systems and situational knowledge to overcome these barriers. This is supported by the literature as many studies identify social connections and family support as facilitating factors in reaching institutional obstetric care in India (Iyengar et al., 2009; Tej Ram Jat et al., 2015; Neelanjana, 2011). As India has placed increasing focus on programs directed towards improving the health in rural regions, these findings suggest that there should be even greater focus on harnessing social resources and support that is already available, especially for geographically isolated communities.

Division of Perceptions Among Maternal Health Workers

This study illuminates a number of barriers health workers identify, as well as the varying degrees to which they attribute those barriers to the women's tribal status. This variation in perceptions reflect India's move away from the traditional caste system and the discrimination that has been intertwined with it. There have been a growing number of studies that have identified quality of care as a key influence of maternal health seeking behavior and many have suggested that the quality may be influenced by persistent discrimination towards poor, low

caste, and tribal populations (Adamson et al., 2012; Sri et al., 2012). While this study does not show any evidence of overt discrimination, it does show that health workers attitudes and perceptions of tribal and non-tribal patients do differ on some issues. In addition, it shows that providers' attitudes and perceptions about tribal populations can influence which barriers they perceive along their pathway to institutional obstetric care as well as what solutions they think will address them. As maternal health workers are key stakeholders in addressing women's health, it is essential that these differing attitudes be considered when planning maternal health action plans.

Furthermore, some studies link attitudes similar to those echoed by the accusatory health workers in this study to micro-aggressions such as the skipping of SC/ST houses during MCH visits and the discriminatory provision of health care information (Mamgain, 2014). While further research is required to understand what role the differing perceptions have on the care the health workers deliver in the BR Hills context, potential discriminatory behavior could be subverted by increased monitoring on a grassroots level. As Mamgain (2014) emphasizes, health officers should ensure that tribal community members are given active roles on health service monitoring committees; this will give them the power to advocate for and ensure that tribal populations are treated equally at their local health centers. However, as some research highlights that years of exposure to structural discrimination has led to a subconscious inferiority complex among SC/ST groups, tribal populations as well as health managers should also be provided with sensitization training about the rights of tribals so that discriminatory actions are recognized and health managers are held accountable for addressing them (Chattopadhyay, 2015).

Study Strengths and Limitations

This study was the first of it's kind in that it compared both health workers and tribal women's perceptions about the pathway to institutional obstetric care in Southern India. By using qualitative methods it was able to unveil the nuances between and within the two participant groups. It also provided insight on how varying attitudes about a specific population—in this case tribal women—can influence how their pathways to obstetric care are viewed. While an increasing number of studies are questioning whether or not discrimination is a factor in health care delivery, this study shows that instead of only focusing on discrimination, that the nuances in perceptions also need to be examined to see what effect they may have on care delivery.

While this study had many strengths, there were a few limitations. While having a tribal field assistant was on many occasions a benefit as participants were more open to sharing with a fellow tribal woman, the familiarity of the participants with the tribal field assistant could have limited the data shared for some women. However, every attempt was made to subvert this limitation; field assistants went through intensive training on the importance of neutrality and ensuring complete confidentiality for the participants.

Lastly, the project's affiliation with one of the main hospitals being studied also could have deterred some patients and health workers from speaking negatively about the hospital. However, patients and health workers were assured that all documents would be kept confidential, that their identity would remain anonymous, and that all data would be deleted after the study was completed.

Conclusion

This study highlights the influential factors that tribal women in Karnataka, India experienced in seeking institutional obstetric care and those perceived by the health care providers. The findings indicate that while maternal health workers do demonstrate varying levels of understanding of the tribal women's pathway to obstetric care, there is a substantial amount of disconnect regarding the perceptions of tribal knowledge, motivation, and negligence as well as the timing of barriers. Furthermore, the *Soliga* women's stories highlighted the potential of social support systems to help overcome access barriers along the institutional obstetric care seeking process. The findings of this study can be used to inform maternal health programming that reinforces the ability of community level social support systems to facilitate access to care at a hospital, strengthens the referral system quality, enhances the cultural sensitivity of health workers treating tribal populations, and improves the grass roots level monitoring and management to ensure non-discriminatory health care provision. Further research is required to investigate why the attitudes and levels of cultural sensitivity among health workers vary and what affect their attitudes have on provision of care.

Public Health Implications

The results of this study provide strong suggestions on how to tailor maternal health plans to the needs of tribal populations living in contexts similar to the *Soliga* women of BR Hills and highlights the need for further research on the effect of differing health worker attitudes on obstetric care provision.

First, discomfort related to the presence of male health providers at the birth and privacy issues were the main barriers that prevented women from seeking care, despite many health workers' presumptions that knowledge and comprehension capacity were the most substantial barriers. Thus greater focus should be placed on training health workers to provide culturally sensitive obstetric care. The health workers interviewed in this study had varying levels of autonomy in the provision of obstetric care. Those with greater autonomy were more confident in performing obstetric procedures and often did so without the presence of the male doctor. If training programs are focused on improving the skills of female maternal health nurses so that they are able to conduct deliveries, women's discomfort with male doctors can be accommodated for. While hiring female nurses would appear to be a simple solution, one of India's greatest challenges is a limited supply of doctors (Deo, 2013); by increasing the skill level of nurses, the burden of limited doctors can perhaps be reduced.

Second, as many access barriers were related to the referral process, greater focus needs to be added on enhancing the quality of the referral system. Better intra-hospital communication systems need to be put in place so that doctors and nurses can verify if a hospital is properly equipped to handle certain conditions before referring a patient there. In addition, due to the substantial workload of nurses and doctors following the implementation of the NRHM, perhaps staff specifically dedicated to referrals should be hired or administrative tasks of health staff

should be streamlined (Lim et al., 2010). This would allow for greater focus and time to be spent on quality referrals and in turn reduce the delays that occur when women are referred to hospitals that are ill-equipped or lacking the appropriate staff to treat them.

Third, this study highlights that there is potential to utilize social support systems as a means to overcome access barriers to obstetric care. In contexts that share the similar customs of lending money and transportation to neighbors, interventions could be created to strengthen the ability of these social support systems. For example, micro-finance interventions are already popular amongst the *Soliga* tribe (Veena, 2006). These interventions could be strengthened so that funds can be made available if a woman is not able to pay for obstetric care at a hospital.

Lastly, while this study does not provide evidence of any discriminatory behavior of health workers towards tribal women as some studies speculate, it does indicate that there are varying attitudes—ranging from empathetic to accusatory—that health workers have about treating tribal women (Adamson et al., 2012). Furthermore, the accusatory health workers echo common prejudices applied to SC/ST populations in their description of *Soliga* behavior. While further research is required to investigate the causes of the variation in health worker perceptions and its effects on the provision of obstetric care to tribal women, monitoring committees that include tribal members can be employed to ensure that discriminatory health care provision does not occur.

While it is not feasible to suggest all interventions and research that can be conducted, this study provides an initial list of suggestions for maternal health policy makers in Karnataka on how to better tailor maternal health services to the needs of local tribal populations.

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Annex 1: IDI for *Soliga* Women

Opening questions

1. Can you tell me about your family?
2. Did you grow up in this podu?
    a. If yes, what was it like to grow up here?
    b. If no, how did you come to live here
        i. How does this village compare to where you grew up?
3. Can you tell me what it is like to live inside the forest?
4. What do you do if you have health issues?
    a. Why?

Now let's talk about your opinions on maternal health..

5. Living in BR Hills, how do you ensure a safe delivery?
    a. Why?
6. At what point do you think a woman should contact the health center?
    a. Why wait till then?
7. Who should be involved in the decision making-process during delivery?
    a. Why?
8. How do you think a woman should act during childbirth?
    a. Why?

Now let's talk about your pregnancy for your most recent child…

9. How did you come to know you were pregnant?
10. Can you describe the pregnancy?
11. How was the antenatal care during your pregnancy?
    a. Type
    b. Where
    c. How did you feel about this antennal treatment?
    d. What information did you receive during your antenatal care?

Now I would like to focus on your delivery….

12. Can you describe where you planned to deliver prior to going into labor?
    a. Why did you choose there?
13. Who was involved in planning your delivery?
    a. Why?
    b. How?
    c. How did that make you feel?
14. Can you describe any advice you received regarding your delivery?
    a. Effect of advice
15. How did this plan for delivery compare to your previous childbirth experiences?
    a. Why were they different? Why was it the same?

Now I would like to hear more specifically about your childbirth experience...

16. How did you realize you were going in to labor?

17. Can you walk me through the whole experience from when you realized you were in labor to the moment you delivered?
    a. *If the participant delivered in a health facility:*
        i. Decisions
            - Why that facility
            - Who was making the decisions?
            - How did that make you feel that they were making the decisions?
            - Why did you wait till then to go to the health center?
        ii. Transportation
        iii. Delivery Process/Health worker interaction
            - People in the room
            - Delivery procedure
            - What did the health workers say to you?
            - Feelings about health worker treatment
            - Comfort level
                a. Reasons for comfort level
            - Feelings during delivery
    b. *If participant delivered at home:*
        i. Decisions
            - Why did you deliver at home?
            - Who was making the decision?
            - How did that make you feel that they were making the decisions?
        ii. Delivery Process
            - People involved
            - Procedure
            - Comfort level
                a. Reasons for comfort level
            - Feelings during delivery
18. How did your actual delivery experience compare to what you had planned?
    a. Expected, unexpected
19. Can you tell me about any schemes that you know you are eligible for?
    a. How did you know about those?

Thank you for sharing your personal experience…

20. If you were to deliver again, where would you want to deliver?
21. What advice would you give another pregnant women about delivery?
22. What advice would you give district health managers of this area that were interested in improving maternal health services for childbirth?

Annex 2: IDI for Family Members of *Soliga* Case Study

Opening Questions

1. Can you tell me about your family?
    a. Family in law
    b. Brothers/sisters
    c. Children
2. Did you grow up in this podu?
    a. If yes, what was it like to grow up here?
    b. If no, how did you come to live here?
        i. How does this village compare to where you grew up?
3. Can you tell me what it is like to live inside the forest?
4. What do you do if you have health issues?
    a. Why?

Now let's talk about your opinions on maternal health..

5. Living in BR Hills, how can you ensure a safe delivery?
    a. Why?
6. At what point do you think a woman should contact the health center?
    a. Why wait till then?
7. Who should be involved in the decision making-process during delivery?
    a. Why?
8. How do you think a woman should act during childbirth if everything is to go well?
    a. Why?

Now let's talk about the most recent pregnancy of your wife/sister in law/daughter in law…

9. How did you come to know your wife/sister in law/daughter in law was pregnant?
10. Who was involved in caring for your wife's/sister in law's/daughter in law's health during pregnancy?
    a. What did they do
    b. How
    c. Why?

Now let's focus on the delivery…

11. Who was involved in planning your wife/sister in laws/daughter in laws delivery?
    a. Why?
    b. How?
    c. If it was the mother in law:
        i. Where did you learn how to do this?
    d. If it was not the mother in law
        i. How did you feel about this plan?
        ii. Where did you want your daughter in law to deliver?
12. *If mother in law:* How did you experience as a mother prepare you for your role as a mother –in-law?
13. How did you realize your wife/sister in law/daughter in law was going in to labor?

14. Can you walk me through the whole experience from when your wife/sister in law/daughter in law went in to labor till her delivery?
    a. Transportation
    b. Decisions
        i. Why that facility?
        ii. Who was making the decisions?
            - Why?
        iii. Why did you wait till then to go to the health center?
    c. What were you doing while your wife/sister in law/daughter in law was delivering the baby? (H)
        i. How did that make you feel?
    d. Health worker interaction
        i. What did they say to you?
        ii. How did they treat you?
        iii. How did they treat your daughter in law?
        iv. How did you feel about this?
    e. What other feelings did you have while your wife/sister in law/daughter in law was delivering?
15. Were there any challenges that you noticed during the delivery?
16. How was your wife/sister in laws/daughter in laws health after delivery?
17. How did she return home?
    a. Who was with her?

Now I'd like to hear what recommendations you have…

18. What would you want for your wife/sister in law/daughter in laws next delivery?
    a. Why?
19. What advice would you give district health managers of this area that were interested in improving maternal health services for childbirth?

Annex 3: IDI for Health Workers

Opening Questions

1. How did you decide to become a nurse?
2. How did you come to work in ____?
3. What is it like working in a health center within the forest?

Now I'd like to hear about your experiences as a nurse..

4. Can you explain what a typical day of work looks like?
5. What role do you play during deliveries?
6. How would you describe a good delivery?
    a. Interaction with patient?
    b. Procedure?
    c. People involved?
        i. How they are involved
7. How do you ensure safety during a delivery?
8. What kind of delivery cases do you typically get here at ____?
    a. Do you get complicated cases also?
        i. How did you know it was complicated?
9. Can you tell me about a case that you have had to refer?
    a. Probe for the story and reasons of referral
        i. Why?
        ii. When did you decide to refer?
        iii. Who was involved in the decision?
10. Are there any other types of referrals you have had to do (early or late, depending on what they answered in questions 6)
    a. Probe for the story and reasons of referral
        i. Why?
        ii. When did you decide to refer?
        iii. Who was involved in the decision?
11. How would you compare your experiences in delivering maternal health services to tribals versus non-tribals?
12. (TRIBAL NURSE ONLY)-What's it like to be from this community and also work for the health center?
13. Some of the tribal women in BR Hills have had very positive experiences at the health center and others have had negative experiences. Why do you think their experiences differ?
    a. How do you feel you can influence whether on not the woman has a positive or negative experience?
14. What are some of the biggest challenges you face in your job?
    a. Maternal health related
    b. Contributing factors
15. What recommendations would you have to improve childbirth services?
    a. Why?
    b. Why would that improve the child birth services?
16. Is there anything that would help you do your job better as a nurse at ____?