Factors in Seeking Skilled Care during the Perinatal Period: An Exploratory Study from Golche, Nepal

by

Claire Audrey Lama

Bachelor of Arts in Sociology, Cornell University, 2009

Submitted to the Graduate Faculty of the

School of Public Health in partial fulfillment

of the requirements for the degree of

Master of Public Health

University of Pittsburgh

2024

UNIVERSITY OF PITTSBURGH

SCHOOL OF PUBLIC HEALTH

This thesis was presented

by

Claire Audrey Lama

It was defended on

June 20, 2024

and approved by

Dr. Judy Chang, MD, MPH
Professor, Department of Obstetrics, Gynecology & Reproductive Sciences
University of Pittsburgh

Dr. Patricia Documét, MD, DrPH
Associate Professor, Department of Behavioral and Community Health Sciences
University of Pittsburgh School of Public Health

Thesis Advisor: Dr. Cynthia Salter, PhD, MPH
Assistant Professor, Department of Behavioral and Community Health Sciences
University of Pittsburgh School of Public Health

Factors in Seeking Skilled Care during the Perinatal Period: An Exploratory Study from Golche, Nepal

Claire Audrey Lama, MPH

University of Pittsburgh, 2024

In 2010, Nepal won a Millenium Development Goal Award from the United Nations for its exceptional achievement in reducing maternal mortality. Nepal had one of the highest maternal mortality ratios (MMR) of 990 deaths per 100,000 live births in 1990 and has brought it down to 115 deaths per 100,000 live births. This dramatic drop can be primarily attributed to the robust policies that the government has implemented to increase prenatal care, skilled birth attendance, facility-based deliveries, and postpartum care. Despite the drop in maternal mortality ratio, significant disparities persist. District-level maternal mortality ranges from 66 deaths per 100,000 live births to 478 deaths per 100,000 live births.

Further, people who live in urban areas are significantly more likely than those in rural areas to deliver in a health facility. Birthing parents in the highest wealth quintile are seven times more likely to have professional assistance at their delivery than those in the lowest wealth quintile. Janajati, Nepal's indigenous population, are the least likely to deliver in a health facility.

This thesis describes a qualitative study using semi-structured interviews with ten birthing parents and two informal key informant interviews in Sindhupalchowk, a district north of Kathmandu. The interviews examined decisions and considerations in seeking skilled care during the perinatal period and cultural norms surrounding the perinatal period. Interviews were supplemented with a short household demographic survey. Content and thematic analysis was conducted to synthesize latent and semantic themes. Additional descriptive quantitative analysis was conducted for the household demographic survey.

Participants identified barriers, including distance, lack of transportation, and poor road conditions, as significant in their decision to give birth at home. They also described spouses and traditional healers as essential collaborators in their decision-making process. This small exploratory study's findings are consistent with other work from Nepal and shed light on barriers that persist in accessing care for Tamang women in Sindhupalchowk. It demonstrates the need for further research among rural dwellers and minority ethnic groups, policies such as increasing transportation reimbursement, and collaborators, including spouses and traditional healers, for future programs.

Table of Contents

List of Tables

List of Figures

Preface

This study would not have been possible without the support of many people. First, I would like to express my gratitude to the University of Pittsburgh Nationality Room's Stanley Prostrednik Memorial Scholarship for funding this study. Thank you also to the families of Golche, who generously shared their experiences and many cups of tea with me. Thank you to Nepali collaborators Dr. Ram Lal Tamang, who allowed me to shadow him at the health post, and to Tinchen Lama, a midwife who shared her home and expertise with me, and who both care for so many families in Gumba, Nepal.

Thank you to the many mentors and collaborators at Pitt Public Health, your advice and guidance have been enormous. Thank you to my thesis committee, Dr. Judy Chang and Dr. Patricia Documét, for guiding this work. Thank you to my advisor, mentor, and committee chair, Dr. Cynthia Salter, who encouraged and guided me and answered desperate middle-of-the-night emails when I hit a roadblock while in the field.

And thank you to my family, who supported me as I returned to school. To my three adventurers who joined me in visiting Golche: becoming your mother has been a challenge and a joy. Your births are one of the reasons that I believe that all people should have the opportunity to give birth with dignity and safety.

Positionality

I first encountered Nepal's efforts to reduce maternal mortality in 2009 when I worked for an NGO on food security in the hilly regions of Nepal and visited a community hospital. I am grateful for that experience, during which my role was to help communicate between field-level

staff and financial donors through planning, monitoring, and evaluation. My goal in this research is also to communicate what is happening, not to change behavior.

I approach this work as a white American woman, mother, and spouse to a Tamang man. My pregnancies and births were challenging, but I never feared for my life. I live in an area in the United States with many options for giving birth. These experiences and identities shape the lens through which I perceive the world and can impact how I conduct my research.

Although I speak conversational Nepali and have spent years learning about the culture, I am still an outsider. I am grateful to Tinchen, who gave me significant feedback as we built the interview guide and survey together.

A Note on Language

People of various genders can experience pregnancy and birth, and not everyone identifies as a woman or as a mother. Study participants all referred to themselves as women and to their spouses as husbands. I use several terms interchangeably to refer to birthing parents, but the majority of the literature cited uses gendered terms such as maternal, woman, and mother. My use of gendered terms is not meant to exclude those who do not identify as women or as mothers but instead to represent the words of the study participants.

1.0 Introduction

1.1 Global Maternal Health

Reduction in maternal mortality is a target in the United Nations (UN) Sustainable Development Goals (SDG) framework and a key concern of the Global Strategy for Women's and Children's Health launched by the United Nations Secretary General. The SDGs set a global target of fewer than 70 deaths per 100,000 live births by 2030 and that no country should have a maternal mortality ratio (MMR) greater than 140 deaths per 100,000 live births. Maternal and newborn mortality are the indicators with the greatest disparities between low- and high-income countries (Haileamlak, 2018). The current global maternal mortality ratio is 223 deaths per 100,000 live births, but significant variations across regions exist (World Health Organization, 2023b). Maternal mortality is measured as a rate and as a ratio. Maternal Mortality Ratio is the number of maternal deaths during a given time period per 100,000 live births during the same time period. It captures the risk of death in a single pregnancy or single live birth. The maternal mortality rate has a denominator of the number of women of reproductive age, which considers the level of fertility in a population. Maternal mortality ratio is used throughout this paper.

A maternal death is any death that occurs from pregnancy through 42 days postpartum. Twenty-five percent of these deaths occur during pregnancy, 50 percent occur within 24 hours of delivery, 20 percent within seven days, and the remaining five percent between two and six weeks postpartum (World Health Organization, 2023b). Hemorrhage, hypertensive disorders, and infection are the leading causes of death. Complications from abortion, obstructed labor, and indirect causes are also significant contributors but are challenging to measure (Say et al., 2014;

World Health Organization, 2023a). Nine in ten maternal deaths are considered preventable with timely care (Pan American Health Organization, 2023).

All regions of the world saw a decline in maternal mortality between 2000 and 2020 (World Health Organization, 2023b), yet maternal mortality and morbidity remain a significant public health problem globally. Global trends obscure large inequalities in maternal death between regions (World Health Organization, 2023b). For example, the adult lifetime risk of maternal death for a 15-year-old in Western Africa is one in 27, and for a 15-year-old in New Zealand is one in 16,000 (World Health Organization, 2023b). Globally, this risk is one in 210. Women giving birth in low- and middle-income countries have a disproportionate burden of deaths. While only 13 percent of the world's population lives in the least developed countries, this group accounted for more than 40 percent of all maternal deaths in 2020 (World Health Organization, 2023b).

1.2 Maternal Health in Nepal

In 2010, Nepal won a Millennium Development Goal Award from the United Nations for its exceptional achievement in reducing maternal mortality. Prior to this, Nepal had one of the highest maternal mortality ratios in 1990 at 990 deaths per 100,000 live births (Bhandari, 2014). This dropped to 151 by 2021 (Bhandari, 2014), which can be attributed to a robust combination of policies and their implementation over the past thirty years (Bhandari, 2014; Karkee, 2012). The timeline of maternal health-related policies in Nepal is summarized in Appendix A.

1.2.1 Policies

In 1997, Nepal initiated the Nepal Safer Motherhood Program, supported by family health divisions in nine districts. This program increased the number of comprehensive and basic emergency obstetric and newborn care sites and improved the facilities in primary health care centers (Barker et al., 2007; Bhandari et al., 2011; Government of Nepal, 2019). While this project was limited in scope, it informed future policy and raised awareness of the importance of skilled birth attendants and emergency obstetric care (Bhandari et al., 2011).

In 2002, Nepal legalized abortion up to 18 weeks after a 1998 study demonstrated that the highest patient caseload in district hospital obstetric departments was from complications from unsafe abortion (Barker et al., 2007). Abortion services were expanded to all public health facilities in 2004.

The Safe Delivery Incentive Program was introduced in 2005 and provided a cash subsidy for transport costs to women giving birth in a public health facility (Barker et al., 2007). This was modified in 2009, called the Amma Surakchhya (*Safe Mother*) Program, and made delivery free nationwide at public and accredited private facilities. Additionally, health facilities were paid for the services they provided for maternity care (Shrestha et al., 2012). Modifications in 2012 expanded the program to include incentives for attending four antenatal visits, and in 2016, care was made free for newborns (Government of Nepal, 2019).

In 2006, the National Policy for Skilled Birth Attendants (SBA) was introduced, recognizing the importance of SBAs being present at every birth. This policy set out a strategy to improve the core skills of doctors, nurses, and auxiliary nurse midwives across the country, integrate these skills into training curricula, and expand the number of training sites nationwide (Barker et al., 2007). The goal was to have 95 percent of births attended by an SBA.

These policies have focused on increasing the number of births at health facilities, the number of births attended by an SBA, and the proportion of women attending four prenatal and three postpartum visits.

1.2.2 Challenges to Measurement

A challenge to understanding the drivers behind maternal mortality in Nepal is the lack of a reliable national recording and reporting system to track maternal morbidity and mortality (Hussein et al., 2011; Thapa, 2021). In 2023, Nepal launched a pilot Maternal and Perinatal Death Surveillance and Response System in 16 of its 77 districts (Ministry of Health and Population, 2022). Other sources of estimates for maternal mortality and morbidity include the Nepal Health Demographic Survey (NDHS) estimates (national-level only, conducted every five years), national multilevel regression models recommended by the World Bank (Bhandari, 2014), and the National Population and Housing Census (every ten years). These measures are available only on a national or district level (similar to a US state) and, therefore, cannot capture differences within districts. Underreporting is likely, especially in rural areas and among low-caste and ethnic minorities (Hussein et al., 2011). Some sources consider "pregnancy-related deaths," and some look at maternal deaths (Ministry of Health and Population, 2022). Pregnancy-related deaths are those that occur during pregnancy, birth, and up to 42 days postpartum due to a pregnancy-related cause. In contrast, maternal deaths are any deaths that occur during this period, no matter the cause (Demographic and Health Surveys Program, n.d.).

1.2.3 Current Situation

Overall, the fertility rate in Nepal is 2.1 per woman, a decrease from 4.6 in 1996. Also, during that time period, contraception use increased from 26 percent to 44 percent (Bhandari, 2014). The 2021 NDHS found that 80 percent of pregnant individuals had the recommended four antenatal care visits. Seventy-seven percent of deliveries were in health facilities, and 62 percent were in public health facilities. The overall cesarean rate was 18 percent, and 70 percent of birthing parents had any clinical postnatal care (Ministry of Health and Population, 2023).

Figure 1 shows the trend of maternal mortality, the percentage of births in healthcare facilities, and the percentage of births attended by a skilled professional. The current MMR estimate is 174 deaths per 100,000 live births (WHO et al., 2023). However, this ranges from 66 to 478 across districts, still a wide variation despite the national level decrease (Bhandari, 2014). A disproportionate number of deaths occurred among those with little or no education, among Muslims, Dalits (low caste), rural dwellers, and people who live in the mid- and far-west hills and mountains (Bhandari et al., 2011). A 2014 study found that these disparities exist in care-seeking and health facility delivery as well. Urban dwellers were more than 2.6 times as likely to deliver in a health facility and 2.5 times as likely to have professional assistance at birth than those who live in rural areas. Women in the highest wealth quintile were seven times more likely to deliver in a health facility and have skilled care than those in the lowest quintile (Shrestha et al., 2014). In a 2021 social autopsy, Karkee et al. (2021) found that 31 percent of deaths were among low-caste women despite this group being only 16 percent of the population. Of all the castes and ethnic

groups, Janajati were least likely to have a health facility delivery and professional attendance (Shrestha et al., 2014).

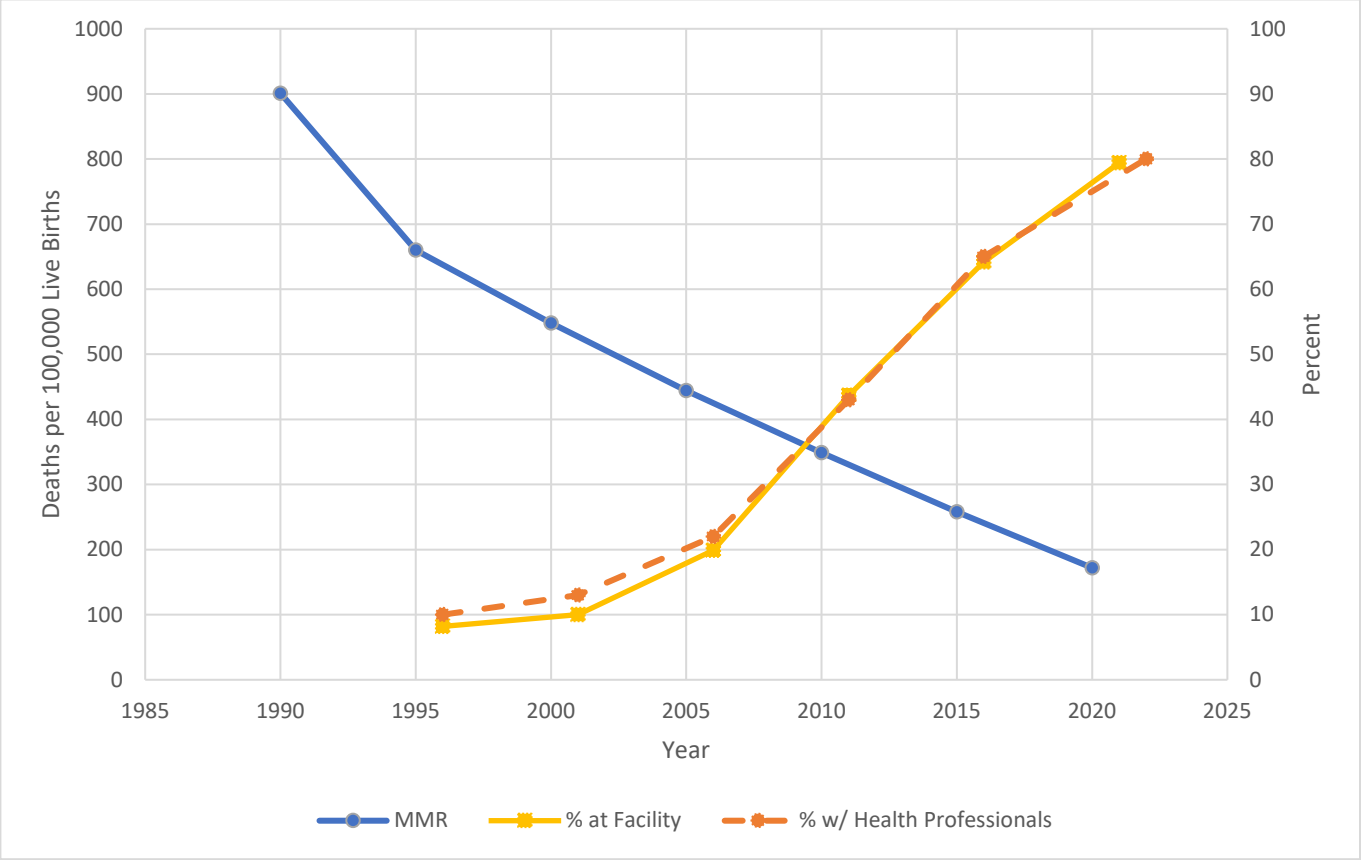

Figure 1: Trends in Maternal Health in Nepal 1990-2020

1.3 Caste and Ethnicity

Historically, the Hindu caste system has shaped the social lives of Nepalis, whether or not they were Hindu (Bennett et al., 2008). The caste system in Nepal is a major determinant of identity, social status, health, and economic opportunities. Within the caste system, people groups are identified by their ritual purity, and they are organized into four broad categories: the Brahman

priests, the Kshatriya kings and warriors (including Chhetris), the Vaisya traders, and the Sudra peasants and laborers. The relationships and interactions of these four categories of people were defined dating back to the 17th century. An additional group, Dalits, are technically outside of the caste system because their ritually impure occupations were considered untouchable by others (Bennett et al., 2008). In addition to these Hindu castes, existing indigenous groups called Janajati were accorded middle rank and divided into "non-enslavable" and "enslavable" by Brahman and Chhetris. Table 2 shows the historical social hierarchy, adapted from Bennett et al. (2008).

Table 1: Adapted Historical Social Hierarchy

Hierarchy	**Habitat**	**Belief/Religion**
A. Water Acceptable (Pure)		
1. Wearers of the sacred thread		
Upper Caste Brahman and Chhetri (Parbatiya)	Hills	Hinduism
Upper Caste (Madhesi)	Tarai	Hinduism
Upper Caste (Newar)	Kathmandu Valley	Hinduism
2. Matawali Alcohol drinkers (non-enslavable)/Janajati		
Gurung, Magar, Sunuwar, Thakali, Rai, Limbu	Hills	Tribal/Shamanism
Newar	Kathmandu Valley	Buddhism
3. Matawali Alcohol Drinkers (enslavable)/Janajati		
Bhote (including Tamang)	Mountains/Hills	Buddhism
Chepang, Gharti, Hayu	Hills	
Kumal, Tharu	Inner Tarai	Animism
B. Water Unacceptable (Impure)		
1. Touchable		
Dhobi, Kasai, Kusale, Kulu	Kathmandu Valley	Hinduism
Musalman	Tarai	Islam
Mlechha (foreigner)	Europe	Christianity, etc.
5. Untouchable		
Badi, Damai, Gaine, Kadara, Kami, Sarki (Parbatiya)	Hills	Hinduism
Chyame, Pode (Newar)	Kathmandu Valley	Hinduism

While caste-based discrimination was officially abolished in 1963, its effects are still widely seen (*Unequal Citizens: Gender, Caste and Ethnic Exclusion in Nepal*, 2006). Higher caste groups are disproportionately represented in the highest quintiles for wealth, education, and overall health measures. After discrimination was officially abolished, the social hierarchies remained, and more power and privilege were vested in the high-caste groups, resulting in further marginalization of non-Hindus, including Janajati, Muslims, and low-caste groups. The historical patriarchal system also assigned women a subordinate status and position, which persists today in policies surrounding the heritability of citizenship. While a 2023 Supreme Court ruling allowed citizenship to be passed from mother to child, it is valid only if the child is born in Nepal, not overseas (Asian Development Bank, 2010).

1.4 Janajatis and Tamangs

Nepal's Janajatis are a non-Hindu indigenous group consisting of 59 distinct ethnic groups, most of which have their own language. Tamangs are the largest group of Janajati and speak Tamang, a Tibeto-Burman language. Tamangs represent 5.6 percent of Nepal's 29 million population, and 90 percent are Buddhist. They live mainly in the hilly regions, especially in Central Nepal. When Janajati ethnic groups were incorporated into the caste system, Tamangs were considered "enslavable," meaning, in case of certain circumstances, they could be punished with enslavement.

Significant variation exists in the cultural practices of Tamangs throughout Nepal. Most of the published literature dates from the 1980s and 90s and was written primarily by Western anthropologists (Dahal & Fricke, 1998; Fricke, 1984, 1985; Fricke et al., 1990; Holmberg, 1980,

1996; Panter-Brick, 1989). While this literature provides some relevant background, much of it is from white Western scholars and does not incorporate Tamang voices.

In his book *People of Nepal*, Dor Bahadur Bista (1967), Nepal's first anthropologist, describes relationships within Tamang households as more equitable than in other ethnic groups. He describes a woman's role within the home as autonomous and that, unlike families within the Hindu caste system, Tamang families often eat meals together, whereas many other groups have a hierarchy for mealtime. However, even though they have a more autonomous role within the home, they face significant discrimination outside of the home. Bista (1967) also describes the important role of shamans (*jhankri* or *bompo*) in Tamang culture. Both Shamans and Lamas (Buddhist monks) are often called upon during times of sickness or to celebrate ceremonies such as rice feeding, when a baby begins eating solid food.

Recent literature examines Tamang traditions during the perinatal period but includes many contradictions (BK, 2006; Karki et al., 2019; Masvie, 2006; Timalsina, 2022). For example, descriptions in the literature vary widely about the timing of leaving the home after birth, alcohol consumption, breastfeeding, and rituals surrounding purity (BK, 2006; Masvie, 2006; Thapa, 2000). Similarly, there is a wide variation in descriptions of care-seeking practices. Timalsina (2022), for example, reported that 40 percent of Tamang women in Kathmandu had four prenatal care visits and 52 percent gave birth at home, while Karki et al. (2019) reported that nearly 60 percent of Tamang mothers in Nuwakot district had four prenatal care visits but gave birth at home less than 30 percent of the time.

In summary, a large gap remains in the research literature about the use of prenatal care and skilled birth attendants, as well as birth site preferences and practices among the Tamang people. Given the continued broad range in maternal mortality and morbidity in Nepal, the higher

MMR among low-caste and Janajati birthing people, and their lower likelihood of having a health facility delivery, research is clearly needed to better understand and communicate the current situation facing birthing people in this community.

2.0 Study Aims

This thesis describes a qualitative study completed in May to June 2023 in Golche, Nepal, exploring the perinatal practices and care-seeking behavior of Tamang families in Golche. The research includes the previously described literature review and the development of a semi-structured interview guide and demographics survey. The Primary Investigator (PI), Claire Lama, and Tinchen Lama, a Nepali midwife, field-tested the interview guide. They then used the guide to complete qualitative research interviews that comprise the data set analyzed for this thesis.

Research Question: What factors contribute to a family's decision to seek skilled care during the perinatal period?

Specific Aim 1: To explore cultural factors contributing to a family's decision to seek care during pregnancy, birth, and the postpartum period.

Specific Aim 2: To examine the role of proximity to a health facility in the family's decision to seek care during pregnancy, birth, and the postpartum period.

3.0 Methods

This qualitative study included semi-structured interviews, short demographic surveys with birthing parents, and informal key informant interviews with a Nepali midwife and physician. The interviews were conducted in Nepali and Tamang with an interpreter when needed. The key informant interviews were conducted in Nepali.

3.1 Data Collection

3.1.1 Interview Guide for Interviews with Birthing Parents

The primary investigator conducted a comprehensive literature review and, in conjunction with informal formative interviews, developed a semi-structured interview guide (Appendix C.) Together with Tinchen Lama, a local Nepali midwife, she translated the guide into Nepali and field-tested it. The guide covered domains of health practices during pregnancy and postpartum, healthcare access and utilization, traditional healers, birth location and attendance, previous pregnancies, and index pregnancies and health. The primary investigator created a demographic survey based on the Nepal Health Demographic Survey (NDHS) to capture the household characteristics of participants (Appendix B.) The primary investigator conducted qualitative interviews and collected household demographics using the interview guide and household survey.

3.1.2 Key Informant Interviews

The primary investigator conducted two informal key informant interviews. The first was with Tinchen Lama, a senior Nepali midwife, who works in Gumba, Sindhupalchowk. The second was with Dr. Ram Lal Tamang, a physician who works at the health post in Gubma, Sindhupalchowk. The interviews did not follow an interview guide and were conversational. These interviews took place after the participant interviews.

3.1.3 Timing

The primary investigator completed the interviews with birthing individuals and key informants from May to June 2023. Data collection was limited to a three-week period for this study.

3.1.4 Setting

Interviews with birthing families took place in Golche, Jugal Gaupalika Ward-2, Sindhupalchowk. The primary investigator conducted additional interviews with a Nepali midwife and a physician who worked at a government health post in Gumba, Jugal Gaupalika, a village approximately seven hours walk from Golche. Golche is in Sindhupalchowk, a district in the Central Hilly Bagmati Province of Nepal, with approximately 60 percent of the population living in rural villages. Golche has a population of 3,614 people, 65 percent of whom are Tamang (National Statistics Office, 2023). An official population size is not available for the village of Golche, but it has approximately 260 households. Sindhupalchowk has one hospital, two health

centers, 11 health posts, and 65 sub-health posts (DHS Program, 2022). In 2015, Sindhupalchowk was the epicenter of the Magnitude 7.8 earthquake that killed over 9,000 people and destroyed more than 700,000 houses (USGS, 2016). Historically, families lived in multigenerational homes, but rebuilt homes are smaller, single-family dwellings. Extended families still live very close to one another, share meals, and help each other with household work.

3.1.5 Eligibility and Recruitment

Inclusion criteria for this study were adults over the age of 18 who had given birth within the last two years in Golche. The primary investigator worked with a local interpreter to recruit participants using convenience and snowball sampling, starting with an acquaintance of the primary investigator. After their interviews, the primary investigator asked participants to refer their friends or relatives who may be eligible. Family members of participants were enthusiastic about the research and helped recruit participants as well. Because many activities of daily living take place outside, neighbors and community members often asked the primary investigator and interpreter about the interviews and shared suggestions for additional potential participants.

3.1.6 Informed Consent

Prior to each interview, the primary investigator read and an interpreter interpreted an informed consent document to potential participants and gave them the opportunity to ask questions. The consent form asked for consent to participate, to record the interview, and to take and share photographs. Each portion was consented to separately, and participants could agree to the interview without recording or photographs. Once they verbally agreed, participants signed the

document either with their signature or fingerprint if they could not write their names. They received a copy of the informed consent form and of the demographic survey if they were interested. The primary investigator read the demographic survey out loud to each participant and completed it on paper as the internet and electricity were unreliable. Completed consent forms, surveys, and field notes were stored in a locked case. The primary investigator assigned participants a study ID, and any reference to names in the interviews was changed to a pseudonym. After the interviews, participants received Rs. 1,000, approximately $7.75 USD.

3.1.7 Recording and Reflexivity

The interviews with birthing parents were audio-recorded. After each interview, the principal investigator wrote a short memo to reflect on the information learned and any changes needed to the survey and interview guide. After the first two interviews, questions that were duplicated between the household survey and interview guide were removed from the interview guide. Another question was changed from, “Tell me three things that you think of when you think about birth,” to “When you were getting ready to give birth, what were your hopes or feelings about birth?” because participants felt the former question was difficult to answer. Key informant interviews were not recorded.

3.1.8 Funding

The University of Pittsburgh Nationality Rooms and Intercultural Exchange Program’s Stanley Prostrednik Memorial Scholarship generously provided funding for this research.

3.1.9 Ethics Review

The University of Pittsburgh's Institutional Review Board (Study 23020183) and the Nepal Health Research Council (Study 297/2023) approved this research protocol as an exempt study.

3.2 Data Analysis

3.2.1 Demographic Survey Analysis

The primary investigator entered household survey data into Excel. After reviewing the data, she created additional variables to capture accurate responses to open-ended questions, such as sources of income. The data were then imported into SPSS v. 28.0.0. Frequencies, means, medians, and ranges were calculated where appropriate for each variable.

3.2.2 Qualitative Analysis

The primary investigator simultaneously translated and transcribed the interview audio recordings into English in Microsoft Word, redacting names and references to other people by name from the transcripts. The Tamang interpreter reviewed each transcript for accuracy. The transcripts were imported into NVivo Mac v. 14.23.2 qualitative software for management and analysis.

The primary investigator conducted both content and thematic qualitative analyses. Initial data analysis started with memos during data collection. The primary investigator conducted

content analysis using a priori codes developed from the interview guide (Krippendorff, 2018). A list of a priori codes can be found in Appendix D.

Thematic analysis, as outlined by Braun and Clarke (2021) followed an inductive, six-step process:

- Becoming familiar with the data through transcription, reading and re-reading the data, noting down initial ideas
- Creating initial codes and coding the data in a systematic fashion
- Finding themes through collating codes
- Reviewing themes with selected codes
- Defining and naming themes
- Choosing quotations for each theme to produce a report

The primary investigator synthesized these analyses to find semantic and latent themes, which are presented below.

4.0 Results

Ten women who had given birth within the last two years completed interviews. While all of the interviews took place in Golche, one woman lived in a nearby village. She was from Golche and was visiting her family there. Five interviews took place in the courtyard of the primary investigator's lodging, and the other five were at participants' homes, either in their kitchens or courtyards. The interviews lasted between 35 minutes and 75 minutes (mean 52 minutes).

The key informant interview took place in Gumba, Sindhupalchowk. Dr. Ram Lal Tamang gave a tour of the health post there and provided his perspective on the health needs of the community. Dr. Tinchen Lama hosted the primary investigator for three nights in Gumba and shared her experience as a community midwife.

4.1 Participant Demographics

4.1.1 Ethnicity, Religion, and Language

All ten families were ethnically Tamang. Nine of the ten were Buddhist, and one was Christian. All ten families spoke Tamang at home, and two spoke both Tamang and Nepali.

Table 2: Ethnicity, Religion, and Language

	Number	Percent
Ethnicity		
Tamang	10	100
Religion		
Buddhist	9	90
Christian	1	10
Language		
Tamang only	8	80
Bilingual Tamang/Nepali	2	20

4.1.2 Income, Water, Fuel, and Toilet Facilities

All interviewees who lived in Golche during the interview used a shared water tap called a *dhara*. One woman lived in a nearby community and had water piped into her dwelling. Everyone used wood for cooking, and half of the families used a combination of gas and wood. Everyone had a modern toilet, two of which were shared among two households. Three families had multiple sources of income. One of them worked as a farmer and had income from teaching. Another was a farmer who had a relative abroad who sent remittances, and they raised and sold livestock. The last were farmers who received remittances from family members who worked abroad. Of the remaining eight families, five were farmers, one was a laborer, and one owned a tea shop. Even those who did not identify farming as their primary source of income relied on their farming for food.

Table 3: Income, Water, Fuel, and Toilet Facilities

	Number	Percent
Drinking Water Source		
Piped in Dwelling	1	10
Shared Tap	9	90

Cooking Fuel		
Wood only	5	50
Both gas and wood	5	50
Toilet Facilities		
Modern Toilet	10	100
Toilet Ownership		
Shared	2	20
Private	8	80
If shared, number of households		
2	2	
Income Source (multiple response)		
Farming*	8	80
Remittance*	2	20
Livestock*	1	10
Laborer	1	10
Tea Shop	1	10
Teaching*	1	10

*These were represented in multiple responses.

4.1.3 Interviewee and Spouse's Ages and Education

The women ranged from ages 21 to 42, with a mean of 31.8. Their spouses' ages ranged from 24 to 47, with a mean of 36.2. Seven of the ten women had no formal education. Two women completed some primary school, and another completed her plus two, the equivalent of 11^{th} and 12^{th} grades. Participants' spouses all had some formal education. Four spouses had completed some primary school, five attended some secondary school, and one had a bachelor's degree.

Table 4: Interviewee and Spouse's Ages and Education

Interviewee Age		
Range	21 to 42	
Mean	31.8	
Median	31	
Spouse's Age		
Range	24 to 47	
Mean	36.2	
Median	35	
	Number	Percent
Interviewee's Education		
None	7	70
Primary (K to 5)	2	20
Secondary (6 to 10)	0	0
Plus Two (11 to 12)	1	10
Bachelor's	0	0
Spouse's Education		
None	0	0
Primary (K to 5)	4	40
Secondary (6 to 10)	5	50
Plus Two (11 to 12)	0	0
Bachelor's	1	10

4.1.4 Household Members and Ages

Households ranged in size from three to nine members, with a mean of 4.9. All families had their own children at home, and three families included other members. One had a sister-in-law (spouse's sister), one lived with her parents-in-law, and one had a daughter-in-law as part of her household. Children who lived outside the home for school, work, or with another parent were excluded from household numbers but are represented in the number of births below.

4.1.5 Health Facility Access

Nine of the interviewees lived in Golche and identified the nearest health post as an approximately 90-minute walk from their home. One participant lived in a different village, and her home was a five-minute walk from the nearest health post.

4.1.6 Characteristics of All Births

Participants had given birth between one and five times, with a total of 32 births across participants and a mean of 3.2 births per woman. Living children ranged in age from six months to 22 years, with a mean of 7.5 years and a median of 7 years. When combining characteristics of all reported births, the number of antenatal care visits completed per pregnancy ranged from no visits to five visits, with a mean of 2.56 visits for an individual pregnancy. Of the 32 births, 71.9 percent took place at the woman's home, 9.4 percent took place at a health post, and 18.8 percent were at a hospital. For the births that occurred at home (n=23), sisters or sisters-in-law were with the birthing person for 21 of the 23 births, mothers-in-law attended 19, and neighbors attended one. For eight of the 32 births, women had at least one clinical postpartum care visit with a healthcare provider (25%), while women received no prenatal care for the remaining 24 births.

Table 5: Characteristics of All Births Combined

Age of Children*		
Range	6 months to 22 years	
Mean	7.5	
Median	7	
Number of Antenatal Care Visits		
Range	0 to 5 visits	
Mean	2.56 visits	
	Number	Percent
Location of Births (n=32)		
Home	23	71.9
Health Post	3	9.4
Hospital	6	18.8
Home Birth Attendants (n=23)		
Sisters/Sisters-in-Law	21	65.6
Mother-in-Law	19	59.4
Neighbors	1	3.1
Clinical Postpartum Care (n=32)		
Yes	8	25
No	24	75

*Two children were live births but are now deceased and excluded from the mean and range calculations

4.1.7 Characteristics of Index Births

For their most recent births, three people had no prenatal care, three people had some prenatal care but fewer than the recommended four visits, and four people had at least four visits. Seven of the ten delivered at home, and the other three gave birth in a health post. Two people had a postpartum appointment with a healthcare provider.

4.2 Qualitative Results

Qualitative results include themes from the participant interviews with further commentary and context from the key informant interviews. Major themes include cultural norms surrounding the perinatal period, key people, decision makers and factors in decisions, and experiences with medical services and staff.

4.2.1 Cultural Norms Surrounding the Perinatal Period

4.2.1.1 Importance of Food and Drink During Pregnancy and Postpartum

Participants said they ate locally grown food during their pregnancy, including rice, millet dough, lentils, meat, eggs, vegetables, and ghee. Some mentioned that they tried to eat more fruit, but it was difficult to find nearby. Alcohol consumption varied from family to family. One participant said: *I didn't drink alcohol, but some people in the community drink. I ate everything, just the normal food that we grow (Participant 6).*

All participants said that they ate chicken, eggs, and ghee during the postpartum period. Some said that they drank *chang*, a locally brewed millet-based alcohol, because they believed it helped them produce more milk. One participant said: *After the baby is born, during this time we eat chicken and ghee. Those are my favorites and that is what's available here (Participant 1).* Another noted that they only eat warm food and drink warm beverages, even warming up water so that it is not room temperature. *We eat a lot and drink* chang *to make a lot of milk. The food always is warm, even the* chang *is warm (Participant 2).*

Tinchen Lama also mentioned the importance of eggs and ghee during the postpartum period. She said that the incentives provided to parents who give birth at the health post include eggs and ghee and are well received by the community.

4.2.1.2 Advice during Pregnancy is Incongruous with Lifestyle

Almost all participants said that they had received advice not to carry heavy loads or work too hard. One participant said: *The local doctor gives some advice: Don't work too hard. Don't carry heavy loads (Participant 1).* Many mentioned that it was difficult to follow the advice that they received because of the nature of their farming work. For example, two participants described this: *Well, sometimes we carry light things, but sometimes we need to carry heavy things (Participant 3). I heard that we shouldn't work hard, but what could I do? Our work is very hard (Participant 4).* Another mentioned lack of time as a challenge to following recommendations from the healthcare providers. *They told me to take an iron pill. But I didn't always have enough time to go [to the health post] and get it (Participant 9).*

When asked about giving advice, Dr. Ram Lal Tamang described his role as giving information that it was up to the families to change their behavior or not.

4.2.1.3 Homebirth as the Norm

Many people mentioned that people in their family and community give birth at home. This was the expected default, and participants needed a reason to go elsewhere. When asked about how she decided to give birth at home, one participant said, *I just decided myself. Everyone gives birth at home, so I thought I could do it too (Participant 9).*

There was sometimes tension between the older generation and the birthing parents. In-laws, in some instances, were described as not being supportive of the birthing parent's decision

to give birth at the health post. *My in-laws were not happy that I went to the hospital. They said, 'Everyone can give birth at home, why are you going there? It's so expensive and takes too much time' (Participant 7).*

4.2.2 Key People

4.2.2.1 Husbands/Spouses as the Primary or Initial Source of Information

When asked who they sought advice from when they had questions about their health, many participants said they would ask their husbands first. If their husband didn't know how to help, he would go to get help or advise where to get help. When asked whom a woman would ask advice from during pregnancy, a participant said: *Well, probably her husband (Participant 1)*. Another said: *I talk with my husband or go down to the clinic (Participant 10)*. Another participant discussed feeling "weak" during her pregnancy and that she mentioned it to her husband but didn't seek more care (Participant 3).

4.2.2.2 Shamans or Monks as the Second Source to be Sought, and their Relationship to Medical Services

When the mothers needed medical help, their families often called traditional or religious healers, including shamans and Buddhist monks, prior to going to a health post. When asked about when they would call a shaman or monk and when they would go to a health post, participants either mentioned the cause of the sickness or the order in which they would get help. Three people mentioned the cause of their illness as local evils. For example: *Well, if it's a local evil, then we ask the monk or shaman; otherwise, we go to the hospital (Participant 1).* One participant mentioned a physical symptom of a fever as an indicator for going to the health post instead of

calling the shaman: *If we get some weakness or fear, then we call the shaman. If it's a fever, we go to the hospital (Participant 9).*

Participants consistently said that they first asked a shaman or a monk for help: *First, we call the shaman as soon as we're sick (Participant 1)*. Participants said they would then go to the health post for more care—*first the shaman and then the health post after (Participant 8).*

When asked about the relationship between shamans and referrals to the clinic, the same participant continued.

> *Interviewer: Does the shaman tell you to go [to the health post]?*
> *Participant 8: Yes, the shaman says if they can cure, then stay home, but they also encourage us to go to the clinic.*

Other participants echoed this when asked who makes the choice about whether or when to go to the hospital. *Yes, the shaman says to go to the hospital (Participant 1).*

Tinchen Lama also discussed shamans as a team member. She said that there was a community training at the health post in Gumba that included shamans. She described her relationship with shamans as positive and that they often refer people to get help at the health post.

4.2.2.3 Birth Attendants and their Roles

When people gave birth in a hospital or clinic, their husbands typically accompanied them. One person said that her husband had to authorize her surgery. If participants were transferred to a clinic while in labor, their mothers-in-law also usually accompanied them. Everyone who gave birth at home was accompanied by female relatives or neighbors. Those birth attendants give her instructions, advice, and comfort measures. When asked who decided what needed to be done during birth, one participant said: *Like the in-laws usually do, the mother-in-law, she tells me do this or do that (Participant 1).* Others described comfort measures: *my neighbor held my hand (Participant 6),* and *sometimes people gave me warm water and a warm bath (Participant 3).*

One person said that many birthing people will just listen to what they are told but can ask for massage or pressure to help with the pain. Another laughed as she said that she could not talk, but if she could, she could have asked her family for certain comfort measures.

4.2.3 Decision Makers and Factors in Decisions

4.2.3.1 Decision Makers

Participants identified themselves as the primary decision-makers in where to give birth but many people discussed input from others. In response to a question about where she gave birth, one participant said: *I didn't think I could do it at home, that's why I went down [to the health post] (Participant 10)*. When asked what her family said in response to her decision, she said: *They thought it was a good idea (Participant 10)*.

4.2.3.2 Transportation Cost

Participants brought up the cost of transportation frequently when describing their decision to seek care. If they needed to take an ambulance during labor, that cost was covered through the government's Amma Surakchhya program. If ambulance transportation was needed during other times, such as a concerning health development during pregnancy or during the post-partum period, the ambulance cost was very high and could range from NRP 6,000 to 10,000 ($45 to $75). Ambulance transportation was sometimes unavailable, such as during election season when the jeeps that served as ambulances were used for political campaigns.

The cost of returning home was not covered through Amma Surakchhya's program, so participants either needed to walk home or pay for the transportation themselves.

4.2.3.3 Time, Distance, Transportation, and Road Safety

Most people who gave birth at home noted that the clinics were far away, the roads were unsafe, and there was a lack of transportation. When asked how she decided to give birth at home, one participant responded, *It's so far to the health center, and during monsoon time, there is no transportation, and the roads aren't safe (Participant 1).*

Even if they felt like they could go to the health post safely, returning home after labor and with a newborn was seen as challenging. *I thought it would be so hard to come up after the baby is born. I thought that I could manage to do it [give birth] at home (Participant 3).*

The distance was a concern not only because it was difficult but also because some participants were worried that they might give birth before arriving at the health center. *Well, it was too far. If it's a long [labor], then I could go, but I was worried that I would give birth on the way (Participant 6).*

Tinchen Lama echoed that many people in Gumba gave birth at the health post if they were close by, and those who chose to give birth at home were from communities far away or without good road access.

4.2.3.4 Medical Conditions

One participant had a previous emergency cesarean section delivery, so her provider suggested that she have another cesarean. *Because of my experience with the third one, the doctor recommended another C-section (Participant 4).* When probed for her thoughts or feelings about this advice, she responded, *It's compulsory so I didn't have a choice.*

One participant whose first baby had passed away shortly after birth went to have an ultrasound to check on the health of the baby and the position. *I did a video x-ray [ultrasound], and the baby was head down, so I knew it was ok to give birth (Participant 1).* When asked what

she would have done if the baby was breech or transverse, she said that she would have gone to the health post.

4.2.3.5 Safety

Safety was frequently mentioned when people discussed giving birth at home. Some people said that they felt safe at home because it was comfortable and their family spoke the same language. One participant said that she felt safe at home because her sister-in-law was with her and had a lot of experience and knowledge. She said: *Well, I had help from my sisters-in-law, so I felt safe. My one sister-in-law knows everything (Participant 9).*

4.2.4 Experiences with Medical Services and Staff

4.2.4.1 Relationship with Healthcare Providers

The participant who lived in a village with a nearby health post had a relationship with the midwife. She was the only one who named the care provider, and because of that relationship, she seemed to follow the midwife's advice.

Dr. Ram Lal Tamang also discussed his relationship with patients. He is Tamang but is from a different community and has had to work hard to build rapport with the local community. He discussed the challenge of being an outsider not just in building rapport but also that after a few years, he will move home, and because of that it's difficult for the community to trust the staff at the health post.

4.2.4.2 Transferring to a Healthcare Facility in Labor

Throughout the interviews, participants cited long labors as the reason to go to the hospital. Some people quantified long labor, saying that if labor took more than a day, then they should go to the hospital. Two participants decided to go to the health post because of long labor. *I had a difficult, long labor with the recent baby. I decided to start going to the hospital but gave birth on the road halfway. My family said, 'go go!!' (Participant 9).*

Another participant had a long labor and went to the health post. Her baby was transverse, so she had to be transferred for surgical delivery to Kathmandu, a five-hour drive.

> *The baby wasn't head down; they felt like the baby wasn't going to be able to come here, so we rushed to save my life. We rushed to Kathmandu, but it was too late. The baby was in the NICU for two days, but she didn't survive (Participant 4).*

Dr. Ram Lal Tamang provided further context and described the process of escalating to a higher level of care. He described the challenge of encouraging people to seek care at a larger hospital while knowing that they may not be able to afford the time or people to go there. He also described the government's helicopter evacuation process for emergency obstetric cases, though he had not had to call a helicopter in his time at the health post.

4.2.4.3 Treatment at a Health Facility

Many participants had very little experience at health facilities and relied on others' advice to know what to expect. When asked about her experience with how healthcare providers treat patients, one participant said: *I actually don't have experience with that. I've never been to the hospital (Participant 3)*. The majority of participants said that they had heard good things. One said: *I've heard that it's safe and clean and good (Participant 6)*. Two participants, however, had experienced providers raising their voices at them. When asked how the healthcare providers treat

the patients, one said: *It was fine. They sometimes yelled at me, but it was probably my own fault (Participant 7).*

5.0 Discussion

The following discussion includes how the results are in conversation with other literature, implications for policies and programs, and limitations of the results. The key informant interviews provided deeper context, but these informants were working in a village that had a health post in it whereas the participant interviews were with birthing people living in a village where the nearest health post was more than an hour away. Additionally, the healthcare providers described the only barrier to giving birth in a health post as the distance, and the participant interviews suggest that distance is a key component but there may be other factors at play.

5.1 Results within the Current Nepali Context

This pilot study provides insight into the decision-making process of birthing people in a rural Nepali community when they consider whether to give birth at home or to travel to a healthcare facility. Some findings converge with current research literature, while others diverge slightly. For example, the household surveys in this study found that 70 percent of all births were at home and 30 percent in a healthcare facility, which is a much lower healthcare facility delivery rate than the national level of 77 percent (Ministry of Health and Population, 2023). Nationally, 70 percent of birthing parents have postpartum clinical visits, but these results showed that only 25 percent of participants had a clinical visit (Ministry of Health and Population, 2023). These results are consistent with findings from Shrestha et al. (2014) that people in rural areas and

Janajati are less likely to have clinical care and less likely to deliver in healthcare facilities than those in urban areas and from other ethnicities.

5.2 Three Delays

The findings from this study are consistent with the three delays model for maternity care access described in Thaddeus and Maine (1994) work: 1) the delay in seeking care; 2) the delay in arriving at a health facility, and 3) the delay in the provision of adequate care. While the delay in seeking care was most prominent in this study, some participants also described the delay in arriving at a health facility, resulting in giving birth alongside the road. Though it was not mentioned explicitly, one participant had a delay in receiving adequate care after reaching a healthcare facility. She sought care but needed a higher level of care than the health post could provide. As a result of the first two delays, she arrived at the hospital in Kathmandu too late for the adequate provision of care, and her baby passed away as a result. There are no other descriptions of delays in receiving care at the health facility, but this may be because so few people have gone to healthcare sites.

5.3 Important Collaborators

5.3.1 Spouses

Spouses were frequently mentioned in this study as the first person that the birthing person confers in decision-making or when they need advice or help. Participants cited that their spouses go get help when they do not know how to help. This finding is consistent with other research (Lewis et al., 2015) and highlights the importance of involving spouses in maternal health and safe childbirth programs. Outreach should include husbands and spouses to give them the tools to support their partners and know what type of help they should seek.

5.3.2 Shamans

Shamans, monks, and priests were consistently noted as an integral part of someone's health care. They were consulted both for preventative care and when problems arose. Similar to the findings of Aborigo et al. (2015) in Ghana, these interviews demonstrate that traditional healers play an essential role in improving care utilization. Unlike the study in Ghana, however, participants in this study noted that the Shamans would encourage them to go to the health post or hospital after they had completed their ritual (Aborigo et al., 2015). This suggests that Shamans have a strong relationship with the healthcare system and could be integrated into safe motherhood programs. Future programming could include training traditional healers to triage emergencies to allow birthing families to access life-saving care swiftly.

5.4 Policy and Programmatic Implications

5.4.1 SBA/Midwife Training for Local Community Members

The study participant who lived in Gumba named the health post staff when discussing who she sought help from and how she decided to give birth at the health post. In contrast, those who lived in Golche did not name any health post staff and tended to give birth at home more frequently. The senior midwife at the health post in Gumba, is also Tamang and can speak with her patients in their native language. Also, we had an in-depth conversation with Dr. Ram Lal Tamang, a physician at the health post in Gumba, about the challenges of being an outsider at the health post. While he is also Tamang and shares a common ethnic identity, religion, and language with the area's residents, he is from a nearby city. He is posted at the health post for a limited term only. He discussed that one of the biggest challenges to providing quality care is staffing, both the number of staff and the fact that their time is often limited, which challenges the relationships that can be built. Future initiatives could include training programs for local community members to become nurses, skilled birth attendants, and midwives, allowing them to provide high-quality, culturally competent care for the long term.

5.4.2 Clinical Postpartum Care

Very few participants had a clinical postpartum visit. For all births combined, 25 percent of them involved a clinical postpartum visit. Over 60 percent of maternal deaths occur in the postpartum period, so access to clinical postpartum care is a key measure in reducing mortality (Li et al., 1996). Participants frequently mentioned having their young babies vaccinated, and the high

level of vaccinations was corroborated in discussions with the providers at the health post in Gumba. Families are often making the journey to health posts for vaccinations for their babies, presenting an opportunity to combine maternal care with newborn care.

5.4.3 Transportation Reimbursement is Insufficient

Many participants mentioned the cost of transportation as a barrier to seeking care. They knew about the incentives provided, called a "transportation fee," but this reimbursement does not cover the cost of returning home by vehicle after delivery. The concern about transportation costs voiced by participant in this study is consistent with findings from Morrison et al. (2014) in Makwanpur District, south of Kathmandu, in which participants also frequently mentioned the difficulty of returning home from the health post with a newborn. The combination of distance and cost of the return journey was a major factor in giving birth at home. In order to remove that barrier, maternity care incentives could cover not only the cost of traveling to the health post but also the safe return home after giving birth.

5.4.4 Distance and Transportation

Distance, road conditions, and transportation were the most prominent reasons people mentioned for staying home once labor began. There is a small health post in Golche, but participants said that it is not in use. Improving staffing at health facilities is a crucial step to improving access to care. When that is not possible, ensuring that participants have transportation to and from health posts and hospitals should be a priority.

5.5 Limitations

Several limitations are relevant to this study. Because this was an exploratory study, the sample was limited to ten birthing parents, the maximum possible during the limited time frame for on-site data collection. The study would have benefited from additional participants as saturation was not reached for select themes. Also, the convenience sample is not representative, so the results are not generalizable to the larger community or population.

An additional challenge was language. In previous visits to this community, the primary investigator was able to function easily in Nepali. Most people do not use Nepali in their daily life but have a working knowledge of it. While the primary investigator anticipated a need for support with written translation, she expected to be able to conduct the interviews without an interpreter. Either because of the subject of the interviews or a misestimation, the pilot interviews revealed that they needed to be conducted in Tamang. Adding an interpreter likely resulted in limiting some of the richness of response and added additional time in the interviews. Further, the interpreter available was a male, which was not ideal for the subject matter being explored. The primary investigator repeated frequently that the interviewees could pass on any question they were uncomfortable answering or that we could try to do some questions in Nepali without an interpreter. Multiple participants dismissed this, saying that they were comfortable, and when probed about an answer, one participant said that she did not want to respond further.

6.0 Conclusion

As Nepal continues to work to decrease maternal mortality and morbidity, the nation must focus its efforts on rural dwellers and people from marginalized ethnicities and castes. This exploratory study highlighted themes that warrant further investigation, including concerns about distance and the cost and availability of transportation, integrating traditional healers into the healthcare system, and people's perceptions of safety and support.

Plans for dissemination include reporting back to the community through plain language posters in Nepali, meeting with local government officials including the chairperson of Gumba, and reaching out to Nepali academics who have been studying maternal health for many years.

Future studies should include a larger sample and systematic sampling, including purposive sampling with people who did seek care at health facilities, to determine trends and causality. Additionally, stratifying by age of mother, age of oldest child, or education level may reveal trends in decision-making practices. It may be intriguing to compare Golche to a community such as Gumba that has a health post in the village and to do further qualitative work with grandmothers who gave birth prior to the Safe Motherhood program.

Some interviews raised questions that suggest further directions for research exploration, including mistreatment in the health care setting, what labor support means in both home and facility births, as well as the cultural implications of moving birth to a medical setting.

Overall, this small pilot study contributed insight into the decision-making process of birthing people in one rural Nepali village and highlighted important considerations for future national policies and programs designed to lower maternal mortality and morbidity.

Appendix A Summary of Maternal Health Policies in Nepal 1990-2020

1960s	Integrated approach to community health and family planning
1975	First Long Term Health Plan Scaled up the 1968 Family Planning and Maternal Child Health Project to all 75 districts
1997	Second Long Term Plan Introduced the National Safe Motherhood Program to Nepal
1998	Female Community Health Volunteers (FCHV) Program Trained FCHVs to provide family planning support throughout the country, roles later expanded to child health information
1990	Reinstitution of Democracy
1996	Civil War Began
1997	Nepal Safer Motherhood Project Initiated to support the Family Health Division in nine districts, emphasized strengthening of infrastructure for reproductive health service delivery
1998	Reproductive Health Strategy Placed Safer Motherhood at the core of the Integrated Reproductive Health Care Package
2002	National Safe Abortion Policy Abortion legalized up to 18 weeks except in the case of sex selection
2004	Abortion access expanded to public facilities
2005	Support to Safer Motherhood Program Worked directly through the government to build capacity and develop systems
2005	National Safe Motherhood and Newborn Health Long Term Plan Cash for transport to public health facilities
2006	End of Civil War, Interim Constitution
2006	Revision of the National Blood Policy
2006	National Policy for Skilled Birth Attendants Identified the importance of skilled birth attendance at every birth and provides training to meet required core skills
2009	Amma Surakchhya Program Expanded 2006 National Safe Motherhood program to make deliveries free of cost for public facilities and some private facilities
2015	New Constitution Established that health is a fundamental right, guaranteeing every woman the right to safe motherhood and reproductive health
2016	Nepal Every Newborn Action Plan Care for Newborns made free
2017	Health Insurance Act BS 2074 Movement to universal health coverage including maternity care
2018	Safe Motherhood and Reproductive Health Act Guarantees the reproductive rights of all women, and includes directives to local governments to allocate funds for reproductive health
2018	Public Health Act Focuses on integrated service provision for reproductive, maternal, newborn, children and adolescent's health with an emphasis on quality of care and strengthening referrals

Compiled from (Barker et al., 2007; Bhandari et al., 2011; Bhandari, 2014; Government of Nepal, 2019; Shrestha et al., 2012)

Appendix B Household Survey

Pitt IRB Study: 23020183
Co-PI: Claire Lama
Co-PI: Tinchen Lama
Faculty Mentor: Dr. Cynthia Salter

Factors in Seeking Skilled Care during the Perinatal Period: An Exploratory Study from Sindhupalchowk, Nepal

Household Survey

Interviewee's Name
☐ Birthing Parent
☐ Other, role in family

Ethnicity: _____ Religion: _____

Language(s) spoken at home: _____

What is the source of drinking water?
☐ Piped in house ☐ Well ☐ River or stream ☐ Other:_____

What is the main fuel used for cooking?
☐ Gas ☐ Wood ☐ Other: _____

What is the family's toilet facilities?
☐ Modern toilet ☐ Pit toilet ☐ Outside ☐ Other: _____

Is the toilet shared or private?
☐ Shared among _____ households ☐ Private

What is the main source of income? _____

Wife's Age: _____ Wife's Education: _____

Husband's Age: _____ Husband's Education: _____

Number in Household: _____			
	Role	M/F	Age
1.			
2.			
3.			
4.			
5.			
6.			

Distance to Nearest Health Facility: _____

Type of Health Facility: _____

	Pregnancies				
	Child's Age	ANC (Num)	Delivery Location	If home, attendance? If facility, where?	PP Care (Y/N)
1.					
2.					
3.					
4.					
5.					
6.					

Appendix C Interview Guide

Pitt IRB Study: 23020183
PI: Claire Lama
CO-PI: Tinchen Lama
Faculty Mentor: Dr. Cynthia Salter

Factors in Seeking Skilled Care during the Perinatal Period: An Exploratory Study from Sindhupalchowk, Nepal

Interview Guide

In this interview, we'll talk about your experience with pregnancy and birth. You can take a break or stop at any time. I'll record our conversation so that I can remember what we talked about, but I will not share your name or other private information with anyone. Do you have any questions before we begin?

I'll start by asking you some questions about your family's practices.

1. What foods do people eat or avoid during pregnancy? Are there other behaviors during pregnancy that women undertake or avoid to remain healthy?

2. What about after the baby is born? What foods are eaten or avoided? Are there rules that you follow such as when you can leave the house, where you should sleep, etc.?

Now, I want to ask you about your village's access to health care.

3. Is there a health post? If so, how far? If not, how far do you need to walk to get to one?

4. If someone has a health emergency, who do they go to first? How far is it? How do they usually get there?

5. When people feel unwell, do they seek a priest, a shaman or a monk? What for? Can you tell me more?

6. Who do women go to with questions about their health when they are pregnant? What about after they give birth, for the health of the baby?

7. If people are pregnant and need help, where do they usually go? How far is it?

8. Where are babies usually born?

9. Who attends women at birth? Who is with them? Who decides what needs to be done?

10. How do the healthcare providers at the health post treat pregnant women? How about at the hospital?

11. If you have gone to the health post or hospital, what did you like about your treatment? What do you wish had been different?

Next, I'll ask you some questions about your pregnancies.

12. How many times have you been pregnant?

13. How many times have you given birth? How many children do you have now? *If different, ask about timing of demise.*

14. What do women do to avoid getting pregnant again or to prevent pregnancy? Can you tell me about why you did or didn't use them?

Finally, I'm going to ask you about your most recent pregnancy and birth.

15. Tell me about your health during your most recent pregnancy? Did you feel sick or did anything happen that worried or upset you? If so, who did you talk to about this? Did you seek care from anyone? Did you go to a clinic?

16. How did you decide where to give birth? Who did you talk to about it or who gave you advice?

17. How about the birth? How was your health at the birth? Why? How did you get there?

18. Did anything happen at the birth that worried you or your family?

19. How about the baby's health at birth?

20. What about after the birth? How was your health? Did you have any problems after the birth? Who helped to care for you after the birth?

Thank you so much for speaking with me.

21. Is there anything you would like to add or any other thoughts that you have?

Appendix D A Priori Codes

Appendix Table 1: A Priori Codes

Advice
Baby's Health at Birth
Behavior during Postpartum
Behavior during Pregnancy
Birth attendance
Birth Location
Care Seeking General
Decision where to give birth
Decisions during labor
Facility care likes and dislikes
Family Planning
Foods during Postpartum
Health Emergency
Incentives
Nearby Health Facility
Other thoughts
Postpartum Care at Facility
Postpartum Care at Home
Postpartum Health
Previous pregnancies and births
Questions re Health
Recent Birth Health
Recent Birth Worry
Recent Pregnancy Care Seeking
Recent Pregnancy Health
Seeking help
Traditional and religious healers
Transportation
Treatment at Facility

Bibliography

Aborigo, R. A., Allotey, P., & Reidpath, D. D. (2015). The traditional healer in obstetric care: A persistent wasted opportunity in maternal health. *Soc Sci Med*, *133*, 59-66. https://doi.org/10.1016/j.socscimed.2015.03.046

Asian Development Bank. (2010). *Overview of Gender Equality and Social Inclusion in Nepal*.

Barker, C. E., Bird, C. E., Pradhan, A., & Shakya, G. (2007). Support to the Safe Motherhood Programme in Nepal: an integrated approach. *Reprod Health Matters*, *15*(30), 81-90. https://doi.org/10.1016/s0968-8080(07)30331-5

Bennett, L., Dahal, D. R., & Govindasamy, P. (2008). *Caste, Ethnic and Regional Identity in Nepal: Further Analysis of the 2006 Nepal Demographic and Health Survey* (DHS Further Analysis Reports, Issue.

Bhandari, A., Gordon, M., & Shakya, G. (2011). Reducing maternal mortality in Nepal. *Bjog*, *118 Suppl 2*, 26-30. https://doi.org/10.1111/j.1471-0528.2011.03109.x

Bhandari, S. (2014). Regional and District Level Estimates of Maternal Mortality for Nepal: Are they Different from the National Estimates in 2011? *J Gen Pract Emerg Med Nepal*, *3*(4), 34-38. https://doi.org/10.59284/jgpeman129

Bista, D. B. (1967). *People of Nepal*. Department of Publicity, Ministry of Information and Broadcasting.

BK, S. (2006). Cultural practices during postnatal period in Tamang community in Bhaktapur district of Nepal. *Journal of Nepal Health Research Council*.

Braun, V., & Clarke, V. (2021). *Thematic Analysis: A Practical Guide*. Sage Publications Ltd.

Dahal, D. R., & Fricke, T. E. (1998). Tamang transitions: transformations in the culture of childbearing and fertility among Nepal's Tamang.

Demographic and Health Surveys Program. (n.d.). *Maternal Mortality*. https://dhsprogram.com/Topics/Maternal-Mortality.cfm

DHS Program. (2022). *Nepal Health Facility Survey 2021: Key Findings*. https://dhsprogram.com/publications/publication-SR273-Summary-Reports-Key-Findings.cfm

Fricke, T. E. (1984). Talking About the Household: A Tamang Case from North Central Nepal. *HIMALAYA, the Journal of the Association for Nepal and Himalayan Studies*, *4*(2), 5.

Fricke, T. E. (1985). Fertility and its proximate determinants in a Tamang village of North Central Nepal. *Contributions to Nepalese studies*, *12*(3), 25-49.

Fricke, T. E., Thornton, A., & Dahal, D. R. (1990). Family organization and the wage labor transition in a Tamang community of Nepal. *Human Ecology*, *18*, 283-313.

Government of Nepal. (2019). *Nepal Safe Motherhood and Newborn Health Road Map 2030*.

Haileamlak, A. (2018). Maternal and Newborn Mortality- Still the Greatest Disparity between Low-Income and High-Income Countries. *Ethiop J Health Sci*, *28*(4), 368. https://doi.org/10.4314/ejhs.v28i4.1

Holmberg, D. H. (1980). *Lama, shaman, and lambu in Tamang religious practice*. Cornell University.

Holmberg, D. H. (1996). *Order In Paradox Myth, Ritual And Exchange Among Nepals Tamang*. Motilal Banarsidass Publishe.

Hussein, J., Bell, J., Dar Iang, M., Mesko, N., Amery, J., & Graham, W. (2011). An appraisal of the maternal mortality decline in Nepal. *PLoS One*, *6*(5), e19898. https://doi.org/10.1371/journal.pone.0019898

Karkee, R. (2012). How did Nepal reduce the maternal mortality? A result from analysing the determinants of maternal mortality. *JNMA J Nepal Med Assoc*, *52*(186), 88-94.

Karkee, R., Tumbahangphe, K. M., Maharjan, N., Budhathoki, B., & Manandhar, D. (2021). Who are dying and why? A case series study of maternal deaths in Nepal. *BMJ Open*, *11*(5), e042840. https://doi.org/10.1136/bmjopen-2020-042840

Karki, K., Singh, D. R., Sushmita, K., & Lama, S. (2019). Maternal health services utilization among rural Tamang women: a cross sectional study in Nuwakot district of Nepal.

Krippendorff, K. (2018). *Content Analysis: An Introduction to Its Methodology*. Sage Publications, Inc.

Lewis, S., Lee, A., & Simkhada, P. (2015). The role of husbands in maternal health and safe childbirth in rural Nepal: a qualitative study. *BMC Pregnancy and Childbirth*, *15*(1), 162. https://doi.org/10.1186/s12884-015-0599-8

Li, X. F., Fortney, J. A., Kotelchuck, M., & Glover, L. H. (1996). The postpartum period: the key to maternal mortality. *Int J Gynaecol Obstet*, *54*(1), 1-10. https://doi.org/10.1016/0020-7292(96)02667-7

Masvie, H. (2006). The role of Tamang mothers-in-law in promoting breast feeding in Makwanpur District, Nepal. *Midwifery*, *22*(1), 23-31. https://www.sciencedirect.com/science/article/pii/S0266613805000306

Ministry of Health and Population. (2022). *National Population and Housing Census, 2021: Nepal Maternal Mortality Study 2021*.

Ministry of Health and Population. (2023). *Nepal Demographic and Health Survey 2022*.

Morrison, J., Thapa, R., Basnet, M., Budhathoki, B., Tumbahangphe, K., Manandhar, D., Costello, A., & Osrin, D. (2014). Exploring the first delay: a qualitative study of home deliveries in Makwanpur district Nepal. *BMC Pregnancy and Childbirth*, *14*(1), 89. https://doi.org/10.1186/1471-2393-14-89

National Statistics Office. (2023). *National Population and Housing Census 2021*. https://censusnepal.cbs.gov.np/results

Pan American Health Organization. (2023). *Zero Maternal Deaths: Prevent the Preventable*. https://www.paho.org/en/campaigns/zero-maternal-deaths-prevent-preventable

Panter-Brick, C. (1989). Motherhood and subsistence work: the Tamang of rural Nepal. *Human Ecology*, *17*, 205-228.

Say, L., Chou, D., Gemmill, A., Tunçalp, Ö., Moller, A. B., Daniels, J., Gülmezoglu, A. M., Temmerman, M., & Alkema, L. (2014). Global causes of maternal death: a WHO systematic analysis. *Lancet Glob Health*, *2*(6), e323-333. https://doi.org/10.1016/s2214-109x(14)70227-x

Shrestha, S., Bell, J. S., & Marais, D. (2014). An analysis of factors linked to the decline in maternal mortality in Nepal. *PLoS One*, *9*(4), e93029. https://doi.org/10.1371/journal.pone.0093029

Shrestha, S. K., Banu, B., Khanom, K., Ali, L., Thapa, N., Stray-Pedersen, B., & Devkota, B. (2012). Changing trends on the place of delivery: why do Nepali women give birth at home? *Reprod Health*, *9*, 25. https://doi.org/10.1186/1742-4755-9-25

Thaddeus, S., & Maine, D. (1994). Too far to walk: maternal mortality in context. *Soc Sci Med*, *38*(8), 1091-1110. https://doi.org/10.1016/0277-9536(94)90226-7

Thapa, M. (2000). Traditional beliefs and practices in newborn care in Nepal.

Thapa, S. (2021). Maternal Mortality Levels and Trends in Nepal: A Brief Update. *J Nepal Health Res Counc*, *19*(1), 196-200. https://doi.org/10.33314/jnhrc.v19i1.3169

Timalsina, S. (2022). Maternal and child health care practice of Tamang community. *Innovative Research Journal*, *1*(1), 57-67.

Unequal Citizens: Gender, Caste and Ethnic Exclusion in Nepal. (2006).

USGS. (2016). *One Year After the M7.8 Nepal Earthquake USGS Scientists Return to Himalayan Nation to Learn Lessons*. USGS Science for a Changing World. https://www.usgs.gov/news/featured-story/one-year-after-m78-nepal-earthquake

WHO, UNICEF, UNFPA, World Bank Group, & UNDESA/Population Division. (2023). *Maternal Mortality Ratio: Modeled Estimates*. https://data.worldbank.org/indicator/SH.STA.MMRT

World Health Organization. (2023a). *Fact Sheet: Maternal Mortality*. https://www.who.int/news-room/fact-sheets/detail/maternal-mortality

World Health Organization. (2023b). Trends in maternal mortality 2000 to 2020: estimates by WHO, UNICEF, UNFPA, World Bank Group and UNDESA/Population Division: executive summary.