Ethnomedical and Biomedical Health Care and Healing Practices
Among the Rathwa Adivasi of Kadipani Village, Gujarat State, India

Margaret A. Karnyski
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Ethnomedical and Biomedical Health Care and Healing Practices Among
the Rathwa Adivasi of Kadipani Village, Gujarat State, India

Margaret A. Karnyski

A dissertation submitted in partial fulfillment
of the requirements for the degree of
Doctor of Philosophy
Department of Anthropology
College of Arts and Sciences
University of South Florida

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Key words: indigenous knowledge, Indian, faith healers, allopathy, Hinduism

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DEDICATION

To G. C. K.

From San Diego to Tampa and back again. Who would have thought?

_Jai Guru Dev Om_
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LIST OF TERMS

The terms below are used as operational definitions for purposes of this dissertation.

**Adivasi**—Original inhabitants, indigenous group, tribe or tribal group (Bailey 1960; Baviskar 2005, 2006; Karlsson and Subba 2006).


**Ayurveda**—Indian traditional medicine which includes the use of herbal medicines, minerals, animal products, food, massage, air, water, heat, earth, surgery, detoxification, and tonification to bring about health (Pole 2006:xix).

**Bhoua**—A Rathwa ethnomedical health care provider. A faith healer, one who practices folk medicine, uses indigenous knowledge, and/or intercedes with the supernatural on behalf of an ailing individual to effect changes in health. A practitioner of the black arts, a remover of ghosts.

**Biomedicine**—Scientifically-based medicine having been tested in laboratories and other settings (Nagla 1997). Also referred to as allopathy, conventional medicine Western medicine (Hahn 1995; Kleinman 1980, 1988; Konadu 2007), “cosmopolitan medicine” (Loustaunau and Sobo 1997; Rubel and Hass 1996), “clinical medicine” (Loustaunau and Sobo 1997), or “scientific medicine” (Finkler 1998:118).

**Caste**—Social stratification that is hereditary and permanent (Singer and Cohn 1968:59).

**Chloroquine**—Antimalarial agent used for the treatment and suppression of *Plasmodium vivax, P. malariae, and P. falcipirum* (Stedman’s Medical Dictionary 2006:363).

**Ethnomedicine**—Variously referred to as indigenous knowledge, indigenous healing, folk medicine, faith healing, or magico-religious based practices of healing. The beliefs and practices relating to disease which are the products of indigenous cultural development.
and are not explicitly derived from the conceptual framework of modern medicine (Rubel and Hass 1996:116).

**Fluorosis**—A condition caused by an excessive intake of fluorides, characterized by mottling, staining, or hypoplasia of the enamel of the teeth, although the skeletal bones are also affected (Stedman’s Medical Dictionary 2006).

**Ganesh**—A Hindu god easily recognized for his Elephant head. Images of Ganesh are frequently found in temples in Kadipani, as well as on altars in villagers’ homes.

**Gujarat Mineral Development Corporation (GMDC)**—Mining operation established in 1963 to develop major mineral resources in the State of Gujarat (GMDC 2008). An active fluorspar mine is located in Kadipani village.

**Health Care Practitioners (HCPs)**—Ethnomedical or biomedical health care providers practicing in either Kadipani or Kawant villages. These include bhouas, Ayurvedic, homeopathic, and allopathic doctors.

**Homeopathy**—A system of health care and healing based on the concept of “*Similia Simililus Curantur*,” the belief that like cures like (Nagla 1997:48).

**Malaria**—An infectious blood disease caused by the sporozoan *Plasmodium* that is typically transmitted to humans by the bite of an infected female *anopheles* mosquito (Stedman’s Medical Dictionary, 2006:1145).

**Pithoro**—Wall paintings commissioned by Rathwa for a variety of reasons, most typically related to misfortune within the household, such as poor health or lack of prosperity. A way to ameliorate bad situations. The painting is created by a specialist called a *Lekhar*, who is responsible for the painting/writing aspect, and is read or interpreted, by another specialist, a *Badvo*. The painting is located on the central wall of a home and carries with it responsibilities of care and ritual (Pandya 2004).

**Rathwa**—“Rath” means area, and “wa” means people who live in the area (personal conversation with Prof. Nandubhai Rathwa, January 28, 2008). One of a number of Scheduled Tribes (ST), or *adivasi* groups of India.

**Sadhu**—A Hindu holy man.

**Scheduled Tribe**—A classification indicated in the Constitution of India that promises the adivasi of India protection against exploitation, respect for their tradition and heritage, assistance for the improvement of their socio-economic and educational status (A. K. Singh 1995:13).
Serpunch—Village leader who is elected by fellow villagers.

Shiva temple—A Hindu temple dedicated to the worship of Shiva, a major Hindu god referred to as the destroyer or transformer.

Sickle Cell Disease—An autosomal recessive (genetically inherited) anemia characterized by crescent or sickle-shaped red blood cells (Stedman’s Medical Dictionary, 2006:80). Sickle cell crisis is a painful condition experienced by homozygote individuals under stressful conditions such as extreme heat or cold.

Statistical Software for the Social Sciences (SPSS)—Statistical analysis software.

Taluka—The local governing body/authority above the village level.
Ethnomedical and Biomedical Health Care and Healing Practices Among
the Rathwa Adivasi of Kadipani Village, Gujarat State, India

Margaret A. Karnyski

ABSTRACT

The Rathwa of Kadipani village are *adivasi* (original inhabitants, tribe) residing in a rural part of Gujarat State, India. Primarily farmers, the Rathwa live in an area where development-related projects, such as mineral mining and damming on the Narmada River, are increasingly impacting their livelihood, health status, and quality of life. The local economy is impacted by uncertainty regarding access to water from the Narmada River, concerns related to the extraction of minerals from a mine in Kadipani, and economic issues that arise when the primary wage earner of the household becomes ill.

This dissertation addresses Rathwa health care practices, relying primarily on social constructivism and a political economy framework. I also discuss feminist theory when I analyze women, health care, and spirituality, and modernization theory when I consider the impact of development on health. This study examines the intersection of ethnomedical health care practices (e.g., indigenous/folk medicine/faith healing, Ayurveda and homeopathy) with biomedical/allopathic health care practices. The pluralistic health care system available to the Rathwa in both Kadipani and Kawant villages offers services from private and public sectors, resulting in individuals and families in search of treatment frequently accessing multiple health care providers of both the ethnomedical and/or biomedical categories simultaneously. Treatments for illness may include a visit to a *Bhoua* (faith healer), a public clinic provided by the government, and home remedies prepared from locally available medicinal plants.

This juncture of ethnomedical and biomedical health care practices impacts family health care seeking behavior and decision making in a number of ways. With a variety of health care providers available, people will go from one provider to the next until they receive the treatment they are requesting (e.g., antibiotics, injections, etc.), or their symptoms dissipate and they are healed. This practice may result in conflict with certain aspects of Rathwa history, tradition, and cultural practices, such as forgoing a visit to the indigenous healer, a practice which is considered part of Rathwa tradition, and going straight to the public clinic for prescription medications, or giving birth in the public hospital instead of using a traditional birth attendant at home.
CHAPTER ONE
INTRODUCTION

Introduction

This chapter introduces the scope of the dissertation as well as the main focal points of the research. The rationale for this research will be discussed, as will the research questions, their significance to the health and well-being of the research population, and the implication of the study in terms of health care services and practices among adivasi groups in India.

Statement of the Problem

Belief systems and practices related to concepts of sickness, health, and healing are found in all cultures worldwide. How people within a specific cultural group define health and sickness, wellness, and disease is influenced by a variety of factors. This dissertation examines the health care and healing belief system and practices of the Rathwa adivasi (original inhabitants, tribal group) of Kadipani village in Gujarat State, India. The study includes an examination of Rathwa concepts and beliefs about sickness and health, as well as a discussion of the pluralistic health care system available to them.

I include an explication of the various ethnomedical (indigenous/folk medicine, Ayurveda, homeopathy) and biomedical (science-based medicine) health care systems Rathwa have access to, both in Kadipani village where they live, and in Kawant, a
neighboring village where numerous private and public health care providers are located. My primary purpose was to determine the degree to which ethnomedical and biomedical health care systems accessed by the Rathwa intersect, and what factors encourage or discourage this intersection.

In addition to studying Rathwa health care and healing practices, this research also investigates household health care decision making processes, including an examination of those variables specifically related to health care seeking behavior. For the Rathwa, this involves issues based in religion, economics, and tradition. I examine how the Rathwa deal with illness, including determining which provider(s) to use for health care, either singly or in tandem, who within the household receives what type of treatment, and what type of home remedies to use from locally grown medicinal plants. I specifically considered Rathwa health care and healing practices specific to malaria and sickle cell disease.

My research provides information on the processes that the Rathwa go through when dealing with health-related issues; how and why they value certain health care providers over others; when they may seek the services of a specific type of practitioner; where they go for health care services (e.g., Kadipani village ethnomedical practitioner, Kawant government or private clinic, etc.); and why they make specific health care choices. This study reveals information not just about what the Rathwa do when they or a family member is sick, but how their history, culture, and beliefs systems may be impacted by changes related to modernity.
Rationale

This research is an ethnographic study of the health care and healing practices utilized by the Rathwa, with a specific focus on how they prevent and treat malaria and treat sickle cell disease, especially when someone is in sickle cell crisis. The Rathwa were selected for inclusion in my research for three reasons: (1) they are the largest adivasi group in the area; (2) a large percentage are estimated to have sickle cell disease (S. Basu 1992; Dr. Vijay Shah, personal conversation June 2007), a critical factor in the study of health care practices of people living in a malaria-endemic region; and (3) the pluralistic system of health care in Kadipani and Kawant villages provide an ideal environment for investigating how people navigate and negotiate such a system within the boundaries of their cultural belief systems about sickness and health.

Of special interest to this research is the fact that the Rathwa have historically used indigenous faith healers called bhouas for dealing with health-related concerns. With the availability of biomedical health care services, and the Indian government’s promotion of programs designed to encourage Rathwa utilization of biomedical health care services (e.g., institutional deliveries, inoculations for children), I hypothesized that there would be a trend away from using indigenous/folk medicine practitioners such as bhouas or traditional birth attendants, and an increase in Rathwa accessing biomedical health care services available at the public sector clinics and hospital.

My research considers not only the pluralistic health care system, or “health cultures,” within Kadipani village and neighboring Kawant village, but also situates the problem of meeting one’s health care needs (the micro perspective), within the larger,
macro perspective of a changing economic context. This context is being influenced by increasing uncertainty related to natural resources, specifically access to water from the Narmada River, the mining of fluorspar and other minerals by GMDC, a large operation in Kadipani. These two factors potentially could have an impact on Rathwa health status and quality of life in ways such as differential access to health care.

**Terminology—Adivasi, Tribe, Tribal**

The terms *tribe* and *tribal* are contested terms in anthropology. I will use the term *adivasi* instead of tribe or tribal when referring to the Rathwa as that is how they refer to themselves. Tribe and/or tribal will be used only when referencing another author’s work. The term *adivasi* is derived from two Sanskrit words: *adi* (original) and *vasi* (inhabitant). *Adivasi* are variously defined as original people, original inhabitants, or indigenous peoples (Bailey 1960; Baviskar 2005, 2006; Bayly 2001; Karlsson and Subba 2006), or as aborigines (Baviskar 2006), or as old settlers (K. S. Singh 1995:31). *Adi* may also mean beginning, or of earliest times, and *vasi*, meaning resident of.

**The Rathwa Adivasi of Kadipani Village**

The Rathwa adivasi of Kadipani village reside in a rural, hilly, forested region of Gujarat State, which is in the northwest region of India. This area is populated by other adivasis (Bhils, Nayaka) as well as non-adivasi people, who live in villages of varying sizes, where they practice an agrarian life-style that includes crops such as corn and the tending of various livestock. Being patrilineal and patrilocal, the Rathwa live in joint families in small houses made of wood, cow dung, and occasionally bricks on plots of land that they own rather than lease or rent. Households have few amenities. There is no
indoor plumbing or sewer system in Kadipani. Most homes were clustered around water sources.

The Rathwa practice Hinduism, with many homes having altars in a special corner to honor different gods and goddesses. There is also a large temple to the god Shiva, and a smaller temple to the god Ganesh and local deities in the center of the village, both of which conduct early morning services. The Narmada River, which is not far from Kadipani, is considered a goddess in Hinduism, and figures prominently in various religious ritual practices, which I will discuss in detail in a later chapter. Rathwa women tend to be more spiritual than Rathwa men. They maintain altars in the home, conduct spiritual rituals, and frequently report visiting the temple for healing when faced with health and other personal and family problems.

The Kadipani economic base is primarily agrarian with most families practicing some type of farming as well as raising livestock such as bullocks, cows, goats, water buffalo, and chickens. A few households supplement their farming income by operating small shops where they sell household staples, fruits and vegetables, tobacco products, and personal care items (e.g., soap, combs, toothbrushes). Others seek outside work such as labor at the Gujarat Mineral Development Corporation (GMDC), a mining operation located in Kadipani, where they hold labor, security, driving, or welding positions. Some men have migrated to other areas in search of construction work—an option that is becoming more prevalent. GMDC, whose operations were off line during my preliminary visit to the field site in June 2007, began operations again in the fall of 2007 and remained in operation during the duration of my field research.
Recognizing the impact of GMDC operations on the local economy (employment for Rathwa men, migration of people from other communities to Kadipani to work for the mine), and the prospect of damming projects along the Narmada River, this study of Rathwa health care and healing practices is primarily a medical anthropology study, but considered within the context of development anthropology.

Introduction to the Research Site and Methods

My research began with a preliminary visit to the field site in June of 2007, followed by intensive fieldwork and data collection from November 2007 through February 2008. Field research was conducted in Kadipani village, where the Rathwa reside, and Kawant village, which is approximately 13 kilometers from Kadipani, the main place where the Rathwa go for public as well as private sector health care services. My research was sponsored by Dr. Vijay Shah of the Indu Blood Bank in Baroda, a city about two hours drive from Kadipani. I lived in Kadipani at the GMDC guesthouse during my data collection.

Translators were used to facilitate the data collection process. I spent a considerable amount of time prior to entering the field searching for a translator(s). I needed someone who was fluent in both English and Gujarati, who could understand my American English accent, and with whom I could clearly communicate. I also needed someone with a flexible schedule, who was willing to live with me in the field, and was comfortable speaking with adivasi and asking health-related questions. I interviewed a number of perspective candidates, most of whom were ruled out because their English
skills were inadequate, they were unwilling to live with me in the village, or they wanted to be paid a considerable sum of money for their work.

I selected two young women to be my translators. Ankita Patel and Hatel Patel were classmates at Dr. Vijay Shah’s college. Ankita and Hatel were on a break from school during the time I needed translators, so the arrangement worked well for all of us. I interviewed both Ankita and Hatel at their college. We spent time talking, and I explained my research project. Since they were both microbiology students, the opportunity to conduct health-related research interested them. I also spoke with their parents and obtained permission to take their daughters with me to the field. I met Ankita’s father in person the morning we were to leave for Kadipani, and spoke with Hatel’s father again once we were in the field. This is significant to mention as Indian families are very protective of their daughters, and I had to assure these parents that I would properly supervise and care for them.

I had been informed by my mentor, Dr. Vijay Shah, that the local dialect of Gujarati changes every 12 villages. I was concerned about this because my translators were not adivasi, nor were they locals—they were from the city of Baroda, which is about 2–2.5 hours drive from Kadipani and Kawant villages. I did not know if they would be able to communicate with the Rathwa in Gujarati and be fully understood. I was also curious if there would be issues related to differences in status. My translators were part of the Hindu caste system and the Rathwa were not. I had been told by one individual prior to leaving for the field that I “would not find anyone willing to live with me in the field” because that is not something that non-adivasi people do. Fortunately, I was able
to find two translators willing to live and work with me during my time in Kadipani and Kawant.

Prior to beginning any formal interviewing or surveying, I trained my translators on how we would conduct our research. We practiced asking the questions on both the interview schedule and villager survey form using different Gujarati speaking volunteers until I was satisfied that the information was being conveyed accurately in both directions—my English to their Gujarati and back again. There is the possibility that some meaning may have been lost in translation, but I believe that the information and data I obtained is accurate. I had three different English and Gujarati speakers review both the completed interview schedules and survey forms for accuracy, as well as problems with meaning or translation.

Since ethnographers typically have access to what people say, do, and leave behind (Schensul et al. 1999:1), I selected data collection methods that would give me an in-depth look at what the Rathwa do when someone is sick, why they do it, and what it all means within the framework of their belief system and cultural practices. I was concerned about respondents understanding what I was asking—would certain concepts translate linguistically as well as culturally? I also was concerned about whether they would tell me the truth, or tell me what they thought I wanted to hear, especially when discussing their use of traditional/folk medicine.

My methods included: surveying Rathwa households in Kadipani \(n = 121\); formal interviews with both ethnomedical and biomedical health care practitioners (HCPs) in Kadipani and Kawant \(n = 19\); formal interviews with a sample of Kadipani
villagers (n = 30); informal interviews with Rathwa, HCPs, local government officials, GMDC administrators and workers, and participant observation in a wide variety of settings in both Kadipani and Kawant (e.g., public clinic and hospital, private clinics, villagers’ homes, markets, temples, village center, local shops, primary school).

Since the Rathwa receive health care from a variety of ethnomedical and biomedical service providers in the private or public sectors, local providers of all types were included in the research (e.g., Bhouas, Ayurvedic, homeopathic, and allopathic doctors.) There were no Unani tibb practitioners in either Kadipani or Kawant. Unani tibb is an ethnomedical health care practice found among Muslim populations. Public sector services are provided free of charge, while health care services at private clinics are provided on a fee for service basis. I spent extensive time observing in private clinics and the public clinic and hospital, which allowed me to see a wide range of illnesses being treated.

**Research Questions**

1. What prompts Rathwa to seek a certain type of health care, be it ethnomedical, biomedical, or a combination of both?

2. Do Rathwa forgo ethnomedical practitioners and instead visit a biomedical practitioner when faced with disease or illness? If so, what factors influence this decision?

3. If there has been an increase in Rathwa accessing biomedical services, which diseases most frequently result in visits to biomedical practitioners (e.g., malaria, sickle cell disease, fevers, childbirth, broken bones, etc.)?
4. What impact do traditional gender practices have on health care decision making?

5. What is the impact of economic development projects in the region where the Rathwa live on health care decision-making, especially as it relates to household income and socioeconomic status?

**Structure of the Dissertation**

Chapter Two begins the dissertation with an introduction to the research setting, Gujarat state, geography, demography, health care practices within the country, a discussion of malaria and sickle cell disease, and prior research. Chapter Three is a discussion of theory including social constructivism, political economy, feminist, and modernization. I focus on how the local political economy impacts health and health care seeking behavior; the influence of Rathwa socially-constructed beliefs about sickness and health; gender-based differences health care and healing; and the role of modernity in choice of health care provider. Chapter Four provides a lengthy explication of ethnomedical and biomedical health care practices among the Rathwa, as well as a discussion of the spiritual or religious aspects of health care and healing. Chapter Five covers the methodology I used for data collection, including the sampling procedures, key informants, and reflections on my fieldwork experience.

Chapter Six includes my data analysis and a discussion of findings, including an examination of the barriers to health care, socially constructed beliefs about sickness and health, and the changing perceptions and roles of health care providers. Chapter Seven discusses my major conclusions, addressing the five research questions and offering
recommendations to address specific Rathwa health concerns (with a specific focus on prevention, treatment, and education programs for both malaria and sickle cell disease. Chapter Eight completes my dissertation by examining the contributions of my research to applied anthropology and to health care in India. Three separate sections specifically address health care and healing; the local political economy; and Rathwa identity, both as Rathwa and as adivasi.
CHAPTER TWO
THE RESEARCH SETTING: GUJARAT STATE, INDIA;
HEALTH CARE PRACTICES; MALARIA, SICKLE CELL DISEASE AND PRIOR RESEARCH

Introduction
This chapter discusses Kadipani and Kawant villages, situating these communities within the larger context of Gujarat State, and the country of India. Since India is a developing nation, I examine how development in the region may be impacting life for the Rathwa in Kadipani village, as well as how health care in India has evolved over time, and current health care and healing practices.

Research Setting
Kadipani and Kawant villages are in a rural part of Gujarat State, and are ideal locations for conducting this research on ethnomedical and biomedical health care practices among an adivasi group. India has the largest tribal population in the world, consisting of approximately 67.7 million (Tewari 2004:161), with adivasi groups comprising about 8.08 percent of the total population (Kshatriva 2004:17). In addition, people in the area have a long history of practicing ethnomedicine, though they are increasingly exposed to biomedical health care services through health-related programs.
such as institutional births, inoculations for children, and government-sponsored health education projects, such as family planning.

While Gujarat State is very modern and urbanized in many areas, Kadipani and Kawant are rural, with most people living in small villages with governance and health care system provision being provided at the local village, taluka, and district levels, as well as the overarching national level. India, a former British colony that achieved independence in 1947, is a rapidly developing nation, undergoing changes in many arenas (e.g., political, economic, education, health), especially in the realm of the provision of health care services to its diverse population groups.

**Geography**

Gujarat State is located in the north-west portion of India, and has a border with Pakistan. Gujarat is a particularly significant location for this dissertation research because even as it ranks as one of the most developed states in India, in terms of both agricultural and industrial growth, this growth has largely been concentrated in central Gujarat. The extent to which this growth will impact the southern part, which is home to a variety of adivasi groups, and forms part of a larger adivasi population stretching through central India, is a process that remains to be documented.

**Demography**

Gujarat has a population of approximately 50.5 million (Census of India 2007), of which about 15 percent are classified as members of “Scheduled Tribes” (ST). The Rathwa are classified as ST (N. P. Das 2000) and are afforded certain social, economic, and educational rights due to this status. This research was conducted in Kadipani and
Kawant, neighboring villages located in a rural part of Gujarat State (Figure 1—Map of Gujarat State).

![Map of India](https://www.mapsindia.com)

Figure 1. Map of India. Gujarat State is in yellow (Grouptrust.org 2009).

Kadipani and Kawant are situated in a hilly forest area where there has been an increase in industrialization, including fluorite mining by the Gujarat Mineral
Development Corporation (GMDC), as well as damming projects along the Narmada River (Figure 2), which has resulted in numerous changes to established adivasi lifeways, including the flooding of entire villages, the dislocation of homes, loss of farm land, an increase in outward migration for employment, and an increase in the prevalence of certain diseases (Blinkhorn and Smith 1995; Deegan 1995; Fisher 1995a, 1995b; Khagram 2004; Kothari 1995; Patel 1995).

Figure 2. Map of Gujarat State showing Kawant village (Pandya 2004:118).

The Narmada River

The Narmada River has an interesting history and mythology. Described as “swift and meandering,” the Narmada flows east to west, covers approximately 800 miles, and passes through three states (Maharashtra, Madhya Pradesh, and Gujarat) before emptying into the Gulf of Khambhat which flows into the Arabian Sea (Deegan, 1995; Fisher
As a naturally occurring “geographic and cultural boundary from both northern and southern perspectives” (Fisher 1995a:31), the Narmada may be seen as a dividing line both culturally and historically. Interestingly, “coordinated development through big dam building on many of India’s waterways was originally investigated and planned by British authorities during the colonial period” (Khagram 2004:34). After independence from British rule, when faced with severe drought in the 1960s, the Indian government sought ways to ameliorate this situation, with the primary solution being the construction of dams along the Narmada. The problems that ensued are widely chronicled; many remain today (Blinkhorn and Smith 1995; Khagram 2004), and will continue as long as damming projects remain an option for national development.

The Narmada River, which has been “targeted for ‘water resource development’ for more than fifty years now . . . has, until recently, evaded being captured and dismembered” because it courses “through three states—Madhya Pradesh, Maharashtra and Gujarat” (Fisher 1995a:31). Conflict among the three states over water sharing programs has resulted in a slowdown in the implementation of a number of damming projects (Figure 3). Fisher (1995a) writes on development projects along the Narmada River and subsequent resistance to these projects by adivasi groups. He notes that the Narmada conflict has been “frequently portrayed in the press as a struggle between a powerful multinational development apparatus, on the one side, and relatively weak and defenseless local nongovernmental organizations, on the other” (Fisher 1995a:15).
What is absent is the voice of the adivasi groups who live along the Narmada and who have been displaced by the damming projects. The stress of dealing with such an issue could potentially affect peoples’ health. Patel asks a critical and difficult-to-answer question: “What do the Narmada Valley tribals want,” when it comes to economic development, land rights, access to water, and recompense for lost livelihoods resulting from damming projects (Patel 1995:179). Various plans for remunerating people for lost land, livestock, and household goods have been proposed but not always implemented. What results is a growing group of displaced people who have no land, with women being especially impacted due to “a patriarchal notion of landownership being imposed by the state on tribal societies” (Basu and Silliman 2000:431).

Baviskar (2005) writes on adivasi conflict over damming projects along the Narmada River, noting that longstanding issues pertaining to power differentials, access
to water, and loss of land and livelihood continue today. Arundhati Roy, an Indian writer and activist who has chronicled the progress of Narmada River damming projects during the 1990s observes that “India is the third largest dam builder in the world” and that “their reservoirs have uprooted millions of people” (Roy 1999:ix), including the Rathwa (personal communication with displaced villagers, June 2007). While dams have “been built in the name of National Development” (Roy 1995:ix), the impact of these damming projects on adivasi groups is extensive and far reaching, including flooding of villages and the resultant displacement of people, as well as the loss of livelihood from the subsequent loss of farmland, homes, livestock, and material possessions critical to carrying out one’s profession. The Narmada River, which courses through Gujarat state, is in close proximity to where the Rathwa live, being a source of water for cooking and drinking for some villagers. I discuss the significance of this in detail later in the dissertation.

**The Local Economy**

Development initiatives in Gujarat are varied, but the largest and most controversial include the damming projects along the Narmada River (Basu and Silliman 2000). Khagram notes that “great numbers of big dams were initiated right at the very start of the post-Independence era” (Khagram 2004:35), and have been ongoing and controversial. Damming projects along the Narmada River continue today with the Sardar Sarovar project perhaps being the most controversial, with groups of all types, (governmental, NGO, special interest, etc.) entering the fray. Resettlement programs for those displaced by newly constructed dams and the subsequent flooding have resulted
in massive loss of land and livelihood, and have not always been successful, doing little to ameliorate problems faced by powerless, displaced villagers. For the Rathwa, development of the local economy is impacted by uncertainty regarding access to water from the Narmada River and GMDC mining operations.

Nagla notes that in pre-Independent India “the dominant system of medicine was the traditional system which had no preventative characteristics and its effectiveness for controlling diseases was very slow and inadequate” (Nagla 1997:60). Unfortunately, such long-standing practices which persist to this day do not always adequately meet the health care needs of the adivasi populations who live in rural regions, and who might not be fully receptive to what some refer to as angreji, or English medicine (Hardiman and Raje 2008:44). S. K. Basu, who writes extensively on adivasi health in India, observes that,

There are more than 400 tribal groups in India who are exposed differently to the various climatic and environmental stresses/strains and are characterized by their individual socio-economic, socio-cultural and socio-biological set up. The health of these adivasi groups is as such a function of the interaction between socio-cultural practices, genetic characteristics and the environment conditions. The widely varying prevalent health practices, use of indigenous herbal drugs, taboos and superstitions are also responsible for determining the health behaviour and health status of the tribal groups. (S. K. Basu 1994a:v)

The World Health Organization set the goal of “Health for All by the year 2000 AD,” the intent of which was to make strides toward a more equitable delivery of health care services worldwide (Nagla 1997:7). The Indian government, as one of the signatories to this declaration, has made an effort to increase the availability of biomedical health care services to adivasi populations throughout the country (Paul 2005; Tyagi 2002:35). This is a monumental task, one that entails significant changes to healthcare, what Tyagi refers
to as “nothing short of extraordinary” (Tyagi 2002:35, emphasis added). Unfortunately, the year 2000 has passed, as has the WHO’s goal for achieving health for all by that date. Still there are people in numerous countries, including India, and specifically adivasi groups, who are waiting for some improvement in the health care they receive (S. Basu 1992, 1996; Kalla and Joshi 2004; Lamba and Mehta 1995; Nayak and Babu 2003; Rath, 2004). The “extraordinary” work that is required could well include detailed, locally-specific examination and analysis of the relationship between ethnomedical and biomedical health care systems, as represented in my study.

Mineral Mining in Kadipani Village

During my preliminary visit in June 2007, and again during my fieldwork in 2007–2008, the topic of health repercussions related to excess fluorite in the local water as a result of mining operations came up as a suggested topic for investigation and research. Occasionally, an HCP would bring Rathwa children to me and have the child show me his or her teeth, which were frequently discolored from a medical condition called fluorosis (Figure 4). It was speculated that children’s teeth and bones, as well as the teeth and bones of adults in the area of the mine, were being harmed by excess fluorite in the water that people collect from local wells, hand pumps and taps for drinking and cooking. During my time in Kadipani, I collected a water sample from a local hand pump near the center of the village and sent it to a lab for analysis so I could learn more about how this one environmental factor may be influencing Rathwa overall health status. I discuss the findings of this water sample analysis later in the dissertation.
Colonialism, Development, and Health Care

As a former British colony, “a half century of freedom has tripled India’s population . . . more than quadrupled its gross domestic product, and lifted its economy in the last half decade of ‘globalization’ into orbits of cyberspace, armed with nuclear ballistic missiles and satellite dishes” (Wolpert 1997:vii). With these expansive changes have also come cultural changes, some beneficial, others not. Burgeoning population growth has resulted in “estimates of absolute poverty around 34.7 percent . . . absolute and relative poverty generate extremely unhealthy environmental conditions that are conducive to disease” (Qadeer and Visvanathan 2004:147).

India has been colonized by Great Britain (“British India,” Princely States), France (Pondicherry, Chandernagore, Karikal, Yanaon, Mahe), and Portugal (Goa)
In 1858, “British India (the presidencies of Bengal, Madras, and Bombay) passed from the dual government of the East India Company and the British Crown, wholly to that of the British Crown” (Chamberlain 1998:45). The English East Indian Company, “opened up India to British trade, governed Bengal for the Mogul Emperor from 1765, and governed British India in partnership with the British Crown, 1884–58” (Chamberlain 1998:292). In 1876, Queen Victoria of England was “proclaimed Empress of India” (Walsh 2006:295), with all Indians becoming British subjects. Those parts of India considered British colonies remained under British rule until achieving independence on August 15, 1947. In 1961, Goa, which had been a Portuguese colony, was declared an Indian territory, having been “forcibly taken over” (Chamberlain 1999:30).

Dirks, who has written extensively on colonialism, states that “colonial conquest was not just the result of the power of superior arms, military organization, political power or economic wealth.” Rather, it was “sustained and strengthened, as much by cultural technologies of rule as it was by the more obvious and brutal modes of conquest” (Dirks 1996:ix). Colonization “was motivated by the desire for living space or the extraction of riches” (R. J. C. Young 2001:19), which “depended upon determining, controlling, and representing the past” (Cohn 1996:3).

Colonialism “has from the very beginning been a contest over the mind and the intellect. What will count as knowledge? And who will count as expert or as innovator?” (Shiva 2000:vii). From “the eighteenth century onward, European states increasingly made their power visible . . . through the gradual extension of ‘officializing’ procedures
that established and extended their capacity in many areas” (Cohn 1996:3) and frequently resulted in “the transformation of the indigenous economy . . . through the economic and ideological effects of capitalism into non-capitalist societies” (R. J. C. Young 2001:24). Colonialism “involved forms of subjugation of one people by another” (R. J. C. Young 2001:15), in a “world . . . full of incentives for accumulation of all kinds, from knowledge to spices, from narratives to military command posts” (Dirks 1992b:6).

Decolonization is “the surrender of external political sovereignty, largely Western European, over colonized non-European people” (Springhall 2001:2). Independence brought about numerous changes in India, not just in governance, but also in all aspects of Indian life and culture. Colonialism “not only has had cultural effects that have too often been either ignored or displaced . . . it was itself a cultural project of control (Dirks 1992b:3). Kalla and Joshi observe that,

The independence of India from British dominance however has been a turning point in India’s destiny and consequently of its tribal inhabitants. The tribal for the first time became a political entity and were incorporated as sections of society needing provision in matters concerning education, employment and political representation. (Kalla and Joshi 2004:xiii)

In the postcolonial moment, much has changed and is changing for India. The “category or ‘tribe,’ it has been contended, is wholly a colonial construction, as opposed to that of caste which, apart from its particular construction by the colonial state, was also experienced as a way of life” (Jayal 2006:37). How adivasi groups define and maintain their niche as Indian nationals, participate in local and national government, and take part in the process of planning and implementing necessary health care services within an established system is something to be further examined.
Development, which could be considered a double edged sword depending on context, has been studied at length by many (Alliband 1983; Almy 1977; Belshaw 1974; Cernea 1995; Escobar 1991; Frank 1966; Gow 1993; Hoben 1982; Kottak 1990; Pillsbury 1995; Pinto 2004; Schneider 1975; Yunus 1997), and may be defined as a “far-reaching, continuous, and positively evaluated change in the totality of human experience” (D. Harrison, 1988:xiii). Development, which some may view as a form of neo-colonialism, a way of forcing open the doors of the Third World for the First World to continue to exert its power, could be interpreted as espousing a secular theory of salvation, the Third World being perceived as in need of saving for a variety of reasons. Studies of the “Development of Underdevelopment” reveal a long history of colonial domination in which Western metropoles siphoned off peripheral resources, a system of dependence developed in which the colonized country became dependent on the colonizer for infrastructure and services, and a “metropolis-satellite structure” emerges (Frank 1966).

India has experienced colonial rule and its after-effects on a number of levels, many of which impact the local political economy and the health care system (Pinto 2004). With colonialism being driven by the industrial revolution, and capitalism being the driving force behind industrial enterprises, “underdeveloped” countries such as India were diamonds in the rough, representing places or people to be developed, and thus made into something more than they were. Development projects sponsored by foreign entities were believed by some to be a viable option that could benefit many countries. Frank (1966), who is credited with initiating the examination of the “development of under development” notes how colonialism has resulted in vast development initiatives
with numerous benefits for the colonizer and devastating “underdevelopment” of the colonized nation through the loss of power, resources, and autonomy.

The losses experienced by the colonized people are vast, creating a system of stratification, separation, and extreme power differential. Power differential, which is at the base of colonial relationships, creates a severe dichotomy that lingers after the colonial relationship ends. Such may be the case in India, where different groups receive differing levels of health care, possibly as a result of their former colonial status (W. Ernst 2007). The scope of most health care services available and/or accessible to Indian adivasi at times is difficult to accept when we consider that “among the great achievements of humankind in the twentieth century have been the enormous improvements in health worldwide” (Findley 1992a:ix). Unfortunately, the “enormous improvements” in health care noted above by Findley have not yet completely permeated all regions of the world.

The evolution of biomedicine in India is disputed. Worsley states that Western medicine “had spread via the Arabs, to India, by around 750 AD” (Worsley 1982:317), while Nagla credits the British with the introduction of allopathic medicine to India (Nagla 1997:121). Kumar notes that medical science “was introduced from the top by the colonial government on and above the traditional medical sciences” whereby they “trimmed, shaped and conducted the growth of Western medical science to attend, promptly and appropriately, to the callings of the Empire” (A. Kumar 1998:17). The establishment of the Indian Medical Service (IMS) was an effort to regulate the provision
of medical services and to keep Indian nationals who practiced biomedicine in a
subordinated position to the Anglos.

Kadipani and Kawant both have had Indian government-sponsored health care
interventions, all offered free of charge to recipients, and aimed at exerting a direct
impact on some aspect of adivasi quality of life, be it the reduction or elimination of
certain diseases, or the control of fertility. For example, toward the end of my fieldwork,
local health care workers told me of a polio vaccine program that was to be rolled out
soon. They invited me to accompany them, but the start for the program was after my
return home date. While at the government hospital in Kawant, I observed a family
planning “camp” being held. Adivasi women sat lined up along a wall waiting for their
turns to speak with the surgeon about tubal ligation. Since both health status and family
size may impact individual and local economies, it follows that examining this
phenomenon would be beneficial.

**Ethnomedical and Biomedical Health Care Practices**

India is a country of approximately 1.12 billion people (United States Central
Intelligence Agency [CIA] 2007) with a history reaching back 5,000 years (Walsh
2006:xiii). Over time, India has developed a number of ethnomedical/indigenous/folk
medicine and scientifically-based healing biomedical/allopathic methods (Paul 2005),
with some ethnomedical healing practices like Ayurveda and herbalism having been in
place for ages, while other practices, such as biomedicine, being relatively recent.

Ethnomedical health care practices are found in cultures throughout the world.
Considering India, Jaggi notes that “the practice of medicine among tribal people and
villagers today, follows the same pattern it did two thousand years ago” (Jaggi 1973:xiii), with beliefs persisting that illness is caused by evil spirits, ghosts, malevolent gods, witchcraft, and sorcery. These beliefs are important to my examination and analysis of current health care systems in India, especially those accessed by the Rathwa.

Ethnomedicine or ethnomedical health care practices in India include aspects of indigenous knowledge, indigenous healing, folk medicine, faith healing, or magico-religious based practices of healing. Ethnomedical practices and practitioners, which are available in both Kadipani and Kawant, and are readily accessed by the Rathwa, may be considered part of the Rathwa cultural system concerned with sickness and healing (Hahn 1995:4, emphasis added), or “those beliefs and practices relating to disease which are the products of indigenous cultural development and are not explicitly derived from the conceptual framework of modern medicine” (Rubel and Hass 1996:116). Health and well being are not just bodily issues, but also social issues that have impact at both individual and group levels (Nichter 1992:x).

The impact of a society’s cultural beliefs about health and sickness on individual and group health status is noteworthy to the planning and provision of health care services. Equally important is the process individuals or groups go through when making a health care decision either for themselves or others. Of increasing import is the co-occurrence of two different health care systems (ethnomedical and biomedical) providing services for the same patient, which may sometimes be oppositional, and other times collaborative or complimentary.
During my fieldwork, I could not help but notice the many private clinics in Kawant, all of which provide health care service for the Rathwa and others. I found this proliferation of private clinics interesting when I considered that prior research has indicated that adivasi groups experience varying degrees of health care-related services (Joshi 2004:403), such as limited availability, poorly trained practitioners, or practitioners who are self-appointed, lacking the credentials to properly care for the sick and diseased (Langford 1999).

When I conducted structured interviews with both ethnomedical and biomedical HCPs, we spoke at length about their medical training, including questions about education, years practicing, and any areas of specialization. I also asked each HCP to rate the overall health of the Rathwa, and asked each to explain why he or she deemed the Rathwas’ health status as a group to be excellent, good, fair, or poor. Commons themes supporting these categories emerged, with issues of hygiene, overwork, and lack of knowledge about disease processes being the most common.

**Malaria**

Malaria has a long history in various parts of the world, most notably Africa, Asia, South East Asia, and Latin America. With modernization and a change in the environment, malaria disappeared from some regions, but continued to flourish in others. Most seriously affected are those living in sub-Saharan Africa, “where stable, endemic disease is linked to poverty and highly efficient vectors” (Arrow et al., 2004:198). Malaria is an age-old health problem that continues to plague populations in various parts of the world today.
Malaria is not a simple disease, nor is eradication easy. Oaks et al. observe “the nature, duration and severity of malaria infection depend not only on the species of malaria but also on the level of malaria-specific acquired immunity in the individual” (Oaks et al. 1993:212). Malaria may have resulted in the deaths of more people than any other disease (Mascie-Taylor 1993), with infection impacting people’s lives in a variety of ways beyond the physical or biological. It is a serious threat to not only the health, but also to the economic and political systems of many communities around the world, affecting people socially, psychologically, economically, and spiritually (Brown, 1987: 158).

Malaria is endemic to India. In the region where the Rathwa live, Plasmodium falcipirum, the worst strain of malaria, is prevalent. During monsoon season (June-October) heavy rains create an ideal environment for mosquitoes to proliferate. Young children and pregnant women are particularly vulnerable to contracting malaria. At that time, not only is the habitat ideal for the malaria-transmitting mosquito, but people are increasingly spending time outside, plowing and planting their fields, and tending their crops and livestock. The Rathwa pen their livestock in their homes, which attracts mosquitoes, a practice that has been researched in various sub-Saharan African countries, and has been determined to put people at risk for increased exposure to the disease-causing vector.

Malaria is a vector-borne disease, meaning “diseases which are transmitted by non-human animals from one human to another” (Heinrich n.d.:28). It is transmitted by female anopheles mosquitoes during their nightly feeding periods during which time they
bite humans, draw out some of their host’s blood, and deposit a protozoal parasite that causes severe illness. Malaria is caused by protozoa of the genus Plasmodium, with “four species, P. malariae, P. vivax, P. falciparum and P. ovale that parasitize humans” (Mascie-Taylor 1993:30).

Symptoms of malaria infection are characterized by “fever, sometimes recurring every second or third day, anemia, splenomegaly, headaches, and a wide variety of other symptoms” (Mascie-Taylor 1993:30). Malaria infection not only makes some people very sick, it can also “debilitate victims who eventually succumb to other infections . . . and suppress fertility, primarily due to spontaneous abortions and premature deliveries triggered by the malarial fevers and chills” (Brown 1987:158). Without treatment, the disease may last between 18 to 24 months, with periods of acute illness interspersed with lapses in symptomology. Repeated infection throughout the year in a locale that experiences endemic malaria may result in the development of immunity, though “acquired immunity appears to be relatively short-lived and depends on repeated exposure to the parasite over time” (Oaks et al. 1991:213).

Malaria is a disease for which there are ethnomedical as well as biomedical treatments. One ethnomedical treatment used by the Rathwa is neem (Azadirachta indica), a tree indigenous throughout most of India, and is found in both Kadipani and Kawant. It is frequently used by the Rathwa both to prevent and treat malaria. Neem has been noted to be “one of the few drugs that has been extensively studied as to their pharmacological and clinical properties” (Sivarajan and Balachandran 1994:325), and has been found to have an antipyretic (fever reducing) effect. Beckerleg, who has worked
with tribal groups in Kenya on ethnomedical practices, notes that *neem* leaves “are used for cooling in cases of fever . . . as a palliative for malaria (Beckerleg 1994:312). Tribal and non-tribal groups alike may self treat malaria symptoms with *neem*, or use it in conjunction with biomedical pharmaceuticals (Etkin and Ross 1992). In addition, a developed resistance to anti-malarial drugs has led to an increase in illness among vulnerable populations, leaving fewer options for preventing and treating the disease.

**Sickle Cell Disease**

Sickle cell disease (SCD) is an autosomal recessive blood disorder caused by a mutation in the gene for the beta-subunit of hemoglobin (Davidson et al. 2000, 588). A diagnosis of SCD may include individuals with sickle cell anemia, sickle cell hemoglobin C disease, and the sickle cell beta thalassemias (Platt et al. 1994:1639). SCD “includes a variety of pathological conditions resulting from the inheritance of the HbS gene either homozygously or as a compound heterozygote with other interacting abnormal haemoglobin genes” (Serjeant and Serjeant 2001:23). Outside of India, SCD is typically found among those of African descent in populations where malaria is endemic. Serjeant and Serjeant, writing on the “origin of the sickle cell gene” note that “there is now substantial evidence that the sickle cell mutation has occurred as several independent events” (Serjeant and Serjeant 2001:17). Their discussion of the “single mutation theory” postulates that the sickle cell gene was carried to India by migratory peoples from the Arabian Peninsula (Serjeant and Serjeant 2001:17).

SCD is a disorder that runs in families, the result of a genetic adaptation that affects hemoglobin, or red blood cells, which carry oxygen throughout the body. Normal
hemoglobin is referred to as type A, sickle hemoglobin is type S. Hemoglobin S “is produced by a mutated gene coding for one of the blood proteins” (Olney 2000:431).

According to Serjeant and Serjeant,

The inheritance of sickle cell disease obeys the principle of Mendelian inheritance. When one parent is heterozygous for the sickle cell gene and the other parent is normal, the offspring would have an equal chance of having either the sickle cell trait or a normal AA genotype. If both parents have the sickle cell trait, there is a 1 in 2 chance of offspring having the sickle cell trait, and a 1 in 4 chance of the offspring being normal (AA) or having SS disease. (Serjeant and Serjeant 2001:33)

SCD is transmitted from one generation to the next when both parents (heterozygous, or carriers of sickle cell trait) each pass the sickle cell gene to their unborn child. Two parents with sickle cell trait have a 25 percent chance of having a child with sickle cell disease. To have SCD, one must be homozygous for sickle hemoglobin. According to the Sickle Cell Disease Association of America,

Sickle cell disease is an inherited blood disorder that affects red blood cells. People with sickle cell disease have red blood cells that contain mostly hemoglobin* S, an abnormal type of hemoglobin. Sometimes these red blood cells become sickle-shaped (crescent shaped) and have difficulty passing through small blood vessels. When sickle-shaped cells block small blood vessels, less blood can reach that part of the body. Tissue that does not receive a normal blood flow eventually becomes damaged. This is what causes the complications of sickle cell disease. There is currently no universal cure for sickle cell disease. (Sickle Cell Disease Association of America [SCDAA] 2009)

Normal red blood cells (RBCs) are shaped like doughnuts, sickle red blood cells are sickle-shaped (Figure 5). This distortion makes it difficult for RBCs to move through small blood vessels, causing pain and tissue damage.
SCD may be detected as early as 3 months of age or may remain asymptomatic until adulthood (R. K. Kar 1993). According to Serjeant and Serjeant, the “diagnosis of the major genotypes sickle cell disease is relatively simple” and includes the sickle test or the solubility test (Serjeant and Serjeant 2001:41). SCD is estimated to be present in up to 20 percent of adivasi populations (Balgir 2006; S. Basu 1992; B. C. Kar 1991; Penchaszadeh 2000), possibly 20 to 30 percent of Rathwa (Dr. Vijay Shah, personal communication, 2007). SCD, which has been studied extensively in sub-Saharan Africa populations, is believed to provide some level of protection against an individual contracting certain types of malaria (Allison, 1954).

The disease itself causes health problems that must also be treated, such as the periodic manifestation of symptoms associated with sickle cell crisis (SCC). During SCC, the sickling of RBCs impedes blood flow, which is very painful, and may have
lasting after affects such as: strokes, increased infections, leg ulcers, bone damage, yellow eyes or jaundice, early gallstones, lung blockage, kidney damage and loss of body water in urine, painful erections in men (priapism), blood blockage in the spleen or liver (sequestration), eye damage, low red blood cell counts (anemia), and delayed growth (B. C. Kar 2002; Sickle Cell Information Center, 2009).

**Why Study Malaria and Sickle Cell Disease?**

Malaria has a history of ravaging populations, specifically adivasi groups, for many generations throughout various parts of the world, including parts of India. In spite of considerable clinical research and the development and implementation of intervention programs, malaria persists today. Economist Jeffrey Sachs has devoted considerable time and effort to examining the ramifications of malarial infection on individual, local, and national economies, as well as how this disease affects the overall health of individuals and families, especially the most impoverished populations of the world (Malaney et al. 2004; Sachs 2007; Sachs and Malaney 2002).

Sachs proposes that a small amount of money coupled with basic interventions, such as the distribution of long-lasting insecticidal bednets (LLINs) or the use of Artemisinin-based medications used in combination with traditional anti-malarials, would ameliorate the problem, if only large governmental entities would step up to the task (Finkel 2007; Malaney et al. 2004; Sachs 2007; Sachs and Malaney 2002). Focusing on the economic and social burden of malaria, Sachs and Malaney observe that “long before economists attempted to estimate the costs of malaria, natural selection had already demonstrated the phenomenal burden of the disease” (Sachs and Malaney 2002:680).
When health issues are coupled with personal financial issues, a serious problem arises that reaches beyond the family or household unit into the local community and beyond. The threat of malaria infection threatens industry, tourism, migration, and overall population health status. Such a long-standing problem is well suited to study and examination by applied anthropologists.

**Prior Research**

Prior research indicates there is a pressing need for anthropological research that focuses on the intersection of ethnomedicine and biomedicine within Indian adivasi culture (Basavanagouda 2004; S. Basu 1992, 1996; R. K. Kar 1993; Lamba and Mehta 1995; Nayak and Babu 2003, Tyagi 2002). Especially, we need to know how this intersection relates to individual decision making about health care services, the medical training and competence of indigenous/traditional healers, as well as collaboration between ethnomedical and biomedical practitioners, in order to develop health care services that promote and support healthy, sustainable communities (S. K. Basu 1994a; Joshi 2004; R. K. Kar 1993, 2004; Lamba & Mehta 1995; Nayak & Babu 2004; Thakur 2002). Stratification may occur within a population based on race, ethnicity, gender, age, religious affiliation, and education level. These variables influence to varying degrees who gets what type of health care, when, and why.

A number of studies have been conducted in Indian villages regarding villager perceptions of disease and illness, allopathic and traditional methods of healing, and the decision-making process. Bhardwaj, who conducted research pertaining to medical practices, systems of medicine, and villager treatment preferences in four villages in the
Punjab found that “angrezi (English) medicine and allopathic physicians were generally preferred of the desi (indigenous) medicine and its practitioners, by all the caste groups” (Bhardwaj 1975:604). Indigenous knowledge, which may include information about the application of traditional healing methods such as the use of medicinal plants to effect healing or prevent disease, plays a central role in any examination of a culture’s ethnomedical practices. Srinivasan (1984) found similar results when conducting research in villages in Tamil Nadu. Villagers had a greater faith in allopathic medicine and were more open to receiving treatment from allopathic physicians, including services such as immunizations for children (Srinivasan 1984).

Pinto, who has conducted fieldwork in the Sitapur district of Uttar Pradesh in North India, writes “in much of rural North India, government and nongovernment health institutions are part of the fabric of everyday life” (Pinto 2004:337). These institutions may include the sacred and secular, such as shamanism and ritual curing (Kleinman 1980), faith healers, midwives, herbalists (Joshi 2004) or persons of “self-made medical authority” (Pinto 2004:337). Langford (2002), who has researched trends in Ayurvedic medicine practices in India, has discovered a tendency for there to be blending of ethnomedical and biomedical practices by one practitioner, with very little formal justification, other than a notion that if the combination makes the patient better, no harm is done.

Thus, my research examines an issue that has been well documented. Medical anthropologists such as Dressler et al. (2005), Garro (1998a, 1998b, 2000), J. C. Young and Garro (1982), Nichter (1992), Nichter and Nichter (1989, 1996), and Nichter and Van
Sicklen (2002) have explored why people in various cultures make certain health care decisions, such as choosing an indigenous healer for some types of illnesses, and an allopathic or biomedical practitioner for others. The populations these researchers have worked with live in various parts of the world, with differing belief systems and cultural practices related to sickness and health, healing and health care, but they are all seeking ways to ameliorate suffering due to sickness or disease.

**Summary**

The Rathwa face a variety of health-related issues, many of which have major impacts on their quality of life, including malaria and sickle cell disease. The HCPs I interviewed spoke of difficulties those with SDC experience during SCC, which is brought on by factors such as stress or extremes of temperature. While the HCPs provided me with a very long list of Rathwa health-related issues I could study during my time in the field, I decided to focus on malaria and sickle cell disease for a variety of reasons.

I had a number of questions related to my research questions that I wanted to answer. First, I wanted to know what the Rathwa knew about malaria, and their approaches to preventing and treating the disease. I also wanted to determine their level of knowledge of SCD, such as its causes, symptoms, and treatments. Recognizing that people anywhere are going to do tomorrow what they do today unless there is a compelling reason not to, my goal was to determine to what extent socially constructed beliefs influenced their treatment of not just malaria and SCD, but other illnesses as well.

I wanted to know if health care-related decision making differed by patient age, gender, or
some other factor, such as being the primary wage earner in the household. I was curious if patient gender influenced what type of HCP one sought treatment from, and the degree to which spiritual practices were utilized to prevent or treat illnesses.

I also wanted to examine the economic side of sickness, specifically malaria. Jeffrey Sachs has written in detail about the economic impact of malaria on local communities as well as entire industries and countries, though primarily in Africa. I wanted to see first hand what it was like to live in a community where malaria was endemic, where economic development programs were underway, and where the people had a variety of approaches to preventing and treating malaria.

I was also interested in the impact of modernization, or modernity, on traditional health care and healing practice among the Rathwa. India has a long history of ethnomedical practice, the most well know being Ayurveda. The Indian government has been promoting Western/allopathic/biomedical health care practices, in some instances as a replacement for traditional methods of healing. From my preliminary visit, I knew that some Rathwa sought the services of faith healers called bhouas, and that the bhouas were one health care treatment option among several that someone could choose when the need arose. I wanted to determine how Rathwa perceptions of the bhouas might be changing in response to an increase in availability of non-faith based health care options, such as allopathy. Was the status of this tradition changing, and if so, why and how?

I could have studied populations dealing with malaria and SCD in many African countries, a continent where these two diseases have been extensively researched by people in a wide variety of disciplines. Working with the Rathwa, I had the opportunity...
to make a contribution to the research and literature on both the medical and economic aspects of malaria and SCD outside of Africa, thereby expanding the knowledge base on how different cultural groups approach these two diseases.

The long-standing history of ethnomedical health care practices in India in general, and among the Rathwa in particular, coupled with the increasing availability of biomedical health care services provides an ideal environment for examining how these two distinct health care systems interface. Recognizing that people anywhere are going to continue to practice what has worked for them in the past unless they have a compelling reason to do otherwise, it follows that an examination of the confluence of ethnomedical and biomedical health care practices among the Rathwa would shed some light on how and why people gravitate away from traditional health care and healing practices toward newer, more modern health care and healing practices. My intent is to understand that compelling reason for changes in Rathwa health care practices.
CHAPTER THREE
THEORETICAL FRAMEWORK

Introduction

In this chapter, I offer a critical review of relevant literature, drawing primarily on scholarship in medical anthropology, as well as a detailed discussion of social constructivism, political economy, modernization, and feminist theory, showing how these provide the theoretical frameworks for my research.

Theory and Medical Anthropology

Theories and practices in medical anthropology have evolved in response to the historical, political, and economic situations of the times (Escobar, 1991:659), reflecting changing viewpoints and addressing contemporary issues. Morgan laments that “medical anthropologists have too often overlooked the political and economic determinants of disease” (Morgan 1987:131), focusing on other aspects, possibly missing critical revelations due to an overly narrow perspective. Anthropologists have long recognized that so much of what people can, and actually, do to improve the quality of their lives is tied to history, money, access, power, information, and culture—factors that change over time and in response to many things that are frequently beyond their control.

Scholarship on concepts of health care and healing strives to determine why people think and act as they do when it comes to making health care choices (Garro...
such as using home remedies, practicing religious ritual to evoke healing, or seeking the services of ethnomedical or biomedical health care providers. Numerous researchers have examined the process by which individuals in a wide variety of cultures make decisions about health care and healing practices, what prompts them to make these decisions, and the outcomes of their decisions (Abelson and Levi, 1985; Chrisman, 1977; Garro 1998a, 1998b, 2000; Gladwin 1989; Kayser-Jones 1995; Mathews 1982, 1987, 1990; Mathews and Hill 1990; Weller et al. 1997; J. C. Young and Garro 1982, 1994). Each researcher has looked at culturally significant factors that guide informant health care decision making, including those that influence who makes decisions and when, and the hierarchy of possible options for health care or healing services. From a theoretical perspective, a researcher may consider the social context within which someone lives, their culture, and how shared beliefs and practices pertaining to sickness and disease move people to seek treatment. Within a specific social context, a researcher may also consider how the economic situation of the community or region, as well as its political focus, may impact not only the seeking of health care services, but also the way in which such services are provided.

Using a model or models to develop theory about the phenomenon being observed is part of the analysis of health care decision making with any population. Since concepts of health and disease are influenced by cultural values, and tend to be dynamic rather than static (Loustaunau and Sobo 1997:17), it follows that a theoretical approach to sickness and health would be responsive to changes within cultural beliefs and practices. I utilized Nichter’s framework of health care systems (Nichter 1992:x) for my research, including:
(1) an examination of the continuities and discontinuities of the health care systems the Rathwa have access to; (2) an examination of Rathwa health care seeking behavior within their pluralistic health care system as it relates to age, gender, and socioeconomic status; (3) an examination of how the Rathwa classify illness, specifically looking at their language of illness and how they conceive of, or conceptualize health, sickness, illness and disease, and (4) how these concepts of health and sickness influence health care decision making in general, and in specific how they prevent and treat malaria, as well as their treatment of sickle cell disease, two serious health concerns the Rathwa frequently seek treatment for (personal conversation with a group of Kawant ethnomedical and biomedical private clinic doctors, June 2007).

In determining theoretical approaches to take to my research, I considered my research questions, the goals I wanted to achieve through my research, and the methods I would utilize to achieve my research (de Munck and Sobo 1998:260). Developing theory about a particular phenomenon is a complex activity that requires the researcher to be cognizant of what is going on within a particular situation, to be able to determine, assess, and analyze themes or domains that occur and recur within the phenomenon being observed, and to make theoretical decisions based on the data collected rather than from a preconceived notion of what or how something should be. I entered the field prepared to conduct my research from social constructivist and political economist theoretical perspectives. My goal was to determine how health care decision making was influenced both by locally held beliefs and practices pertaining to health and illness, as well as by local and wider economic forces. Once in the field, I noticed gender-based differences in
how health care decisions were made and want to learn more about what factors influence who gets what type of health care and when.

**Social Constructivism**

Social constructivism, or the social construction of reality, was introduced by Peter Berger and Thomas Luckmann in the 1960s. They explain that “reality is socially constructed . . . a quality appertaining to phenomena that we recognize as having a being independent of our own volition” (Berger & Luckmann 1966:1). The social construction of reality is a dialectic whereby humanity creates reality and thereby produces itself (Berger & Luckmann 1966). Social constructivists “believe that what people know and believe to be true about how the world is constructed or made up” (LeCompte and Schensul 1999b:48).

Social constructivism may be defined simply as “the reality we make, not find” (Pittman 2000:11), more complexly as “structures of human association determined primarily by shared ideas” (Wendt 1999:1). Social constructivism recognizes that, “meaningful behavior, or action, is possible only within an intersubjective social context” (Hopf 1998:173); it considers the “way in which rules and norms condition actors’ self-understandings, preferences, and behaviour” (Reus-Smit 2004:3). This is a world view in which “individuals seek understanding of the world in which they live and work. They develop subjective meanings of their experiences—meanings directed toward certain objects or things” (Creswell 2007:20). The world of health care systems is socially constructed by the people who define the meaning of health, sickness, illness, and disease, as well forms of treatment.
Hahn notes that “the culture of a society constructs the way societal members think and feel about sickness and healing” (Hahn 1995:77). The social construction of the reality of health, sickness, illness, and disease is culturally specific, and is an ongoing and dynamic process within a culture or specific group, being influenced by a variety of factors, that may, over time, modify existing socially constructed reality, such as with exposure to new cultures and beliefs systems, which may occur through the processes of modernization and globalization, the introduction of new technology, or acculturation. Socially constructed reality, which is the world view of individuals and the groups they belong to, is what influences people when they prepare to make, or actually do make, decisions about health care for themselves or others.

In the case of health care decision making and members of adivasi or non-advai groups, world view, rules, and norms would be culturally-based and specific to those groups. If the prevailing belief system is that all sickness is caused by evil spirits, or malevolent beings such as witches, then the primary choice for treatment will be one that seeks to either appease the spirits or counteract the forces of the witch. Ferguson and Mansbach observe that,

Constructivists maintain that we as agents act in the world (subjectively) in accordance with our perceptions of that world, that the world as it is (objectively) helps to shape (but may not be the same as ) those perceptions, and that both perceptions and actions in turn have an impact on the objective nature of the world. (Ferguson and Mansbach 2004:49)

Social constructivism’s utility is attributable to its “insights into the interplay of institutions, norms and identities” (Acharya 2001:15) in that it emphasizes “the importance of normative as well as material structures, the role of identity in the
constitution of interests and action, and the mutual constitution of agents and structures” (Price & Reus-Smit 1998:259). This is significant because “all social communities rely on norms of behavior” (Acharya 2001:24) which are ingrained within their world view.

Clearly “intersubjective factors, including ideas, culture and identities” (Acharya 2001:27) influence perceptions of health, illness, sickness and disease, as well as how individuals and groups make decisions about whether to see an ethnomedical or a biomedical health care practitioner for their health concern, and when to see which type of practitioner. Do they first go to their local ethnomedical practitioner and, if their condition does not improve, do they then seek the services of a biomedical practitioner? Do they access the services of each type of practitioner in tandem or simultaneously, hoping for, or relying on, the potential for a complementary relationship to take place? Individual beliefs about health, healing, illness, and sickness are socially constructed within a specific cultural framework, one which is particular to the society, ethnic, or religious group one is a member of (Findley 1992b; Hahn 1995; Jaggi 1973; R. K. Kar 1993; Kleinman 1980, 1988; Paul 2005, Thakur 2002; Tyagi 2002). Paul states that “every culture, irrespective of its simplicity and complexity has its own system of beliefs and practices concerning health and ill-health and treatment of diseases (Paul 2005:258). As a socially constructed phenomenon, illness behavior is “strongly influenced by social expectations and ideas about illness . . . made and experienced differently in different societies” (Lewis: 1993:94), being shaped and influenced via social experiences and learning one goes through over a lifetime.
Kleinman, who has conducted extensive research on health, health care, culture, posits that “health care systems are socially and culturally constructed. They are forms of social reality” (Kleinman 1980:35). If we understand the social reality of a culture, we may be better able to understand the social reality of how people in that culture go about making health care-related decisions. Since reality is socially constructed, it follows that individual and group beliefs about the origin or causes of health, sickness, illness, and disease, as well as beliefs about systems of health and healing are also socially constructed within a specific cultural framework.

The social construction of disease and illness may fall into two different categories, naturalistic and personalistic. In naturalistic systems “illness is explained in ‘impersonal, systematic terms’ with disease resulting from ‘such natural forces or conditions as cold, heat, dampness, and above all, by an upset in the balance of basic body elements’” (Garro 2000:307). Personalistic systems, which differ from naturalistic systems, focus on the explanation of misfortune, which is believed to be caused by some outside force, such as a witch of sorcerer, evil spirit, or deity (Garro 2000:307). When faced with sickness, individual’s socially constructed beliefs tied to that particular illness guide their decisions as to whether they should wait out the sickness (hoping it will resolve itself), treat it with home remedies, or seek the services of either an ethnomedical or biomedical health care practitioner.

Dressler and colleagues have used a social-constructivist model to examine health disparities, race and ethnicity in a community in the United States (Dressler et al. 2005). They discovered that the social-constructivist model “offers greatest promise to explain
disparities” in health care when compared with a racial-genetic model, a health-behavior model, a socioeconomic status model, and a psychosocial stress model (Dressler et al. 2005:). The social-constructivist model “takes into account the dual nature of human existence . . . what is taken to be the reality of life is in large part a cognitive representation, constructed out of an amalgam of socially shared understandings” (Dressler et al. 2005:241). It is these socially shared understandings that shape perceptions about health and illness within a group or society.

Garro (1998a, 1998b, 2000) has also applied the social constructivist model to her research on health care decision making with two very different groups, the first in Pichataro, a community located in west-central Mexico, and the second being the Anishinaabe in southwestern Manitoba, Canada. Garro found that each group socially constructed their beliefs around health, sickness and healing. These beliefs influenced informants’ decision making when seeking treatment for illness, such as in the cases of “Anishinaabe sickness,” “bad medicine,” or “White man sickness” (Garro 2000). During her fieldwork with the Anishinaabe, Garro used participant observation, free listing, interviews and questionnaires to collect data and map the health care decision making process.

Garro’s findings indicated that the Anishinaabe’s socially constructed beliefs about certain types of sickness directed their health care decision-making process. This was the case with “Anishinaabe sickness” which “may be suspected when a physician is unable to cure an illness or if the illness does not seem to be an ordinary one” (Garro
The cause of “Anishinaabe sickness” may be witchcraft or the work of some malevolent non-human entity.

Alternatively, during her work with the Pichataro community in Mexico, four treatment options were available (1) home treatments, (2) treatment by folk curers (curanderas), (3) treatment by practicantes (local unlicensed practitioners of biomedicine), and treatment by a physician (Garro 2000:310). Using free listing and questionnaires, Garro found that “according to Pichatarenos, experiencing strong emotions (such as anger, joy, fright, desire, sorrow, humiliation, and sadness) may lead to illness” (Garro 2000:314). Her questions to participants about how they respond to illness were designed to get at the relationship between “cultural knowledge and what people do when faced with illness” (Garro 2000:315). Garro found that the illness cases she analyzed “illuminate how illness and care seeking are socially and culturally embedded” (Garro 2000:330).

Waxler examines the way that individuals diagnosed with Hansen’s disease, or leprosy, “learn to be lepers” (Waxler 1998:147). Her position is that “social negotiations turn symptoms into social facts that may have significant consequences for the sick person” (Waxler 1998:147). Because leprosy is “universally stigmatized, stigma may function as a sort of social protection device” (Waxler 1998:149) that was used to justify isolating those afflicted with the disease. A “society’s expectations for lepers, its beliefs about them, have significant influence on their experiences as sick people” (Waxler 1998:153).
Social constructivism is a beneficial approach to understanding how groups and individuals create their reality around health, sickness, illness and disease, and how they translate that reality into decisions about health care and treatment modalities. A “key feature of constructivism is holism or structuralism, the view that social structures have effects that cannot be reduced to agents and their interactions” (Wendt 1999:138). This concept may be successfully applied to the analysis of health care systems, such as government or private hospitals and clinics, where the system is created within a culture of health or sickness, which is created within a society.

This theoretical model is beneficial to the study of health care decision making among the Rathwa. Das has conducted research on disease, illness, and ethnomedical treatment with the Rathwa in Suskal, Gujarat. His research questions explored issues such as “how do people distinguish good health from bad health? What causes illness and how much do they attribute to supernatural reasons for falling sick?” (M. Das 2004: 285). Das found that disease causation among the Rathwas was attributable to both natural and supernatural means, with most diseases being attributed to supernatural forces. The Rathwas “believe that Sitala-mata or Devi (Goddess Kali) usually causes small-pox to express her anger. The other local deity, Tilau Mata, when provoked, afflicts a person with leprosy (Das 2004:288). The deities must be appeased if the person is to get well.

Social constructivism is the correct theoretical framework for analyzing the health and healing practices of the Rathwa for a number of reasons. First, many of their health-related decisions are based on personal and group-held beliefs about sickness and health,
such as illnesses being caused by evil spirits, possession by ghosts, or curses placed by another individual. Second, Rathwa belief in gods of the Hindu pantheon, which includes worshiping certain deities, or appeasing them when they have been slighted or neglected, demonstrates that religious or spiritual beliefs socially construct their behavior, including when faced with illness. The goal of research from the social constructivist theoretical framework is to “rely as much as possible on the participants’ view of the situation. Often these subjective meanings are negotiated socially and historically . . . they are not simply imprinted on individuals” (Creswell 2007:20). My observation of how Rathwa individuals and families approached a variety of health-related allowed me to see and better understand how important group-held beliefs and practices are to their daily lives.

**Political Economy**

Many researchers across disciplines have examined the impact of political economy on health and health care (H. Baer 1982; Briggs 2004; Crandon 1986; Morgan 1987; Singer 1992). Political economy theory helps explain stratification of people within a given population, something that is very significant when considering disease prevalence and issues such as maternal and child mortality. Political economy theory as it relates to health and health care services is critical to this research for a number of reasons, not the least of which is how much impact the political economy of the region may exert on health status and health care decision making. Hans Baer defines the political economy of health as “a critical endeavor which attempts to understand health-related issues within the context of the class and imperialist relations inherent in the capitalist world system” (H. Baer 1982:1). Morgan defines the political economy of
health as a “macroanalytic, critical, and historical perspective for analyzing disease
distribution and health services under a variety of economic systems, with particular
emphasis on the effects of stratified social, political, and economic relations within the
world economic system” (Morgan 1987:132).

While political economy theory dates back to Engels, Marx, and others, in
the field of medical anthropology it has been referred to as the “political economy of
disease,” the political ecology of disease, the study of the “social origins of illness”
and “historical materialist epidemiology” (H. Baer 1982:2). Baer notes that “under
capitalism, functional health is a necessary ingredient at least during periods of prosperity
and expansion for the maintenance of an efficient labor force” (H. Baer 1982:14). In the
case of the Rathwa and their political economy, healthy workers are necessary for
operations at places such as the Gujarat Mineral Development Corporation. GMDC is in
the Rathwa’s backyard, employing and providing health care for Rathwa workers, but
possibly also having a negative impact on workers’ and villagers health.

The political economy theoretical perspective is helpful in considering the social
origins of disease, health, and healing among the Rathwa for a variety of reasons. If
disease, health, and healing are socially-constructed concepts, how might these
constructions be shaped by the political economy at local, state, and national levels?
How might shifts and changes in the political economy result in waves of alterations in
belief systems pertaining to disease causation and healing practices? In addition, I
consider how social constructions of disease interact with concepts of political economy
within a specific community, Kadipani village.
An agrarian people who subsist primarily by farming, the Rathwa have a large commercial enterprise within the limits of their village—the GMDC mine. Some Rathwa men are employed by GMDC, and through this employment are exposed to economic and social forces controlled and dictated by entities beyond village boundaries. GMDC, which is headquartered in Ahmedabad, operates state-wide in Gujarat, and thus exposes the Rathwa of Kadipani to outside factors such as the inward migration of people to work at the mine, housing construction for non-Adi who work at the mine, and the ebb and flow of commerce within the mining industry.

**Modernization Theory**

While adivasi groups in India may continue many of their longstanding life ways, it appears that with increasing exposure to Western or modern methods of treating illness and disease, as well as government-sponsored programs aimed at addressing health problems related to poverty, malnutrition, or poor sanitation, indigenous methods of healing (ethnomedicine) may not be the first line of defense that it was in the past (Paul 2005; Pinto 2004; Rath 2004; Tyagi 2002). “The decline of the traditional system must be viewed in a much broader framework; the analysis of the far-reaching impact of the western technological progress on social structures in the countries of the present day developing countries” (Nagla 1997:30). With an increased availability of biomedical health care services in more parts of India, ethnomedical practitioners may be falling out of favor with adivasi and non-Adi groups alike as the Indian government implements biomedically-based programs to ameliorate some common and widely pervasive health problems.
Definitions of modernism, modernization, or modernity are varied, contested, and loaded with emotion as well as meaning (Alatas 1972; Attir 1981; Bassand 1981; Deutsch 1961; Harvey 1989; V. P. Singh 1981; Stockman 1981). “In the most general sense, the term ‘modern’ connotes a sense of belonging to the present and an awareness of a past to which people can link and at the same time distantiate themselves” (Arce & Long, 2000b:4). Appadurai notes that “the world in which we now live—in which modernity is decisively at large, irregularly self-conscious, and unevenly experienced—surely does involve a break with all sorts of pasts” (Appadurai 1996:3).

David Harrison defines modernization as “what is ‘up to date’ in a specific location at any given time. It is usually the result of a process of ‘Westernization,’ involving economic, political, social and cultural changes which contrast with a previous ‘traditional’ stability (D. Harrison, 1988:xiii). Further, Harrison states “there is no one modernization theory. Rather, this term is shorthand for a variety of perspectives that were applied by non-Marxists to the Third World in the 1950s and 1960s” (D. Harrison, 1988:1). If there is no one modernization theory, then the field is somewhat open as to how medical anthropologists may interpret what modernization, or modernization theory, means to health care systems, individual and group decisions about health care options, and the evolving role of ethnomedical and biomedical practitioners.

What is fairly consistent among these definitions of modernization is the assumption that modernization is a social process, in which one culture or society adopts the characteristics of another culture or society. Typically, the “giving” culture is more “advanced” or “developed” in some respect than the “receiving” culture. A typical
example is the perceived influence of countries of the West (America and Europe) on those of the East (Asia). The introduction of “Western” biomedicine into India has brought about changes in the provision of health care services throughout the country, including impacting peoples’ choices about when to access ethnomedical health care services and when to access biomedical health care services. The “modernization of Ayurveda, for example, can be considered a process in which modern institutional forms reshape patients’ and practitioners’ conceptions of the body” (Langford 2002:13).

The rubric used to determine who or what is modern varies. Berman, quoted by Harvey, states, “To be modern is to find ourselves in an environment that promises adventure, power, joy, growth, transformation of ourselves and the world—and at the same time, that threatens to destroy everything we have, everything we know, everything we are” (1989:10). Bassand’s description of modernization speaks volumes. He remarks, “Modernization—a term loaded with meanings, if ever there was one! It connotes the multiple, more or less interdependent changes that have over taken industrial societies . . . a break with tradition or with all known social and cultural forms of the past” (Bassand, 1981:215). The tensions surrounding the consequences, positive and negative, of modernization exist not only with local communities undergoing development but also within the scholarly and activist literature.

Attir and colleagues, writing of “societal modernization,” note that “no consensus exists as to a definition of modernization;” however, it has certain characteristics such as socioeconomic development, including “increased literacy, greater industrialization and urbanization, and higher living standards” (Attir et al. 1981:197). India has experienced a
considerable amount of development since independence. With increased globalization, there has been a concomitant increase in industrialization, as well as growth in the technology sector. Deutsch, quoted in Attir et al., defines modernization as “the process in which major clusters of old social commitments are eroded and broken and people become available for new patterns of socialization and behavior” (Attir et al. 1981:197). Appadurai postulates that “the dynamics of global cultural systems as driven by the relationships among flows of persons, technologies, finance, information, and ideology” (Appadurai 1996:47) lead to cultural change, what we may refer to as modernization, as all of these flows are modern phenomena.

Alatas, writing on modernization and social change in South East Asia, notes that modernization is attributable to “one basic process, the development and application of modern science” (Alatas, 1972:23). He points to a need to distinguish modernization from Westernization, observing that though “the basic ingredients of modernization are derived from the West, nevertheless it is possible to consider them as autonomous cultural elements which are subject to diffusion without necessarily being accompanied by Western culture” (Alatas, 1972:24).

Stockman observes that, “nearly all modernization theorists have agreed that the process of modernization refers to following in the footsteps of societies like those of the Western world” (Stockman, 1981:233). Western biomedicine has blazed trails in countries, regions, and locales that in the past have not been exposed to its basic tenets, resulting in the diffusion of biomedical health care practices accompanied in part by changes in local systems of belief. Harvey states that “modernism is a troubled and
fluctuating aesthetic response to conditions of modernity produced by a particular process of modernization” (Harvey, 1989:99), that while beneficial in some situations, such as the availability of modern medical care and technology, may also lead to the loss of age-old cultural practices that are significant to the identity of a particular cultural group.

Bassand outlines specific factors pertaining to the process of modernization. These include: “Techno-economic modernization,” which pertains to the effect of science and technology on a country’s economy, and the subsequent changes in its mode of production; “Political modernization,” which looks at the relationship between the government and society, specialization, centralization, and democracy; “Cultural modernization,” a move from traditional to modern, the emergence of the individual, and a culture’s realization of its place in relation to the rest of the world; and, “Modernization of time,” which denotes an “end to the cyclical time of traditional societies” (Bassand, 1981:215).

In terms of ethnography and modernity, Appadurai’s theory of “cultural flows” considers what ethnography needs to look like now, how the politics of ethnography have changed or are changing, and what concepts that have served anthropology in the past need to be re-imagined in response to changes in the world. This reflexive process serves to establish imagination as a social practice that is part of an ethnographer’s work, creating a new mind space for interpreting culture within a modern world. For Appadurai, modernity “is at large” (Appadurai 1996:19), a point which speaks to the constant state of flux within which globality, locality, identity and the nation-state reside.
Appadurai’s five dimensions of global cultural flows: ethnoscapes, mediascapes, technoscapes, financescapes, and ideoscapes provide a framework for interpreting current anthropological phenomena within the multiplicity of “imagined worlds” (Appadurai 1996:33). The construction of the imagined worlds of locality and nationalism are facilitated by one’s exposure to the media, technology, increased mobilization, migration, transformations in ideology, material culture, representation, identity and globalization. The ever increasing reach of globalization has “shrunk the distance between elites, shifted key relationships between producers and consumers, broken many links between labor and family life, obscured the lines between temporary locales and imaginary national attachments” (Appadurai 1996:10). We are part of a morphing modern world that we shape and are shaped by, making us and our culture a product of our own being-ness, a world or reality in which “the conceptions of the future play a far larger role than ideas of the past” (Appadurai 1996:145).

Appadurai offers a theoretical perspective on the pre- and post-colonial experience, as well as identity and modernity. His theory “is not an update of older social theories of the ruptures of modernization” (Appadurai 1996:9), but rather an examination of the everyday factors of life, those cultural flows or units of analysis that are created within the imagination of each of us and interpreted through the lens of our lived experiences. Central to the theory of Appadurai’s “cultural flows” is the premise that imagination is driving the creation, processing, and distribution of information as well as its interpretation, thereby influencing, shaping, and coloring how we see the modern world and navigate its constructs.
Through the “flows of culture,” we may better comprehend how issues such as modern ethnic movements, representation, and identity come to be (Appadurai 1996:157). Placing imagination at the center of this process, and viewing space and time against his “cultural flows” or “scapes,” what results is an understanding of identity that is molded by what is happening now, more so than what has happened in the past. The characteristics or factors that people choose as signifiers to identify or define themselves as individuals, or as part of a group, are as varied as the people and the groups themselves. These characteristics can be tied to, or indicative of, local, national, regional, political, ethnic, racial, sex, gender, religious, or other affiliations. What is crucial is that self and/or group identity speaks in some way to how an individual or group sees themselves in their daily lives, as well as a part of their locality, nation, or the world.

Appadurai notes that “conceptions of the future play a far larger role than the ideas of the past in group politics today” (Appadurai 1996:145). Since “modern nationalisms involve communities of citizens in the territorially defined nation-state who share the collective experience” (Appadurai 1996:161), it follows that the local, neighborhood, and national identities of the Rathwa would be a collection of who is living in Kadipani, what they are experiencing, and what they are being subjected to via cultural flows such as ethnoscapes, ideoscapes, technoscapes, mediascapes, or financescapes. These self and group generated “scapes” exert an influence that may be subtle and diffuse, a normal part of the mundane world, comprised of hard and soft cultural traits that result in a gradual transformation or revised definition of the local or national imagined world and reality. Each of Appadurai’s “scapes” contributes to the
interpretation of modernity—what is it, where it came from, how it got here, and where it is going.

Appadurai’s theory on the production of locality and neighborhood involves a degree of internal colonization, an experience in which what is turns into what will be, while what will be is influencing what is. This position is one of introverted contextual influence and analysis, a circular model for explaining how identities are created on various levels, which then in turn influence changes on multiple levels. He draws from the context within which change evolves, as well as considering how the evolution creates context itself. For the Rathwa, one way to maintain their identity as an adivasi group is to preserve certain cultural beliefs and practices that distinguish them from other adivasi groups.

In the case of health care in India, the increasingly rapid diffusion of scientific approaches to diagnosis and treatments, as well as increasingly available technology, have led to situations where, via various forms of technology such as computers, doctors may perform virtual examinations of patients who may be hundreds of miles away. Even with these advances in technology, Baer notes that “more people in the underdeveloped capitalist nations seek the assistance of traditional or folk healers than that of the agencies of cosmopolitan medicine” (H. Baer 1982:15). This appears to be the case with the Rathwa, some of whom hold fast to their traditional healing and health care practices, including the use of faith healers and home remedies prepared from locally-grown medicinal plants.
Modernization is a viable theoretical approach for explaining the evolution of health care systems in India today, or any country for that matter. The mere increase in available technology such as cellular mobile phones and computers has greatly impacted delivery of health care, as well as the choices people have for health care services. Ever increasing globalization, especially in India where the technology sector is expanding, has resulted in cultural changes across the board, not just in the health care arena.

**Feminist Theory, Adivasi Women, and Health Care**

Much has been written across disciplines on health status as it relates to gender, specifically that of females (Barroso, 1994; Candib 1994; Dan 1994; Hamilton 1994; M. Harrison, 1994; Himmelgreen et al. 1991; Lorber 1997; Lupton 1994). Lupton (1994) notes the various “waves” within the feminist movement and feminist theory as they relate to the evolution of how women, health, and biomedicine have been conceptualized over time. Biomedical and non-biomedical concepts of the female body, its ability to reproduce, the power behind this, as well as the limitations imposed by it, have been critical to developing an understanding of placement of women within the context of biomedicine, health care, and reproductive technologies.

Lupton (1994) takes a political economy perspective of women and power, within the framework of the woman as patient and health care recipient and the doctor as health care provider. I was curious as to what power Rathwa women have over their own bodies in relation to issues such as contraception, childbirth, health care in general, and their role in the health care decision making process for themselves and their family members.
Feminist theory may help explain who receives what type of health care and when, as gender is a significant factor in Indian culture. Concepts of the female body, the view of women as those responsible for reproduction, as well as the perceived power behind this, or the limitations imposed by it, have been critical to developing an understanding of placement of women within ethnomedical and biomedical healing and health care practices. Lupton writes of the political economy perspective of women and power within the framework of the woman as patient and health care recipient and the doctor as health care provider (Lupton 1994:107).

My interest lies with what perceived or real power Rathwa women may have over their own bodies, as well as those of their family members, when, as the primary keeper of the home and family, they are faced with having to seek health care for themselves or someone else. Beyond health and home, Indian women’s role in development is also critical to this examination and analysis as this project is framed within the local political economy. Kabeer notes that “one way of charting the emergence of women as a distinctive category in development discourse is to monitor their changing significance within the policy declaration and institutional structures of the major development agencies” (Kabeer 1994:1). The progression of theories pertaining to women, health, and development illustrates a shift in the role and place of women.

Feminist theory provides a perspective not found in other theoretical approaches due to its focus on gender and gender-related issues such as the division of labor in the home, property ownership, and childrearing responsibilities. While feminism and feminist theory each have multiple meanings, some of them negative, Moore believes that
“feminist anthropology has the clear potential to speak to fundamental theoretical issues within the discipline of social anthropology” (H. L. Moore, 1988:196). In the case of this research, I consider the responsibility of Rathwa women in health care seeking behavior, as well as health care decision making, within the context of long-defined gender roles.

If Rathwa women take part in health care decision making, or the provision of health care in the home in the form of home remedies, what perceived responsibility might they hold for failed health care-related decisions or interventions? If a home-based cure does not work, is the woman who administered the cure at fault? Conversely, if a woman took a family member to a particular health care provider and the treatment administered was unsuccessful, who was perceived by others to be at fault, the woman or the health care provider?

Summary

Prior research indicates that there is a pressing need for anthropological research that focuses on the intersection of ethnomedicine and biomedicine within Indian adivasi culture (Basavanagouda 2004; S. Basu 1992, 1996; R. K. Kar 1993; Lamba and Mehta 1995; Nayak and Babu 2003; Tyagi 2002). Also needed is an examination of how a pluralistic system of health care that includes ethnomedical as well as biomedical health care services impacts household health care decision making. Absent from the literature is sufficient research pertaining to the medical training and competence of those indigenous or traditional healers who practice folk medicine, as well as evidence of collaborative efforts between ethnomedical and biomedical practitioners (S. K. Basu

My research examines Rathwa traditional health care practices in the face of increasing health care-related options. Rathwa health care-related decisions are being increasingly influenced by outside forces that are impacting what they should do and when, such as in the case of government-sponsored health care programs. While many cultural groups have pluralistic health care systems available to them, what is distinct about the Rathwa is that they are now at a crossroad between tradition and modernity. Tension appears to be developing between what is traditional and what is modern, including the role of their bhouas, or faith healers. The bhouas existence depends on faith, and it appears that peoples’ faith in the faith healers are being shaken. Perceptions of the bhouas are shifting, as are perceptions of those who seek their services. Are people considered “country” or “backward” if they do not choose modern health care services over traditional? How will this questioning impact group identity? Might it be as Appadurai suggests, that “the world in which we now live . . . surely does involve a general break with all sorts of pasts” (Appadurai 1996:3)?
CHAPTER FOUR

ETHNOMEDICAL AND BIOMEDICAL HEALTH CARE
AND HEALING SYSTEMS AND PRACTICES IN
KADIPANI AND KAWANT

Introduction

In this chapter ethnomedicine and biomedicine are defined. I discuss the various ethnomedical and biomedical health care systems and their respective health care practitioners in India, including an explication of the pluralistic system of health care services available in Kadipani and Kawant villages.

Ethnomedicine and Biomedicine

Medicine may be defined as “the science of diagnosing, treating, preventing or alleviating disease and other damage to the body or mind” (Konadu 2007: 77). Current health care and healing practices in India may be classified as ethnomedicine or biomedicine. Ethnomedicine consists of health-related beliefs and practices of indigenous groups. Ethnomedicine may also be referred to as indigenous knowledge, folk medicine, or “non-Western” medicine (Worsley 1982:315). Biomedicine is the application of scientific principles to clinical medicine. It is also known as western or allopathic medicine (Dubos 1977; Hahn 1995; Kleinman 1988).
The continuum of training for health and healing practitioners in India has varied over time, with many ancient texts outlining approaches for dealing with specific diseases. Nagla, writing on medical training early in India’s history, states:

The study of medicine was encouraged in ancient India. During those days one could become a physician by learning one of the following courses: (I) learning theory and practice of medicine as an apprentice to a teacher by living and working with him in his house; (ii) joining a Gurukula, a residential school situated in the forests away from human habitation; (iii) attending classes at higher training institutes such as Taxila, Kashi or Nalanda. (Nagla 1997:25)

It is possible to find a combination of ethnomedical and biomedical health care systems in full force in many countries throughout the world, many of which manage to successfully respect and complement each other in their care and treatment of patients (Desai 1980; Kleinman 1980; Worsley 1982). India and China both have longstanding histories of healing practices from ancient times. In India it is Ayurveda; for China it is Traditional Chinese Medicine (TCM).

Every culture “has an ideology or fundamental framework used to interpret and respond to the historical, socio-political, cosmic, and temporal environment (Konadu 2007:19). Since “the understanding of sickness and the response to sickness through healing vary greatly from time to time and place to place,” and is “fundamentally shaped by historical and cultural circumstances” (Hahn 1995:1), it is imperative to the examination of health care practices that time and place be an integral part of the analysis. Recognizing that the “evolution of medicine is a long story, stretching from prehistoric to modern times” (U. P. Sinha 1994:151), and that it encompasses many different treatment modalities that have been richly documented, it is logical that the examination of any
society’s beliefs about health care and healing would include an analysis of all those systems that directly impact the health status of the population.

Anthropological surveys of healing and health care practices and systems reveal that “since antiquity, humans had some rudimentary systems of medicine to ameliorate physical sufferings and disease, in order to lead a productive socio-economic life” (R. K. Kar 1993:158), and that a wide variety of methods for addressing health issues have developed over time. Healing and health care practices have evolved and developed over time in response to scientific discoveries, technological developments, and cultural change.

Medicine “besides being a process of cure is also concerned with the patient’s culture, his personality, his norms and values (Nagla 1997:93). Addressing and “treating bodily ills takes place, in any culture, within a ‘metamedical’ framework of thought” (Worsley 1982:315), which varies worldwide and is subject to interpretation based on cultural beliefs and practices within a specific society. Most importantly, the “ways in which we perceive and interpret health and illness, and seek and deliver care, are inextricably bound up with cultural norms, beliefs, and values, as well as with social structure and environmental conditions” (Loustauau and Sobo 1997:1). In India, as elsewhere, there may be multiple treatment approaches for any one sickness or disease; how a health care recipient or other health care decision maker arrives at a choice of treatment, or a combination of treatments, is culturally-based, and tied to local beliefs about health, healing and sickness (Basavanagouda 2004; S. Basu 1992; Langford 1999; Nayak and Babu 2003; Tyagi 2002).
Health, Sickness, Illness, and Disease

Every culture, “irrespective of its simplicity and/or complexity has its own notion regarding health and health seeking behaviour” (R. K. Kar 1993:158). Hahn posits, “if the meaning of ‘sickness’ varies widely from one cultural setting to another, what then, do cultures have in common that might be called ‘sickness?’” (Hahn 1995:5). Is it the way those that are sick behave, or how they are treated by others? Is it the community’s response to sickness? Is it how sickness or disease is treated? Or is it the process an individual or group goes through when deciding how to treat a specific sickness or disease?

Sickness, or illness, “refers to how the sick person and the members of the family or wider social network perceive, live with, and respond to symptoms and disability” (Kleinman 1988:3). Sickness, which is a very personal phenomenon when it happens to someone, may also be a group phenomenon because the beliefs surrounding a particular sickness are typically formed within a specific cultural group. According to Harwood,

People who have been raised in an ethnic collectivity—that is, a group with common origins, a sense of identity, and shared standards for behavior—often acquire from that experience not only basic concepts and attitudes toward health and illness but also fundamental styles of interpersonal behavior and concerns about the world. (Harwood 1981:1)

Hahn defines sickness as “an unwanted condition in one’s person or self—one’s mind, body, soul, or connection to the world. What counts as ‘sickness’ is thus determined by the perception and experience of its bearer, the patient” (Hahn 1995:5).

Disease differs from illness in that disease is a biomedical phenomenon, the “kinds of disorder distinguished on the basis of biological facts, with physiological,
psychological, and anatomical criteria of abnormality” (Lewis 1993:99). Illness pertains to “those corresponding changes of body or mind that people choose to identify as undesired and abnormal, the experience and meaning of perceived disease” (Lewis 1993:99). Disease may imply “submission to the official medical system designed to address it” (Loustaunau and Sobo 1997:130). Healing may be easier to define in that it is simply “the redress of sickness” (Hahn 1995:7).

Health is defined by the World Health Organization as “a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity” (WHO 2007). This definition, which was adopted April 7, 1948, has not been modified since. Lieban defines health and disease as “measures of the effectiveness with which human groups, combining biological and cultural resources, adapt to their environments” (Lieban 1977:13). Dubos notes the difficulty inherent in defining disease, but settles on the implication that disease is “any state, organic or psychic, real or imaginary, that disturbs a person’s sense of well-being” (Dubos 1977:32).

Since the “antiquity of disease is established beyond dispute,” it follows that “a parallel, ancient emergence of healers, the unique individuals to whom their compatriots turned for assistance and direction when serious illness or dysfunction disrupted the ordinary course of life” would also emerge (Wood 1979:291).

A key point when studying individual or group decision making processes pertaining to healing and health care is that “the societal belief in a certain therapy, be it indigenous, traditional or cosmic contributes substantially in his recovery” (Nagla 1997:93). This factor may greatly influence which health care practitioner, be it ethnomedical
or biomedical, is accessed first, which is accessed last, and who receives what treatment when (e.g., sick male wage earner before sick non-working female or child).

**Medical Practices in India**

In India “there is an immense heterogeneity of medical beliefs and practices all over the country” (Paul 2005:259), with adivasi and non-adivasi groups alike having access to ethnomedical practitioners such as shamans, priests, herbalists, and untrained, self-appointed healers, as well as biomedical practitioners whose approach to healing is scientifically-based, and typically backed or supported by the government. Health “to a tribal community by and large, is a function of the interaction between socio-cultural and socio-biological practices, the genetic attributes and environmental condition” (Paul 2005:258). Importantly, there are “many tribal health practices, which are highly beneficial and which can revolutionize treatment processes, even modern medicine” (Nayak and Babu 2003:308).

Joshi, writing on health care systems in India, notes that “the tribal areas in general are marked by poor coverage in health care” (Joshi 2004:403) with inconsistencies in service such as limited availability, poorly trained practitioners, or practitioners who are self appointed, lacking the credentials to properly care for the sick and diseased (Langford 1999). Many adivasi communities are “facing extinction due to endemic diseases” (S. Basu 1992:14) which frequently could be prevented.

In “pre-Independent India . . . the dominant system of medicine was the traditional system which had no preventative characteristics and its effectiveness for controlling diseases was very slow and inadequate” (Nagla 1997:60) resulting in long standing
practices which to this day do not always adequately meet the health care needs of the population. S. K. Basu, who writes extensively on adivasi health in India, observes that,

There are more than 400 tribal groups in India who are exposed differently to the various climatic and environmental stresses/strains and are characterized by their individual socio-economic, socio-cultural and socio-biological set up. The health of these tribal groups is as such a function of the interaction between socio-cultural practices, genetic characteristics and the environment conditions. The widely varying prevalent health practices, use of indigenous herbal drugs, taboos and superstitions are also responsible for determining the health behaviour and health status of the tribal groups. (S. K. Basu 1994a: v)

Culturally-related factors such as penning livestock within the home, poor nutrition due to dietary sanctions, and the belief in supernatural causes of disease, all may result in sickness and disease, which may in large part be preventable (Basavanagouda 2004:282). This could be accomplished via the establishment of culturally appropriate and specific intervention and education programs, and “formulating effective need-based health care strategies among these vulnerable tribal groups” (S. Basu 1992:15).

India is a country of approximately 1.12 billion people (CIA 2007) with a history reaching back 5,000 years (Walsh 2006:xiii). Over time, it has developed a number of indigenous and scientifically-based healing methods, the most notable of which is Ayurveda. Nagla, writing on the history of medicine in India states,

During the Atharvavedic period . . . there existed two main types of healing art and its adherents. The first type largely depended on incantations of magical verses and sacrificial practices to bring about cures; the second type while using magical formula, depended more on the empirical-rational use of herbal and other medicaments. (Nagla 1997:23)

Jaggi observes that “the practice of medicine among tribal people and villagers today, follows the same pattern it did two thousand years ago” (Jaggi 1973:xiii) with beliefs that
illness is caused by evil spirits, ghosts, witchcraft and sorcery. This continuity of belief over time about health care and healing practices is significant to the examination and analysis of current health care systems in India.

The World Health Organization “has set the target of Health for All by 2000 AD. The objective of this global declaration is to lead the world signatories to the road of progress” (Nagla 1997:7). The Indian government, as “one of the signatories to the 1978 U.N. declaration ‘Health for All by the year 2000 A.D.’” (Tyagi 2002:35) has made an effort to increase the availability of biomedical health care services to tribal populations throughout the country (Paul 2005). Tyagi, reflecting on the fact that India is one of the “signatories to the U.N. Declaration of Health for All,” observes that “this goal is difficult to achieve unless we do something extraordinary” (Tyagi 2002:35). That “something extraordinary” could include an examination and analysis of the relationship between ethnomedical and biomedical health care systems.

The impact of a society’s cultural beliefs about health and sickness, as well as individual and group decision-making processed, is significant to the planning and provision of health care services. Of increasing significance is the co-occurrence of two different health care systems (ethnomedical and biomedical) providing services for the same patient, which may sometimes be oppositional, and other times collaborative or complementary.

The year 2000 has passed, as has the WHO’s goal for achieving health for all by that date. People in many countries, including India, and more specifically adivasi groups, are still waiting for improvement in the health care they receive (S. Basu 1992,
The scope of most health care services available and/or accessible to adivasi groups in India at times is difficult to accept when we consider that “among the great achievements of humankind in the twentieth century have been the enormous improvements in health worldwide (Findley 1992a:ix). Unfortunately, the “enormous improvements” in health care noted above by Findley have not yet permeated all regions of the world.

Five primary systems of health care are prominent in India today, each with its own particular methods for promoting health or diagnosing and treating sickness, illness, or disease. Some of these systems of health care are based more on science, others are focused on indigenous knowledge, faith and/or religious beliefs. These five primary medical systems include:

1. **Indigenous healing**, or folk medicine, which is frequently found among indigenous or adivasi groups, may be referred to as a type of ethnomedicine.

2. **Ayurveda**, a holistic system of health and healing that dates back to ancient India, is also considered a form of ethnomedicine, especially in the United States.

3. **Homeopathy**, a system based on the concept of “*Similia Similium Curantur,*” the belief that like cures like, which escapes classification as either ethnomedicine or biomedicine; might best be classified as “alternative medicine.”

4. **Unani Tibb**, an ethnomedical healthcare practice based on a blending of Ionic (Greek) and Islamic methods of healing.
5. **Allopathy**, which is scientifically-based biomedicine (Nagla 1997), is also referred to as conventional medicine Western medicine (Hahn 1995; Kleinman 1980, 1988; Konadu 2007), “cosmopolitan medicine” (Loustauanau and Sobo 1997; Rubel and Hass 1996), “clinical medicine” (Loustauanau and Sobo 1997), or “scientific medicine” (Finkler 1998:118).

Increased health care choices may influence culture change, such as beliefs about the causes and treatments of illness. In addition, the introduction of various health care and healing systems may directly impact mortality, disease incidence, and health policy development (Qadeer and Visvanathan 2004). In India, “the planning and implementation of effective strategies for redressing the problem of tribal health needs a critical appraisal from an anthropological perspective” (Nayak and Babu 2003:302), especially in light of the increased choices in health care systems available and the emergence of new health-related concerns.

Ethnomedical methods of healing, such as “shamanism, herbology, faith healing and the relationship between illness and supernatural forces have captured the interest of ethnologists and the public from anthropology’s earliest days” (Rubel and Hass 1996:113). Ethnomedicine has been referred to in the literature as indigenous knowledge, indigenous healing, folk medicine, faith healing, or magico-religious based practices of healing. Ethnomedicine may be defined as “the part of a society’s cultural system concerned with sickness and healing (Hahn 1995:4). In 1968, “Hughes applied the term to ‘those beliefs and practices relating to disease which are the products of indigenous
cultural development and are not explicitly derived from the conceptual framework of modern medicine”” (Rubel and Hass 1996:116).

Folk medicine, a type of ethnomedicine, is “generally used to designate health-related belief and practices of traditional societies . . . it is from folk, or ‘unofficial’ medicine that many patients derive their attitudes, values, and decisions about medical care in general” (Loustauaunau and Sobo 1997:109). Folk Medicine “is frequently classified into sacred and secular parts, but this division is often blurred in practice, and the two usually overlap (Kleinman 1980:59). Jaggi, writing about folk medicine and its practitioners in India states,

There are several types of people in the village who practice the healing art. They are grocer-herbalists, priests, exorcists, removers of evil eye, those who make charms, amulets and talismans, snake-bite curers, boil and wound experts, those who put slave in the eyes, thornpullers, barber-surgeons and village diaś who deliver babies. (Jaggi 1973:210)

India “is a country rich in indigenous herbal resources and traditionally the vast population is accustomed to the use of herbal folk medicines” (Shah 1982:294). These may include plants found locally such as neem (Azadirachta indica) which is known for its anti-malarial properties (Shah 1982; Sivarajan and Balachandran 1994). Folk medicine, which “was practiced during the Atharvedic period . . . is still practiced in contemporary times” (Nagla 1997: 41), by “indigenous practitioners of traditional medicine” who “tend to emphasize not the universality of their therapies but their cultural or regional specificity” (Last 1996:377).

The folk sector of the health care system comprises non-professional, non-bureaucratized “specialists” . . . part-time, non-registered practitioners functioning within the context of village organization. . . . Their roles are validated by social
recognition and regulated by the community conventions, the caste and village leadership. (Nagla 1997:41)

The “indigenous form of medicine has endured centuries of tests and experimentation and does not deserve the scorn and disbelief with which it is greeted in the antiseptic halls of ‘modern, sophisticated and highly sensitive, technologically precise’ therapeutical overtures” (Lamba and Mehta 1995:4).

Since cultures vary greatly, it is logical that a culture’s healing practices and beliefs about sickness and health would also vary considerably. Systems of healing within cultures develop over time and in response to needs exhibited by the population. The use of local resources such as plants, animals, or minerals for healing purposes is seen as indigenous knowledge, something developed and refined locally, with many some practices lasting for many generations. Indigenous knowledges “deal with the experiential reality of the world. They are forms of knowledge that reflect the capabilities, priorities, and value systems of local peoples and communities” (Dei et al. 2000:19).

**Ayurveda—India’s Ancient Form of Ethnomedicine**

Ayurveda “is treated by anthropologists as an indigenous system of medicine that is deeply ingrained in Indian society” (Langford 2002:53). Ayurveda, a “classical system of Indian medicine” (Gupta: 1998:158), is “one of the oldest scientific medical systems in the world” (Nagla 1997:36) extending back to the Vedic ages (1500–800 B.C.) (Sivarajan and Balachandran 1994). The term Ayurveda, or “life wisdom” (Ninivaggi 2001:xi) is “composed of two words—‘Ayur’ and ‘Veda’ which put together literally mean ‘Science
of Life” (Nagla 1997:36). In India, “Ayurvedic medicine has been officially recognized by the state since 1962” (Worsley 1982: 318), and is widely practiced today, with private clinics in villages offering treatment for a variety of maladies.

Ayurveda is a “generic” term for Indian traditional medicine which includes the use of “herbal medicines, minerals, animal products, food, massage, air, water, heat, earth, surgery, detoxification and tonification to bring about health” (Pole 2006:xix). It is the “Indian sastra or discipline directly concerned with health and healing” (Fields 2001:36), with prevention of disease being a core belief, as opposed to the treatment of disease. It is a purpose driven system of medicine that focuses on life principles and routines that are essential to maintaining good health. Ayurveda may be considered an ongoing part of a healthy lifestyle, not something that is used only when faced with sickness.

In the Ayurvedic system of medicine, “nothing in the world is considered to be separate from anything else. Everything is interconnected” (Pole 2006:17). Ayurveda’s comprehensive whole-person approach to health and healing creates a partnership between practitioner and patient, with the patient being actively involved in his or her treatment, through “intentional and sustained self discipline, perseverance, and taking an active, personal role in matters of health and overall lifestyle” (Ninivaggi 2001:xv).

Ayurvedic medicine does not just treat illness, but seeks to prevent it. Ayurvedic medicine is holistic in its approach, taking into consideration the physical, metaphysical, and spiritual aspects of health and well being. Its teachings include philosophy, mythology, diet, and yoga, among other things, all aimed at helping patients achieve
balance and wholeness in their lives (Mishra 2004a, 2004b; Ninivaggi 2001; Pole 2006; Sivarajan and Balachandran 1994).

Ayurveda is based on “four books of knowledge called Vedas: Rigveda, Samveda, Yjurveda, and Atharveda (4500 to 1600 B.C.)” (Mishra 2004a:17). Information pertaining to health and well being was complied and distilled into three books referred to as “the senior triad (vriddha traya): Charak Samhita, Sushrut Samhita, and Ashtang Hridaya Samhita” which provide information and guidance issues related to health, disease, material medica, pharmacology, and much more, all aimed at enhancing life through health and hygiene (Mishra 2004a:17).

There are eight branches to Ayurvedic Medicine:

1. Internal medicine, including physiology and pathology (Kaya-cikitsa).
2. General surgery (Salyaphartrka).
3. Eye, ear, nose, and throat disease (Salakya).
4. Pediatrics, including obstetrics and embryology (Kaumara bhryta).
5. Psychology/psychiatry: psychotherapy, dream analysis, demonology (Bhutavidya).
6. Toxicology (visagara-vaidhika-prasamana).
7. Geriatrics and rejuvenation therapy (Rasayana).
8. Sexology (Vajikarana). (Fields 2001:37)

According to Ayurveda, “good health is based on the equilibrium of dosha (humor), agni (digestive fire), dhatu (seven body tissues), and mala (waste products)” (Mishra 2004b:1). Dosha “is the Ayurvedic term that generally describes our inherited traits, individual characteristics and tendencies” (Pole 2006:20). There are three dosas: vata (principle of propulsion), pitta (principle of transformation), and kapha (principle of consolidation). The dosas are used to describe a person’s bodily constitution. When
there is an accumulation of a particular *dosa*, ill health results. The goal of Ayurvedic medicine is to bring balance back into the body.

Historically, the Ayurvedic system of medicine “along with its teaching and practice remained in low key sometime between 1200-1800 A.D. when the Muslims entered India as conquerors” (Nagla 1997:26), resulting in an increase in medical practices based on Muslim belief systems. Langford (1988, 1995, 1999, 2002, 2003), who has conducted extensive research on the practice of Ayurvedic medicine in India, today tells of a brief period during which Ayurveda was sponsored by the British government during colonization, that was then followed by a surge of European-based biomedicine and a suppression of the practice.

As a long standing, culturally-based practice of healing, Ayurveda has experienced resurgence, and established a strong hold in the continuum of health care practices available to adivasi and non-adivasi groups in India today. Over time, Ayurveda became more prominent, especially of late, and is quite possibly the best known ethnomedical system of health care practiced in India today. Langford notes that “researchers have often suggested that Ayurveda has persisted, despite the enormous competition from biomedicine, precisely because it encodes deep-seated cultural experiences and values that extend beyond medical diagnosis and cure” (Langford 2002:53). Currently, Ayurveda it is one of four main systems of health care available throughout India, available to adivasi and non-adivasi groups alike.
Homeopathy: An Imported Form of Ethnomedicine

Homeopathic medicine was developed by German physician Dr. Samuel Haheneman (1755-1843) during the 18th century. Haheneman believed that “remedies which, in large doses, could create a particular set of symptoms, could in minute doses . . . relieve those same symptoms” (Cummings and Ullman 1984:ix). Haheneman, while experimenting on himself with quinine, a malaria treatment, discovered that he experienced symptoms similar to those of patients with malaria (E. Ernst and Hahn 1998:ix).

From this experimentation and additional trials, Haheneman claimed confirmation of his hypothesis that like cures like. He went on to develop methods for preparing homeopathic remedies for a variety of maladies. These methods involved the dilution of remedies to the point of barely being able to discern the presence of the remedy in a solution that had been diluted many times and shaken vigorously. The combination of diluting and shaking a remedy is what made it a viable treatment.

The word homeopathy is “derived from the Greek words ‘homoios’ meaning like or similar and ‘pathos’ meaning suffering.” The primary principle of homeopathy, the Natural Law of Cure, states “like cures like (Similia Similibus Curantur)” (Nagla 1997:48). The American Institute of Homeopathy Standards of Practice defines homeopathy or homeotherapeutics as,

A unique scientific system of medicine predicated on the Law of Similars, “Similia Similibus Curentur,” or, “let likes be cured by likes.” Although this principle was first postulated by Hippocrates, it had its first practical application in 1796 when Samuel Hahnemann established Homeopathy. (American Institute of Homeopathy [AIH] 2007)
Homeopaths “view the body as sustained by a vital energy. The task of the homeopath is to stimulate this vital force and allow healing to take place” (Furnham 1998:191), “based on the principle that the best therapy for any given patient is a single medicine whose adverse effects closely mimic the symptoms of the illness” (Skinner 2001:9). The homeopath’s role in the healing process is to be “cognizant of the total or holistic nature of physiological disorder or disease and the necessity of a holistic approach to diagnosis and treatment” (AIH 2007).

Homeopathic medicines, which are made from plants, minerals, metals, synthetic chemicals and other substances, are developed to address a specific symptom, or set of symptoms, which have been revealed during an extensive interview and examination of the patient. Symptoms are ranked (common, general, concurrent, and local) and a remedy is selected, typically “one medicine at a time” though “complex homeopathic medicines . . . several medicines mixed together” may be used (Skinner 2001:19).

Homeopathy is based on “principles” that guide the diagnosis and treatment of imbalances in the body, which if left unchecked, eventually lead to sickness and disease. The principles, as stated by the American Homeopathic Association include:

1. Maintenance of normal health depends on efficient physiological functions as controlled by a complex regulating mechanism designated by the term homeostasis.
2. When threatened by disorder or disease, all living organisms exert an effort to maintain or regain normal physiological equilibrium.
3. Recovery from disease is dependent on the inherent vital force of the organism, i.e., its ability to re-establish homeostasis.
4. In general, most human disorders possess two components, the psyche and the soma, which produce emotional, mental, and/or physical symptoms.
5. The human organism, by virtue of such inherent properties as sensitivity, irritability, and reactivity, may be provoked into some physiological responses
by various types of physical, chemical, or biological incitants. When caused by a drug, this is regarded as an iatrogenic response or reaction.

6. A substance which is capable of evoking certain symptoms when administered to an apparently healthy human being under controlled conditions, may become a potentially effective therapeutic agent when prepared according to the standards of the Homeopathic Pharmacopoeia, and administered in accordance with the principles of the Homeomethodology. (AHC 2007:n.p.)

Considered an alternative or complementary form of medicine or therapy in the United States, homeopathy is one of four systems of medicine available to both adivasi and non-adivasi populations in India today. The practice of homeopathy “sneaked into India stealthily and traveled to Calcutta through Lahore, the first place of its exposure, patronage, grooming and interaction” (A. Kumar 1998:62), having been “practiced . . . by some of the Europeans before the mid-nineteenth century (Nagla 1997:49).

Practitioners of homeopathy, or homeopaths “define health as a state of freedom existing on three interrelated levels: the physical, the emotional, and the mental” (Cummings and Ullman 1984:17). When a patient sees a homeopath for treatment he or she will undergo a thorough examination and interview with the clinician to determine what is going on with the patient. This is a somewhat lengthy process as the homeopathic practitioner needs to know about what is going on with the entire person. Skinner notes that,

The pattern of physical symptoms as well as alterations in cognitive and emotional functioning of a patient are evaluated holistically by a clinician. The complete symptom set is then matched with the complete symptom set of a group of healthy subjects who have all taken a medicine as participants in an experimental trial. The medicine that is most parallel to the person’s state of illness is then prescribed as an ultradilute aqueous solution, or as sugar pellets medicated with a solution. (Skinner 2001:4)
The interview is very critical to the accurate appraisal and diagnosis of the patient’s condition, as homeopathy treats the entire person, rather than just addressing a symptom or cluster of symptoms (Skinner 2001). Regarding the practice and efficacy of homeopathy, Reilly writes that “medical care must now consider the implication that enhanced human healing, with less side effects, can be achieved with better time and therapeutic consultations” (Reilly 1998:118), something frequently absent in biomedical systems of health care and healing.

Whiteford has studied the use of homeopathy in a community in Oaxaca, Mexico. Whiteford (1999) interviewed 174 male and female patients, looking for gender differences as to the efficacy of homeopathy as a treatment. Whiteford found that “homeopathic physicians and care fit nicely into this panorama of curing alternatives. Many people feel that illnesses that are not responsive to Western medicine are often effectively treated by homeopaths” (Whiteford 1999:70), having been practiced in Mexico for about 150 years. He also found that women reported more frequently than men that homeopathy was effective in treating the malady for which they sought treatment.

**Unani Tibb: An Ethnomedical Blend**

Unani Tibb, which has also been referred to in the literature as Yunani medicine (D. Kumar 1997:180), is an indigenous practice of health care and healing practiced today in India as well as other parts of South Asia. Unani “means Greek [Ionnian] and Tibb, from the Arabic, means medicine” (Sheehan and Hussain 2002:123). Unani “has been part of the Indian medical repertory for many centuries” (Liebeskind 2002:59), though no
one individual has been credited with its establishment. Unani is based on Greek medicine, though Arabic medicine is considered its “progenitor” (Sheehan and Hussain 2002:123). Unani has been influenced by practitioners in West Asia and the Middle East, specifically Ibn Sina, a Persian practitioner.

Unani is based on a humoral medical system, which emphasizes the bodily humors. Health occurs when the humors are in balance. Imbalance results in a variety of diseases. Each individual’s personality is said to be determined by one of the bodily humors. Unani medicine is practiced by a hakim (physician) and is found predominately among Muslim or Islamic populations within South Asia. The philosophical focus of unani is that humanity and nature coexist, with humanity adapting to accommodate changes in nature such as climate, temperature, etc. (Sheehan and Hussain 2002:125).

Balance among the bodily humors is critical to good health. The hakim, when examining a patient, will look for imbalances within the patient, conducting an examination which includes discussing with the patient his or her activities of daily living, problems with appetite, sleep, and specific complaints. Once a diagnosis has been made, treatment will focus on restoring the body to balance. This could include massage, cupping, Turkish bath, diet or drug therapy, as well as many other options, depending on the needs of the patient (Sheehan and Hussain 2002:126).

Liebeskind notes that “there has never been a disciplined and homogeneous community of practitioners on Unani medicine” (Liebeskind 2002:60), with the training and practice of each practitioner varying from somewhat scientific (as it relates to drug therapy) to philosophical. Unani tibb has seen its share of disputes with the biomedical
community as to its place among science-based methods of health care and healing.

Education in unani tibb today consists of training similar to that for biomedical practitioners, with students obtaining a bachelor of Unani Medical Science (B.U.M.S.). Students may then register with the state government and practice unani medicine (Sheehan and Hussain 2002:130).

**The Biomedical System of Health Care**

Allopathy, which is also referred to as biomedicine, conventional medicine, Western medicine (Hahn 1995; Kleinman 1980, 1988; Konadu 2007), “cosmopolitan medicine” (Loustauanau and Sobo 1997; Rubel and Hass 1996), “clinical medicine” (Loustauanau and Sobo 1997), or “scientific medicine” (Finkler 1998:118) is one of the primary health care services available to adivasi and non-avadi groups in India today. The “bio” in biomedicine “suggests that health and wellness are physiological issues, which are the focus of the medical model” (Loustauanau and Sobo 1997:3). Allopathic or biomedicine (the terms may be used interchangeably), is “generally believed to operate in a realm of ‘facts’ . . . where illness is thought of as a ‘natural’ occurrence” (Rhodes 1996:166)—everyone gets sick at some point in their lives. Allopathic medicine is:

> What most of us understand to be “standard” or “regular” medicine . . . legitimate, true and credible . . . it is that practice which combats disease by use of remedies producing effects different from those produced by the disease treated, including the use of all measures that have proved to be of some value in the treatment of disease. (Nagla 1997:46)

Allopathy “focuses on disease control and approaches body parts as discrete and mechanical” (Dei et al. 2000:172). Disease “can be defined as an ‘impairment of health and well-being.’ Indeed, good health would be freedom from disease” (Mascie-Taylor
Allopathic medicine is found around the world and may be considered the gold standard by many due to its scientifically-based principles and laboratory tested treatment modalities. A significant point about biomedicine is that, “Because of the disease orientation of biomedicine and the tendency to medicalize or reduce problems to the organic level, recommendations for diagnosis and treatment did not, until recently, begin to include consideration of cultural beliefs, values, or practices” (Loustauinu and Sobol 1997:145).

Biomedicine “evolved out of a tradition of service to suffering humanity” based on the Hippocratic Oath to do no harm (Loustauinu and Sobol 1997:126). The evolution of biomedicine in India is disputed. Worsley states that Western medicine “had spread via the Arabs, to India, by around 750 AD” (Worsley 1982:317), while Nagla credits the British with the introduction of allopathic medicine to India (Nagla 1997:121). Kumar notes that medical science “was introduced from the top by the colonial government on and above the traditional medical sciences” whereby they “trimmed, shaped and conducted the growth of Western medical science to attend, promptly and appropriately, to the callings of the Empire” (A. Kumar 1998:17). The establishment of the Indian Medical Service (IMS) was an effort to regulate the provision of medical services and to keep Indian nationals who practiced biomedicine in a subordinated position to the Anglos.

Whiteford observes that “For a variety of historical and cultural reasons, the tensions between allopathic (or biomedical) and alternative medical models found in the United States have not been so widely adhered to in much of the rest of the world”
Thus in non-Western cultures, there is greater acceptance of what the West refers to as “alternative” or “complimentary” medicine, in part because they have developed their own systems of healing that have endured for centuries, and may be more readily accepting of newer, more scientifically-based methods, as long as these do not conflict with traditional practices. Today, allopathic medicine is one of the primary health care options available, to varying degrees, to adivasi and non-adivasi populations alike.

Summary

The continuum of ethnomedical and biomedical health care-related services available in India, including in Kawant and Kadipani villages where the Rathwa live, work, and seek health care-related services creates a situation where consumers, or patients, may be swayed by various factors when making health care-related decisions. India has a long history of providing different ethnomedical health care and healing options, such as the use of traditional healers, medicinal plants, and ancient practices such as Ayurveda and Unani Tibb. Biomedical health care services are also available, creating a dichotomy between traditional and modern, indigenous and scientific. Health care decision making may be influenced by a number of variables such as, individual experience with a particular health care provider, service availability, beliefs about health and sickness, and personal issues such as gender, finances, and transportation.
CHAPTER FIVE

METHODOLOGY

Introduction

This chapter discusses the data collection methods I used for my research, why each method was selected, how my entry into the field was facilitated, sampling techniques for the two populations I was working with (Rathwa and HCPs), and my experiences as a foreign woman in the field, as well as a participant observer, interviewer, and surveyor.

Entry into the Field

My entry to the field was facilitated by Dr. Vijay Shah, my sponsor in India, who is a medical doctor living in Baroda, a city about two hours drive from Kadipani and Kawant villages. Dr. Shah is the medical director of the Indu Blood Bank in Baroda and is involved in a variety of health-related projects in the area. Dr. Shah is a colleague of Dr. Laurence Branch, a professor with the University of South Florida (USF) College of Public Health (COPH). Dr. Branch approached Dr. Elizabeth Bird, Chair of the USF Anthropology department and proposed a project examining health care practices in India. Dr. Bird suggested that I consider conducting my dissertation research with an adivasi group in Gujarat State, India under the mentorship of Dr. Shah.
Once in the field, Dr. Shah introduced me to Ramsingh Rathwa, a Rathwa adivasi and former member of Indian Parliament. Ramsingh Rathwa had been the elected political representative of the Rathwa adivasi of Kadipani in the past. Dr. Shah also introduced me to Ramesh Rathwa, the Sarpunch, or elected local leader for Kadipani village. Each of these men facilitated my entry into the field and my research in Kadipani and Kawant villages in a number of ways, not the least of which included finding a place to live, accompanying me to meetings with local officials, obtaining permission from the Kawant taluka district officer to conduct my research in Kadipani and Kawant, getting copies of local maps and property records for Kadipani, answering my many questions, as well as introducing me to lots of people who could provide me with information pertinent to my research.

**Language Issues**

When I entered the field, I was not fluent in Gujarati, the language spoken by people living in both Kadipani and Kawant. I had received tutoring in Gujarati before I entered the field, and I had a computer-based tool for learning the basics that I practiced with regularly. I also purchased a number of Gujarati phrase books and dictionaries, and working with my tutor, scripted out my introduction, which included my name, where I was from, what my research was, why I was doing the research, and what I was hoping to accomplish. After repeating this script many times during the survey portion of my data collection, I became more comfortable with conversing in Gujarati. For the most part, I relied on translators to help when I communicated with people who spoke only Gujarati. Occasionally, I would meet someone who spoke English—such as some of the HCPs, the
local primary school teacher, employees at GMDC, or young people who received English language training as part of their schooling.

Eventually, I got to the point where I could understand much of what was being said to me, especially when asking questions for which there was a limited range of responses. However, I still had difficulty correctly constructing a sentence in Gujarati in response to their questions to me. I did on occasion make mistakes while speaking Gujarati, saying “bes” (water buffalo) instead of “bas” (stop). This was a minor error compared to one incident in which I was interviewing a woman about how she came to be diagnosed with sickle cell disease. My translator and I were sitting with her outside, all of us seated on boulders. By that point, I had surveyed or interviewed a number of people and had developed some ability to follow the flow of conversation. The woman was telling me how she had to have a caesarean section delivery for her first pregnancy. It was during that period of hospitalization that she was diagnosed with sickle cell disease. She was lamenting how she had much pain after the procedure and how she had not felt the same since then—she believed that her health had deteriorated. I understood some of her Gujarati, but I relied on my translator to translate in detail.

At one point I thought the woman said the Gujarati word for goat “bakaree.” I said “bakaree?” questioningly, now feeling lost in the conversation. The woman tilted her head to one side, said “bakaree?” and laughed so hard she practically fell off the boulder. I realized I had misunderstood. We laughed over my mistake and proceeded with the interview. Days later, while in the village center, I saw the woman’s husband and his brother, both of whom I had met while conducting surveys. Her husband
approached and greeted me, laughing as he told me that his wife had mentioned the “bakaree” story. So my lack of language fluency was sometimes both a technical barrier and an aid to rapport.

Data Collection Methods

Anthropologists “collect data concerning the issues as participants see them” (Loustauanu and Sobo 1997:160), a factor that is critical to collecting meaningful data. When considering the health care and healing practices of the Rathwa, I kept in mind that their concepts of health and sickness, as well as how they treat various illnesses was “a function of the interaction between socio-cultural and socio-biological practices, the genetic attributes, and environmental condition” (Paul 2005:258), all of which can and do impact health care outcomes to varying degrees.

A variety of methods were used during data collection, both in Kadipani and Kawant. Data collected were analyzed using Statistical Package for the Social Sciences (SPSS) versions 16 and 17. My choice of methods was driven by my goal of building rapport with participants, developing a relationship, experiencing their culture, and obtaining data that was as accurate and as meaningful as possible. I believed that a triangulation of methods would be the best way to ensure validity, as I was unsure how factors such as being a foreigner, using translators, and personal bias (recognized or not) might affect not only just data collection, but also subsequent analysis and interpretation. My data collection methods included: participant observation in a wide variety of settings (e.g., public clinic and hospital, private clinics, villagers’ homes, local market [haat], temples, the village center, local shops, primary school, and on the roads within
and around the village); *informal interviews* with Rathwa living in Kadipani as well as HCPs in Kadipani and Kawant; *structured interviews* with ethnomedical and biomedical HCPs in Kadipani and Kawant villages (n = 19); *structured interviews* with a sample of Rathwa living in Kadipani (n = 30); and household *surveys* of Rathwa living in Kadipani village (n = 121).

I began my research by informally asking people “What did you do the last time you were sick?” “What did you do the last time your child was sick?” “What makes people get sick?” These questions led to a variety of responses, some more detailed than others. At times I felt that participants were telling me what they thought I wanted to hear, especially when I spoke with people about issues of concern to the Indian government, such as where babies are delivered. Some participants quickly replied “I go to the hospital” when asked what they do in response to just about any health-related question.

What I discovered over time was that the response “I go to the hospital” was a catch-all phrase for seeing any HCP within the government clinic and hospital compound in Kawant, as well as the GMDC-sponsored dispensary in the center of Kadipani. The government health care service complex in Kawant was a free service that anyone could access, and the health care providers (nurses, one allopathic physician) moved between the buildings seeing or monitoring patients, providing care, and dispensing medications.

**Sampling for Informal Interviews**

Non-probability sampling was used when I conducted informal interviews with Rathwa living in Kadipani village, as well as those seeking services in the private and
public clinics and hospitals in Kadipani and Kawant, or any place where I had access to Rathwa from Kadipani who were willing to talk with me. Convenience sampling was utilized frequently while observing the provision of health care services. I was in the right place at the right time to talk with people about health care and healing. Most people were willing to talk and would tell me about many aspects of their lives.

I was cognizant that some individuals in poor health might not have the means to seek medical treatment (money, transportation, assistance from others, strength/overall health/ability to physically leave the home). I wanted to be sure that I spoke to those individuals in their homes, as they might not seek services from an HCP for a variety of reasons. Choosing not to receive health care, for whatever reason, fits into the equation of my health care decision-making research question.

**Sampling and Research Methods**

Kish (1965, 1987), Sudman (1976), and Alreck and Settle (1995) write of the importance of correctly designing a sampling method, or methods, to be used in a research study. Sudman observes that “whether or not a sample design is appropriate depends on how it is to be used and the resources available” (Sudman 1976:9). He also notes that “data collection should be considered prior to making sampling decisions” (Sudman 1976:15). The data collection methods I selected required me, as the researcher, to be totally engaged in the research process and familiar with the population that was sampled for each data collection method. The combination of research methods enabled me to get to know the Rathwa and the HCPs in a way that may not have been possible if I had chosen other or fewer methods. I was able to learn about each respective groups’
“culture,” as well as observe what they actually do when either providing or receiving health care services, rather than just having them tell me.

Sample Size

Studman states, “a small study well-designed and executed is superior to a large study that has been botched” (Sudman 1976:9). My sample size for each population group (Rathwa adivasi and ethnomedical and biomedical HCPs) was relatively small. The total number of households in Kadipani was 147, of which I surveyed 121. The total population of ethnomedical and biomedical HCPs was approximately 25. I conducted structured interviews with nineteen HCPs. I selected a random sample of Rathwa for structured interviews \( (n = 30) \). My household surveys and structured interviews with both population groups are discussed briefly below and in greater detail in Chapter Seven.

Sample Populations

Samples were drawn from two population groups: (1) Adult male and female Rathwa living in Kadipani; and (2) Ethnomedical and biomedical HCPs practicing in Kadipani or Kawant. Samples were taken for three data collection methods:

1. **Structured interviews** with Rathwa living in Kadipani;
2. **Structured interviews** with ethnomedical and biomedical HCPs practicing in Kadipani and/or Kawant.

Sampling Techniques

I used both probability sampling (utilizing a form of random selection) and non-probability sampling (e.g., accidental, haphazard, or convenience sampling). Probability sampling is defined as a sample “in which every element in the population has a known,
nonzero probability of selection” (Kish 1965:20; Sudman 1976:49). A variety of sampling techniques were used during data collection, each being dictated by the data collection method I was using at a given time. During my pilot study in June 2007, I began searching for key informants via word-of-mouth recommendations, which led to snowball sampling of additional participants. When I returned in November 2007, I used word of mouth, as well as snowball sampling, to locate additional participants for my population of HCPs (Handwerker and Borgatti 1998).

Section I—Key Informants/Participants

_Rathwa Adivasi of Kadipani Village_

To be included in any of the data collection, participants had to: (1) self identify as Rathwa; (2) live in Kadipani; (3) be an adult Rathwa male or female (a person 16 years or older); and (4) agree to be interviewed. An informed consent form approved by the USF IRB was read in Gujarati to each potential participant as the Rathwa neither read nor write any language. The USF IRB waived the requirement for written informed consent for this research. Once the individual understood what was involved and agreed to participate, they were interviewed.

The sampling technique I used for informal interviews with Kadipani villagers in both Kadipani and Kawant was opportunistic and haphazard—I spoke with whomever was willing to talk with me. This was a very efficacious method in that I got to know people in the village, found out who was related to whom, where people lived within the village, what they did for work, the crops they grew, how many children they had, and quite importantly, what they did when they or a family member got sick. I also used
snowball sampling with the intent that a conversation with one key person could lead to a conversation with another key person, such as one of their friends, family members, or colleagues, especially other HCPs, who had information I needed. For the structured interviews with Rathwa, a random sample \((n = 30)\) was taken from the total Kadipani Rathwa household population, information provided to me by local serpunch in the form of property records.

I was concerned about the potential for bias from “errors of non observation” (Kish 1965:527). Prior to beginning my fieldwork, I did not know if foreign researchers had worked in Kadipani or Kawant in the past. There was the potential for non-response due to refusal to participate. I did not know how receptive the Rathwa would be to: (1) allowing me into their homes; and (2) speaking with me about their health care and healing beliefs and practices. In addition, non-response due to people not being at home when I came to their residence was a concern. Visiting the home during the day, I could miss people who were temporarily unavailable, such as when they are away at work, at a medical clinic, shopping, caring for a neighbor or family member, etc. When this occurred, I called back on households (Kish 1965:350). I worked only during daylight hours, as I was advised by multiple people not to be in the village after dark.

**Ethnomedical and Biomedical Health Care Providers in Kadipani and Kawant**

To be included in the structured interview portion of my data collection, individuals had to: (1) be either ethnomedical or biomedical HCPs (e.g., bhouas, Ayurvedic, homeopathic and allopathic doctors; (2) work in Kadipani or Kawant; (3) treat or have treated in the past Rathwa living in Kadipani for any illness at any time; and
(4) agree to be interviewed. An informed consent form approved by the USF IRB was read in Gujarati to each potential participant, as Gujarati was the primary language for all participants. Once the potential participant understood what was involved and agreed to participate they were interviewed.

Section II—Structured Interviews

Structured interviewing requires the use of an interview schedule or questionnaire comprised of questions that structure participant responses (de Munck and Sobo 1998: 260). My purpose for conducting structured interviews with HCPs and the Rathwa was to collect: (1) in-depth information on topics related to health care and healing practices; (2) personal histories, specifically examples of what healing or health care practices have or have not worked in the past; (3) cultural knowledge and beliefs about healing and health care, especially as they relate to indigenous knowledge; as well as (4) a description of health care and healing practices (Lecompte and Schensul 1999a). My HCP and Rathwa structured interview forms had open and closed response questions and were designed to elicit information that would facilitate my understanding of how these two populations conceptualize sickness and health.

Rathwa Adivasi of Kadipani

Structured interviews were conducted with Rathwa living in Kadipani (n = 30). My sampling frame, or list of potential participants, was provided to me by different sources. For the structured interviews with the Rathwa, I used area frames for households (Kish 1965:301). I had a list of who owned what piece of property in Kadipani village, as well as a map of households within Kadipani. I randomly sampled Rathwa households
for my structured interviews from the property list. There were 147 properties on the list. I wanted to interview 30. Assuming a 60 percent cooperation rate, I selected 50. One hundred forty-seven divided by 50 is 3, making my sampling interval 3. I selected a random number between 1 and 3, and that was my random start on the ordered list of properties.

The structured interview instrument contained 26 open and closed response questions designed to elicit information about health care and healing practices as well as health care-related decision making. Interviews took place at the participant’s residence and lasted approximately 30 minutes, depending on how lengthy the participants’ responses were and the health status of the people in the household (in a household with more sickness, the respondent had more to say).

Questions were both closed and open-ended, with time at the end allotted for the participant to share with me anything that was not included in the interview instrument. Most people were very talkative when discussing the health of their families, especially when asked what health care services they do not currently have but would like. The Rathwa structured interview instrument is attached as Appendix A.

**Ethnomedical and Biomedical HCPs Working in Kadipani and Kawant**

Structured interviews were conducted with ethnomedical and biomedical HCPs \( n = 20 \) out of 21; a 95 percent response rate) in both Kadipani (e.g., bhouas, Ayurvedic, homeopathic and allopathic) and Kawant villages (Ayurvedic, homeopathic and allopathic). I was told there were approximately 20 Ayurvedic, homeopathic, and allopathic HCPs practicing in Kadipani and Kawant. My intent was to interview all of
them. I interviewed 16. Reasons for not interviewing the remaining four HCPs include:
(1) refusal to participate; or (2) no one present at the clinic location despite numerous
visits. I also interviewed one traditional birth attendant who lived in Kadipani.

I used judgmental sampling intentionally seeking out particular individuals who
were specialists in the health care practices in which I was interested (Agar 1996:168). I
asked the allopathic doctor to tell me if there were any other allopaths practicing in either
Kadipani or Kawant, and how I could get in touch with them. I also asked the Ayurvedic
and homeopathic doctors to tell me of other Ayurvedic and homeopathic doctors
practicing in Kadipani and Kawant and how I could get in touch with them. All
allopathic, Ayurvedic, and homeopathic HCPs had an equal opportunity to be included.
This was a fruitful sampling technique, as invariably I was directed to other HCPs,
including their names and where to find them.

Bhouas were not included in the HCP interviews for Kawant as the Rathwa visit
bhouas living in Kadipani, their home village. I asked all HCPs, the Kadipani village
leader, and other people to tell me who in Kadipani was a bhoua, and how I could get in
touch with these men. This technique resulted in bhouas being brought to me. Bhouas,
unlike the allopathic, Ayurvedic, and homeopathic doctors, do not have clinics or spaces
dedicated to treating those in need. The bhouas are Rathwa who live in Kadipani, and are
farmers just like so many other Rathwa, in addition to practicing as a bhoua. Bhouas
typically go to the home of the person who is sick, especially if that person is seriously ill,
debilitated, or unable to travel to the bhoua’s home. I also asked all HCPs and local
government officials to inform me of any Unani Tibb practitioners in either Kadipani or
Kawant. There were none, most likely due to the absence of Muslims living in these villages.

Structured interviews with HCPs took place in the individual’s place of practice, except for the bhouas, who were brought to me, and lasted between 30 to 60 minutes depending on how talkative the individual was, if they had a large clinic and they wanted to show me around, how busy they were with patients, as well as their general interest in my research. My HCP structured interview instrument includes both open and closed response questions and is attached as Appendix B.

**Section III—Household Surveys**

The term *survey* “refers to systematic data collection about a sample drawn from a specified larger population” (Schwarz et al. 1998:143). Surveys enable a researcher to collect a significant amount of data “in which a large number of people, generally a carefully selected sample, are polled” (Loustaunau and Sobo 1997:160). My goal with conducting household surveys was to collect culturally relevant data related to how the Rathwa conceive of health and illness, the range of health care services available to them, their use of home remedies and locally grown medicinal plants, what HCPs they typically seek services from and why.

My purpose was to determine “variations in attitudes, knowledge, perceptions, demographic information and behavior” (LeCompte and Schensul 1999a:128), to reach a relatively large percentage of the total population, and to obtain data that may be made quantifiable. Surveys were critical to my work, as I was examining not just what people believe or think about health and sickness as well as health care practices, but what they
do with these beliefs and practices—how they translate them into behavior, specifically health care practices and decision making.

My questionnaires consisted of two types of items: close-ended or forced response questions which prompt participants to select a response from a number of options (approximately 3-5 response options, depending on the question), and open-ended questions which invited participants to respond as they chose. I developed the survey instrument after spending time talking with people about their health care practices, conducting some informal interviews with both Rathwa and HCPs, and consulting with my sponsor, Dr. Vijay Shah. Survey questions were of nominal (e.g., gender), ordinal (e.g., Likert scale response options such as strongly agree, agree, neither agree or disagree, disagree, strongly disagree) and interval (age, income, etc.) scales. My goal was to get quantifiable data from this research method, or get data that could easily be quantifiable. I wanted not just descriptive statistics from this project, but also inferential statistics—what could I infer or predict about the population from their responses?

Prior to entering the field I was briefed by my sponsor, Dr. Vijay Shah, on village household protocol—who I should speak with first when approaching a house and asking if someone would be willing to speak with me. I was told that there would be an adult male home at all times with the women and children, but this was not always the case. Frequently, I found myself in households where only females or only males were home. Household structure, people who were at home, and those who had the time and
inclination to speak with me are indicated in respondent distribution by gender. More females were available and willing or interested in participating than males.

Household socioeconomic status (SES) varied, with indicators of SES including: house size (number of rooms) and composition (brick, wood, sticks, tree branches, thatch, cow dung); household monthly income; access to electricity; and material goods. Survey respondents were asked to indicate if their household had any of the following items: chair, table, cot/bed, mattress, bike, scooter, car, radio, television, mobile phone, number of livestock, animals-drawn carts, electric fans, etc.

My goal was to survey all Rathwa households in the village. Reasons for less than 100 percent coverage included: (1) no one was home despite multiple visits; (2) no adult was home, only young children; (3) residents declined to participate; (4) residents were not Rathwa (being, for example Bhil, Nayaka, or non-adivasi, who were not included in the survey). Survey data were collected from 121 of 147 households in Kadipani village. The English version of the Rathwa household survey instrument is attached as Appendix C. The Gujarati version of this same instrument is attached as Appendix D.

**Issues of Understanding**

Before, as well as during, the time I was conducting structured interviews and household surveys, I was cognizant of how difficult a process this could be for a number of reasons, not the least of which are cultural-bound meanings and concepts. I tried to structure my questions carefully and in a culturally appropriate manner (Schensul et al. 1999:4), recognizing that words may have subtle differences in meaning depending on who is saying them and within what context. Much information may be “lost in
translation” not only when trying to develop something like a cross-cultural survey (Baer and Weller 2006), but also when trying to communicate with a group that has its own particular slang, vernacular, or dialect.

I was told by my sponsor that the dialect of Gujarati changes every twelve villages. My translators were from Baroda, which is approximately a two-hour drive from Kadipani and Kawant. I was thus concerned about how changes in dialect might lead to misunderstandings. For some questions, especially those related to sickle cell disease (SDC), sickle cell anemia (SCA), and sickle cell crisis (SCC), I suspect some people did not really understand what illnesses I was talking about.

After I completed my data analysis and reviewed the results, I began to consider if people had responded in a way that they thought I would like them to respond. I also considered if the symptoms of the diseases that biomedicine refer to as SCD, SCA, or SCC may be perceived by the Rathwa as just part of living an extremely hard and physically demanding life. They have joint pain and fatigue from the work their lifestyle demands. It may be that some do not differentiate these symptoms caused by hard living from those of SCC. This concern certainly opens the door to further research on the incidence of sickle cell disease, as well as peoples’ understanding of what the disease is and how it may manifest in one’s life.

**Rathwa Adivasi Households in Kadipani**

Household surveys were conducted of Rathwa living in Kadipani village. Once had an idea of how the Rathwa conceive of health and illness, I drafted an instrument for surveying households within Kadipani. During my surveying, I discovered that most of
these households were occupied by Rathwa, though some were other adivasi, either Bhil or Nayaka, or non-adivasi, including people who had moved to the area to work for GMDC. Non-Rathwa household were not included in the survey as the goal was to study health care and healing practices among Rathwa only.

There were 147 households in Kadipani. I surveyed 121 of those households, an 82 percent response rate. Twenty-six households were not included in the survey for the following reasons: (1) residents did not self identify as Rathwa (they were Bhil, Nayaka, or of some other adivasi or non-adivasi group \([n = 10]\)); (2) no one was present at the residence despite repeated visits to the home \((n = 9)\); (3) individual(s) in the home refused to participate for a variety of reasons (too busy, husband not present to give permission, not interested \([n = 7]\)).

Research Assistants

I hired 11 local health care workers from the Kawant taluka office to assist me with surveying households in Kadipani (Figure 6). I conducted surveys with the assistance of my translators at the same time that the survey workers were conducting surveys. We were all in a single location of the village simultaneously, moving as a group from one location to the next, broken up into pairs, to survey all of the Rathwa households in that location, then moving on once we had covered a specific location within the village. Houses tended to be in clusters, typically around a water source such as a hand pump or tap, so it was relatively easy to complete a grouping of houses before moving on to the next grouping.
Ten of the research assistants were women; one was a man. Nine of the research assistants were Rathwa themselves, one of whom, the man, lived in Kadipani. The fact that the research assistants were Rathwa was a great advantage. I believe my project was more easily accepted by Kadipani Rathwa because they were being surveyed by people with whom they shared a common identity. Villagers also knew many of the research assistants, as they had conducted health-related work in Kadipani in the past. They also assisted with health-related education programs at the government sponsored clinic and hospital in Kawant, such as the family planning female sterilization camp.
Research Assistant Training, Compensation, and Recognition

Prior to the beginning of survey data collection, I held a training session (Figure 7) during which I: (1) introduced myself, as well as Dr. Vijay Shah, my sponsor, and Ankita and Hatel Patel, my two translators; (2) provided each research assistant with a copy of the survey instrument; (3) reviewed the questionnaire, explaining each question with the translation help of Dr. Vijay Shah; (4) explained the intent of my research, the focus of each question, and what I hoped to achieve; (5) explained each research assistants’ responsibilities; and (6) discussed the approximate timeline for completion of the survey portion of my research.

Figure 7. Research Assistants on training day.
At the end of the survey data collection portion of my research, I paid each research assistants 50 rupees per day worked, an amount negotiated by Dr. Vijay Shah and myself with Somoiben B. Chaudhari, Child Development Program Officer for Kawant taluka district office who is also the research assistants’ supervisor. Upon completion of the survey portion of my data collection, I held a recognition ceremony (Figure 8) for the research assistants, during which Somoiben B. Chaudhari, Child Development Program Officer for Kawant taluka district office and Mr. P. K. Mackwana, Kawant taluka development officer, were present. Each research assistant received his or her pay in a pretty envelope, was given a small memento of appreciation from me, as well as a certificate of recognition signed by me with the University of South Florida logo on it. In addition to the recognition ceremony, that same day we made a field trip by jeep to a beautiful temple in Hafeshwar, during which we stopped at the Narmada River for a ritual bath, collected Narmada River water in plastic bottles I had from my time at the guesthouse, and participated in prayer and worship. I discuss this event and its significance in greater detail later.

Survey data collection took 6 days. Research assistants worked in pairs, a practice they follow when doing their public health-related work in the local villages. I was advised to do the same for my work. Each morning we met at the GMDC guest house. One research assistant, Daxshaben Trivedi, was the research assistants’ direct supervisor at the taluka office. She was also responsible for supervising the research assistants during my project. I had the research assistants sign in each day so I would be able to accurately calculate their wages once survey data collection was completed. Every day I
distributed a stack of blank surveys to each research assistant along with a pen for his or her use and a piece of chalk for marking the entrance to each house so we knew if: (1) a survey was completed; (2) the household refused to participate; (3) no one was home; or (4) the residents were not Rathwa.

Research assistants were also provided with small items such as pencils and trinkets to be given as tokens of appreciation to the survey participant at each household. Each day, we rode by jeep as a group to a pre-designated starting point in Kadipani and then determined which pair of workers would go to which house. We split up, surveys and tokens of appreciation in hand, and proceeded with our work. Research assistants were instructed to survey only those households in which the people were Rathwa, to read
the consent at the top of each survey, and to proceed only if the person understood and agreed to participate. Completed surveys were collected by me at the end of each day, as was information about: (1) how many households refused to participate; (2) how many households where no one was home; (3) how many households were not Rathwa. I then compiled these data for each day, and reviewed each survey for thoroughness, problems, confusion, etc. The Kadipani Village Household Survey form, *English version*, is attached as Appendix C, and the Kadipani Village Household Survey form, and the *Gujarati version* is attached as Appendix D.

**Section IV—Participant Observation**

Participant observation was the data collection method used most frequently. While living in Kadipani I was able to move about the village, visit with people, meet their family members, see their children, livestock, and farm plots, talk with local HCPs, and see for myself how people conducted their daily lives, especially as it related to their health care needs and health care decision making. It is impossible to describe all that I saw—a newborn baby just minutes old, homes with intricate designs on the floors, beautiful artwork, massive piles of corn being processed, lots and lots of children, an elderly man in cardiac arrest surrounded by his family members, many altars dedicated to a variety of Hindu deities, and so much more.

There were two primary schools in the Kadipani area, one where Rathwa children primarily attended, another closer to GMDC where children of GMDC employees attended. I visited both primary schools, met the school teachers, and donated school supplies (paper, pencils, pencil sharpeners, markers, colored index cards, and other items)
to the schools. I had met one of the school teachers, a young man, during my preliminary visit in June and he remembered me. Subsequently, I occasionally ran into him in the village; he spoke very good English and was interested in my research.

Within the broader region where the Rathwa live (meaning not just Kadipani and Kawant, but also beyond), I observed two main economic operations, first the GMDC mining operation within Kadipani village, where fluorspar is mined and processed; and second, cotton growing, ginning, and processing in Bodeli, a village that is over an hour from Kawant and is much larger than Kadipani or Kawant. Gujarat Mineral Development Company, “India’s premier mineral development company” (GMDC 2009:n.p.), has an active mining operation in Kadipani where the Rathwa reside. With corporate offices in Ahmedabad, Gujarat State, GMDC has a state-wide and national presence, as well as a local presence in Kadipani where fluorspar is mined and processed. The mineral fluorspar is used “directly or indirectly to manufacture products such as aluminum, gasoline, insulating foams, refrigerants, steel, and uranium fuel” (United States Geological Survey 2009:n.p.).

I photographed and video-recorded many events, such as when I spent a Monday afternoon at the *haat* (large local market), a man demonstrating for me how a bhoua heals people, and people moving about the village, doing what they do. Participant observation helped me feel a part of what was going on. It also provided me with entrée to people’s homes. After seeing me repeatedly in the villages, eventually someone would approach and ask when I was coming to their house.
I spent a considerable amount of time in peoples’ homes, as well as in various locations in Kadipani. While walking through the village, people would occasionally call out and motion for me to come to where they were. I did not have to be fluent in Gujarati to know what people were saying to me, as I could typically tell from the quizzical looks on their faces. Everyone wanted to know who I was, why I was there, what I was doing, where I was living, and would I come see their home and sit with them. I was able to introduce myself in Gujarati and tell a little bit about my research, but relied on my translators for help with more complex conversations. At times conversations could become very busy—lots of people talking at the same time, some taking me by the hand to show me something, or young children coming close to look at me or ask me to take their picture.

After a few days in the village, people who had seen me on a prior occasion would approach, say hello, and then go about their work. I spent time with a woman observing her make cow dung bricks which are used as fuel for cooking. When I asked if I could try it, she looked at me and said no, that work was not for me. So I sat and watched, talking about what she was doing, step by step. This woman was a widow with two teenage daughters. Both daughters had contracted polio as babies, and their legs were now wasted and folded beneath them. Neither was able to walk, instead moving about by using their arms and swinging their lower half forward. Each girl worked outside processing crops during my visits to the home. On my final day, they asked me to take their photo and then wanted to see the image. They giggled and became shy when looking at the digital
photo, a response many people had when I showed them photos I had taken. Needless to say, I was surprised at how many cases of polio I saw while in the local villages and in other parts of India.

*Rathwa Homes in Kadipani*

Rathwa homes were clustered around water sources, such as a hand pump, well, or tap. I learned the hard way not to attempt to collect data in this area of the village during water availability time, as people were either not home or too busy with water-related chores to speak with me. I called back numerous times throughout the day to catch those people I had missed because they were out doing laundry or getting water.

Kadipani houses ranged in size from 1-4 rooms, with “wealthier” families living in large, multi-room homes built from bricks and other materials with neighboring homes some distance away. Poorer families lived in single room homes, or huts as they referred to them, made of tree branches, sticks, cow dung, and thatch roofs. Neighboring homes were close, with some practically on top of each other, their walls almost touching. This close proximity of homes might be advantageous for a few reasons, not the least being that during monsoon season the brunt of the driving wind and rain could be weathered better by the structures collectively rather than singly. Severe rain could result in much devastation, a result of how the homes are constructed, their locations, which were frequently on hilltops or hill sides, and the fact they are surrounded by unplanted dirt that could slide or erode with a strong downpour.

The Rathwa are patrilocal and patrilineal, tending to live in multi-generational families. When a son marries, his bride moves with him to the house of his parents where
she helps her mother-in-law with household responsibilities and farming work. When the number of people in a household becomes too large, someone—typically an elder son—may build another home close to his family of origin where he, his wife, and their children live. Ninety-five percent (n = 115) of survey respondents reported that they own their own homes. The remaining respondents were renters or they lived in a home owned by a family member.

**Rathwa Livelihood**

Rathwa farmers grow different crops, though most plant maize, which is harvested, dried, processed, and used for making food. One “wealthy” farmer owned land where he grew maize, wheat, pulses (lentils), and a variety of fruits and vegetables (onions, potatoes, etc.), and he and his wife operated a small shop attached to their home. In this shop they sold their surplus crops, along with some common household items and tobacco products. This farmer had access not only to a nearby hand pump for water, but he also had a well on his land for irrigating his fields and watering his livestock. He had several large mature trees, including a huge mango tree, bamboo (used for housing material and other things), small plots of land staked out where he and his wife grew various herbs and other plants, as well as lots of goats, chickens, and a bullock.

I spent quite a bit of time with this farmer and his wife, who lived with their two young sons in a brick home on top of a hill relatively far from other homes in Kadipani. This home had four separate rooms with beautiful detailing in the cow-dung floor. The detailing was created by his wife, who used the palm of her hand to make a half-circle configuration to create the design. He was very proud to give me a tour of his home,
showing me where he had chickens roosting in small baskets that hung from the wall, a large kitchen where shiny metal utensils, plates, and cookware were displayed neatly on shelves, and a variety of colorful posters honoring Hindu deities. I spent a lot of time in this household for a number of reasons, not the least of which was that this man was very accommodating, liked to talk, and he wanted to introduce me to his neighbors. He was very interested in my research and had number of comments to make about the availability of health care services for the Rathwa. I videotaped our tour of his home, which includes his explanation of the use of some of the articles hanging on the wall. He also showed me two hens nesting in hanging baskets. He pulled out an egg one hen was sitting on which caused her to loudly squawk! I was informed that the egg “was full” (there was a baby chick inside). He replaced the egg and we continued on our tour.

This farmer, who was 22 years old when I met him, had been diagnosed with sickle cell disease at a young age after he had fallen out of a tree due to giddiness (the sense that you are moving/spinning while all else is still—not the same as dizziness). Interestingly, he reported no cases of malaria within his immediate family (himself, his wife, and their sons) or his extended family (his parents and siblings). This man also provided me with a lengthy and amusing demonstration of how a bhoua conducts a healing session, which I video recorded. When I played back the recording for him and his neighbors, there was lots of laughing and excitement, with many people coming over to view the playback, including the village leader’s mother who turned up frequently while I was in various locations at the village.
In contrast to this respondent, whose home was located far from the center point of Kadipani village, other people who lived near the center of the village, which is close to GMDC, had less opulent living quarters. People who lived near GMDC had very small homes, which they referred to as huts. These were typically one-roomed and were constructed of tree branches, sticks, cow dung, and low, thatched roofs. These houses appeared to be fragile structures that would need regular attention to keep the walls and roof intact and animals and rain water out. These homes were small and crowded close to neighboring homes, all of which were arranged in close proximity to the local water tap. Water flowed from the tap only during certain times of the day, so activity around the tap, such as washing clothes, or collecting water to carry home for cooking and drinking, was at its peak early in the day when the water was running freely.

**Gujarat Mineral Development Corporation (GMDC) in Kadipani Village**

The presence of GMDC, a large commercial enterprise and employer in Kadipani village, directly impacts not just local and individual household economies by providing Rathwa GMDC workers with more disposable income than others, but it also influences, both positively and negatively, individual and household health status. The health status of those Rathwa who work for GMDC may be affected by on-the-job injuries, stress-related illnesses, or exposure-related diseases. However, they have greater ease of access to heath care services than people not working for GMDC. These factors impact health care seeking behavior, as well as health care decision making; more income allows easier payment for health care services, and thus one’s choices are expanded. People who have
money do not have to seek services from the government sponsored clinic or hospital unless they want to.

Malaria in Rathwa Households

During my time with the Rathwa, I spoke with people about malaria in order to gauge their level of knowledge about the disease. Many households had had multiple members who had suffered from malaria, while others had none. One young mother reported stated that she had contracted malaria during her pregnancy and had been very sick. She gave birth to a healthy baby and had one recurrence of malaria postpartum. Rathwa knowledge about malaria varied, with some households taking preventative measures such as sleeping with bed nets, covering water vessels where mosquitoes could breed, and using various concoctions of neem to both prevent and treat malaria, and other households doing nothing. Almost everyone was familiar with the anti-malarial properties of neem, a tree that grows locally and to which people have easy access.

Health Care, Travel Distance, and Transportation

Rathwa frequently travel from Kadipani to Kawant for health care. The need for some form of transportation (scooter, car, bus, jeep, truck, horse, walk) was a key issue. While people could use the GMDC dispensary in Kadipani, it was staffed by a male medical assistant, not an ethnomedical or biomedical doctor—a key factor in some people’s health care decision making. There had been a government-sponsored clinic in Moti Chikhli, which is not as far from Kadipani as Kawant, but this small facility closed during my time in Kadipani and patients were told to go to Kawant for health care. Seventy-five percent ($n = 91$) of survey respondents said that the distance they had to
travel to get health care was a problem, and 86 percent ($n = 104$) said transportation was a problem.

While driving between Kadipani and Kawant, I frequently noticed TaTa pickup trucks, busses, or jeeps packed with people, including those riding on the roof, who would jump on or off at various points between the two villages. Once, while informally interviewing a couple waiting for transportation to Kawant outside a small shop up the road from GMDC, a small crowd began to gather. Their gathering had nothing to do with their curiosity about me. They were all on their way out of town, each one piling into the TaTa truck until it was overflowing, people hanging off the doors and windows, clinging to the roof. Regardless where people were on the vehicle, they still had to pay for the ride.

**Rathwa Healing and Health Care Practices**

Healing and health care are “concerned with the patient’s culture, his personality, his norms and values (Nagla 1997:93). This is evident in the healing and health care practices I have observed among the Rathwa in Kadipani. The Rathwa and the HCPs who provide health care for them operate within a ’metamedical’ framework of thought” (Worsley 1982:315) particular to their culture, their history, and their traditions. It became clear to me that the “ways in which we perceive and interpret health and illness, and seek and deliver care, are inextricably bound up with cultural norms, beliefs, and values, as well as with social structure and environmental conditions” (Loustauanau and Sobo 1997:1).
I noticed on numerous occasions while observing in both public and private clinics, that most, if not all, patients were accompanied by someone else, or multiple people when they came to see the HCP. Those in dire need, who were too sick to walk, were carried into the facility. Such was the case I discussed earlier for KaaKaa (uncle) who, while in cardiac arrest, was wrapped in a blanket and carried from the village into the public hospital in Kawant by his family members, where he was placed on a narrow wooden bench outside the exam room until Dr. P. was able to see him. KaaKaa’s family stayed with him the entire time he was in the hospital, and later that day they carried him back home to die.

I also observed a similar case in a private clinic where a young woman accompanied her elderly grandmother who had right-sided paralysis and needed the added support of her granddaughter to make it into the clinic. In yet another clinic, I observed a gaunt, middle-aged man come in surrounded by five other people. The man had a head injury, wore a bloody makeshift dressing on his head and had blood stains on his shirt. The doctor remarked to me that this man must be a very important person in his village for so many people to accompany him to the clinic.

*Rathwa Perceptions of Bhouas as Healers*

What was interesting as well as perplexing during my observations in Kadipani and Kawant, was how people responded to the bhouas. While surveying households and interviewing Rathwa as well as HCPs, a surprising number of people spoke less than highly about the practices of the local bhouas. When I asked Kadipani villagers if they went to the bhoua when sick, many would smirk, laugh, and speak disparagingly about
these indigenous healers. This was then followed by their telling me that they do indeed seek the services of a bhoua when sick. Regardless where I was during my field work, or who I was speaking with, the mention of the word *bhoua* invariably seemed to produce laughter, disparaging remarks, and looks of skepticism.

During one structured interview with a Rathwa 25-year-old married male and father of two boys, I learned much about how villagers view the bhouas, a view that seemed contradictory. When I asked this interviewee “What does the bhoua do to help you or a family member feel better?” he quickly jumped up, went to a nearby neem tree, broke off a branch and came back to where I was sitting. There was much laughing and commenting among the people who had gathered to watch. Rather than just tell me his response to my question, he was also going to show me. This respondent recruited his mother to assist with his demonstration, with him playing the role of bhoua, she being the patient. The man had his mother sit on the ground while he used the neem branches to sweep her body. He also dropped some seeds over her head and around her body while he chanted mantras. There was much laughter by those observing. I was shown how a bhoua treats malaria, snake bite, and stomach ache, complete with an explanation of what he was doing and why. Fortunately, I was able to video record this demonstration. I later played the recording back for the man, that he and his family members seemed to enjoy, laughing as they watched. While this man said he sometimes uses the services of the bhoua, he was quick to say that he and his family also use the government clinic.

It was no different when the father-in-law and son-in-law bhouas agreed to demonstrate their healing techniques for me. Those who had gathered around to watch,
and there were always people who were curious and wanted to see what was going on, laughed and jeered during the demonstration. I was later told that while it is tradition for villages to seek the healing services of the bhoua, and that they do so because they instructed to by their elders, that many do not believe bhouas have ability to heal, but are just cheating people for the money. Bhouas receive a fee for their healing services.

I was not sure how to interpret this phenomenon. I expected that other HCPs might be skeptical of the healing services provided by the bhouas, but I did not expect that the people who solicit the services of the bhoua, or those who are familiar with their practices, to view them in a negative light. This was countered at times when an individual believed an illness was caused by some evil spirit or malevolent god. Then, the bhoua was revered, seen as possessing the ability to bring about divine intervention and also a cure. While a bhoua might not be able to cure someone of malaria, he might be able to “cure” one of a self-limited disease that runs its course and resolves on its own.

Ethnomedical Health Care Practioners Working in Kadipani and Kawant Villages

I observed 17 of the 23 ethnomedical HCPs who practiced in Kadipani and/or Kawant. To be classified as an ethnomedical HCP, an individual had to be a bhoua, or an Ayurvedic or homeopathic doctor. Since there was no formal list of ethnomedical HCPs who practice in either Kadipani or Kawant, I relied on people to tell me who was a bhoua, Ayurvedic, or homeopathic HCP and where they were located. I observed 3 bhouas who practiced in Kadipani, 7 Ayurvedic doctors who practiced in Kawant, and 5 homeopaths that practiced in Kawant.
**Biomedical Health Care Practitioners Working in Kadipani and Kawant Villages**

To be included in my participant observation of biomedical HCPs, the practitioner had to be an allopathic/biomedical doctor who held an MBBS or MD degree. One exception to this rule was made so as to include the medical assistant who worked at the GMDC dispensary in Kadipani. While he did not hold a degree in either an ethnomedical or biomedical discipline, he was included in my facility and HCP observations as he provided a variety of biomedically-based treatments in a facility in the center of Kadipani that was frequented by the Rathwa.

**Reflections of Fieldwork**

An important aspect of anthropological fieldwork is reflexivity—being able to reflect on one’s self as well as the community one is working in. Unlike other disciplines that study humankind, anthropology requires a certain degree of introspection. Without this inward consideration, it would be difficult to recognize areas of potential bias, mistakes and miscommunications, and unrealistic expectations. It is very difficult to know or understand others, as well as their belief systems and cultural practices, if you do not know yourself, or do not recognize what is important to you and why.

During my time in Kadipani and Kawant, I was faced with a number of situations very different from what I might experience at home in the U.S., many of which required me to think about who I was as a person and as an anthropologist, how I interact with others, and how my actions may impact others’ behavior as well as their perceptions of me. The most prominent issue I encountered in the field was being female. My gender was the greatest impediment to my work, far greater than my language ability (or lack
thereof), skills as a researcher, or ability to endure and adapt to change and unfamiliar environments.

**Foreign Female in the Field**

As a foreign female, I was instructed by many people, male and female alike, that I should be accompanied by another person, preferably another female, at all times while in the field. Whenever I violated this rule, I was soundly reprimanded and told not to do it again. My translators Ankita and Hatel were both female, as was my friend Sunita, who frequently accompanied me when I interviewed HCPs, as well as when I was conducting participant observation in various private and public clinics and the public hospital. I was also accompanied at times by my sponsor Dr. Vijay Shah.

I was very fortunate that a number of Indian women, including Dr. Pratyusha Basu, my committee member, advised me on appropriate dress, etiquette, behavior when in mixed-gender groups, and local customs. I dressed in the same style clothing as Indian women wear (salwar, kameez, and dhupata), and I behaved in the same manner as an Indian woman as much as possible. This greatly assisted my work. I found that people, both men and women, were more receptive to me when I was dressed in Indian rather than Western style clothing (Figures 9 and 10). I took a sari with me to the field, but did not ever wear it out of fear that I could not pull off the look, style, grace, and skill necessary to wear six meters of un-sewn fabric. I regret not having worn the sari for some occasions. Before returning to the United States, I gave the sari to a friend who had helped me during my stay in India.
While I did all that I could to gain access to people in the community, I am mindful that I probably missed out on information just because of who I am—an outsider, a Western-educated researcher, a female, and a neophyte cultural anthropologist in a new and unfamiliar place. I was not a neutral instrument. Regardless of how I dressed, I never looked like the people I was studying—I am tall and have red hair, blue eyes, and very fair skin. Once, while walking from one house to the next, my translators and I passed a house where children were walking with small metal buckets to get water from the hand pump. When these children, who were probably between five and ten years old, saw me, they turned and ran, dropping their buckets, frightened by this unusual-looking stranger! I was very cognizant of my differences and of being an outsider. I had a difficult time feeling at ease when discussing certain topics. I avoided being alone in the community and deferred to others when necessary, a personality trait I do not naturally possess, and was reluctant to cultivate.
No amount of tutoring and practice could get me to the level where I could speak Gujarati in the same way that my respondents do. I suspect that I was not privy to some, possibly many, aspects of Rathwa culture that could have been very revealing of who they are as a people simply because I was an outsider. When in the company of women who were doing tasks such as caring for children, shooing chickens out of the house, making cow dung bricks, or pumping water, I tried to participate actively. While they frequently helped me, I was always told no, I could not help them, regardless what the task was. At first I felt hurt, as I was being helpful or neighborly—we were all women. It was later explained to me that I should recognize my position in the hierarchy of people and not deviate from it. I reluctantly accepted this pronouncement.

While there were some negative aspects to being a female researcher, there were also positive aspects. I was greeted first by females at most of the homes I visited. Typically men were out working while women were caring for the home and children. While I did also speak with many male informants, it was the females who invited me into their homes, showed me around, introduced me to other family members, and spent time talking with me about health care practices. Some women showed me their livestock. Many women showed me their altars, and explained their daily worship rituals. Other women showed me their children, frequently calling in those who were playing outside, insisting they come in the house so I could see all of them lined up and smiling. As a woman working with two female translators I had easy access to female informants. If I had been male, this most likely would not have been the case, and my data collection could have been considerably more difficult.
Protection of Human Subjects

This research followed the American Anthropological Association Code of Ethics and professional guidelines (AAA 2008), as well as the University of South Florida (USF) Institutional Review Board (IRB) guidelines for the protection of human subjects. These included: obtaining informed consent; maintaining confidentiality and privacy; minimizing harm and maximizing benefits. I was forthcoming, open, and honest with all participants as to the nature of my research. My intent with conducting this research was thoroughly explained to all participants and informed consent was obtained before proceeding. All participants were given the opportunity to ask questions before participating, and were assured that their responses would remain confidential. The right to refuse to participate was respected, as was the right to stop the survey or interview and withdraw from participation at any time.

Summary

This chapter discussed the methods used for data collection in both Kadipani and Kawant villages, with Rathwa adivasi as well as HCPs. The methods included informal and formal interviews with Rathwa and HCPs, household surveys, and participant observation in a variety of setting including individuals’ homes, the public hospital and clinic, as well as private clinics owned and operated by allopathic, Ayurvedic, and homeopathic doctors. This study complied with research ethics in terms of informed consent, participant confidentiality, and security of participant data. The results of data collection are analyzed and discussed in Chapter Six.
CHAPTER SIX
DATA ANALYSIS AND DISCUSSION

Introduction

This chapter includes my observations as a participant observer, an analysis and discussion of the data collected from my structured interviews with ethnomedical and biomedical health care practitioners (HCPs) who practice in Kadipani and/or Kawant villages, and my structured interviews with a sample of Rathwa living in Kadipani village. Also included is the analysis and discussion of Rathwa household survey data. Data analysis includes descriptive statistics for a number of variables, and interpretative statistics including Chi-square tests, one-way ANOVA, and multidimensional scaling (MDS).

Participant Observation—What it Means to Be Rathwa

I was very fortunate to have been able to live among the Rathwa of Kadipani village. The Kadipani villagers were curious about me, but somewhat more curious about why I was curious about them. Why was I there? What was I trying to do? What I wanted to know from them was what it means to be Rathwa.

On the day that election results for the position of Kadipani Serpunch (village leader) were announced, I was in Kadipani collecting data. I had scheduled an interview with the newly re-elected leader, Ramesh Rathwa, as well as his family members and
other Kadipani villagers about health, health care, and healing within the village. During all my interviews, we sat outside in the area in front of the entryway to their homes. Typically, other villagers who were curious about who I was and why I was there would stand around and observe, usually remaining quite, though occasionally interjecting comments when I hit on a topic they found compelling.

The day I met with the Serpunch was no different from any other. As usual, I was surrounded by many people, the majority of whom were men—women and girls stayed in the background unless asked to come forward. It was a beautiful, sunny, and comfortable day. I was sitting on a cot typically used by the family for sleeping. A dog slept underneath where I sat, tired from having been chased away multiple times by different men. Chickens and other livestock passed through, unperturbed by my presence, or the press of villagers who gradually crowded in closer, curious about who I was and why I was there, and hoping to get a glimpse of the various electronic equipment I was hauling about with me.

We all sat outside, next to the entrance to Ramesh’s home. The mood was festive due to the impending grand celebration of Ramesh’s re-election. Loud, booming music was playing, with men beating on drums and singing. I was told there was to be a victory march through the village—and drinking, much drinking! Everyone was happy and eager to talk. But, they also wanted me to move it along, complete my business as they had celebrating to do. Ramesh’s mother, who frequently turned up at various homes in the village while I was surveying and interviewing people, came towards me, introduced me to her other children, and asked me to take a photo with her, her husband and her son, the
serpunch. She was very proud. I think this was most likely my best, most successful and truly favorite day of field work for so many reasons.

After some casual conversation with Ramesh and his parents, congratulations to Ramesh, including a gift of sweets to honor his success in the election (Figure 11), I conducted a formal interview with him as well as two bhous, father-in-law, son-in-law pair invited to the meeting on my behalf. After the formal interviews were taken care of, I asked the group of observers “What does it mean to be Rathwa?” There was a pause, rapid translation of my question, silence, murmuring, and then one young man responded in perfect English “That is a very big question!” We laughed and then talked about what it meant to them to be Rathwa. I was told first that the Rathwa were the highest ranking of the local adivasi, above the Bhils, the Nayaka, and other local adivasi (though they do not have a formal caste system as that found among non-adivasi Hindus). The Rathwa are endogamous, marrying only other Rathwa. The woman may be from a village other than Kadipani, but she must only be Rathwa. In the words of one man “we do not send them our daughters, nor do we take their daughter to marry our sons.”

Participant Observation—Rathwa Identity as Adivasi

I wanted to determine how the Rathwa perceived their identity as both Rathwa and as adivasi. Group identity is influenced by a number of factors such as political affiliation, religion, and socioeconomic status. Li notes that self-identification as indigenous could be considered as “a positioning which draws upon historically sedimented practices, landscapes, and repertoires of meaning, and emerges through particular patterns of engagement and struggle” (Li 2000, 151). In the case of Indian
Figure 11. Congratulatory gift being given to newly re-elected serpunch.

adivasi, Xaxa notes that, “It has generally been assumed that tribe and caste represent two different forms of social organization—castes being regulated by the hereditary division of labour, hierarchy, the principle of purity and pollution, civic and religious disabilities, etc., and tribes being characterized by the absence of the caste attributes” (Xaxa 1999, 1519).

While informally interviewing people or hanging out as a participant observer, I frequently asked people what it meant to be Rathwa. Their answers varied, though frequently respondents would look at me in a puzzled way. I interpreted this as their not understanding what I was asking. I tried rephrasing the question, but still received a shake of the head from many people. Rather than increase their puzzlement and
frustration, I moved on to other, somewhat related topics. As we sat and talked, I attempted to get at the issue of their identity as *adivasi*, rather than specifically as *Rathwa*. Respondents typically told me that while there were other adivasi living in Kadipani, the Rathwa ranked higher than the other groups. Rathwa did not affiliate with other adivasi in social events, nor was there intermarriage among the various adivasi groups. Some respondents mentioned other adivasi they had met along the Narmada River who were moving toward Kadipani because they had been displaced from their homes along the river. This migration created an interesting dynamic in the Kadipani area. There were adivasi moving toward Kadipani because they had lost their homes, and there were non-adivasi moving into Kadipani to work for GMDC.

Since the majority of my respondents were women, it was easy to gain access to the interior of their homes, and to talk about what was important to them and how they lived their lives. What I found was that many Rathwa observed Hinduism to some degree. Most homes had altars and images of Hindu deities on the walls. Women would proudly show me their altars and demonstrate their daily worship rituals. They stressed the importance of their spiritual beliefs and how these beliefs influenced how they lived. I was a bit surprised that most of the images I saw were of Hindu deities. These same women told me they visited either the Shiva temple or other temples built to honor Hindu deities. When sick, the women or their family members would visit one of the temples, pray and make offerings. Their spiritual beliefs were an integral part of their health care decision making, whether praying to Shiva at the temple, or seeking the services of a bhoua to intercede with the supernatural on their behalf. Hinduism, which is associated
with caste in India, was clearly a part of the daily lives of the Rathwa who are adivasi and outside of the caste system.

In contrast to the observation of Hinduism, some Rathwa homes had *Pithoro* images (non-Hindu deities specific to the Rathwa), either in the form of a painting on a wall or small clay statues typically in the form of a horse. This seemed incongruous to me, to have Hindu and non-Hindu deities in the same home. The Rathwa’s blending of religious beliefs created confusion for me about their identity. Were they Hindu because they recognized and worshiped Hindu deities? Were they something other than Hindu since they also recognized and honored Pithoro deities, which are usually in the image of a horse? Were they practicing some from of animism, which would exclude them from being Hindu?

According to the Pew Forum on Religion and Public Life, 80 percent of Indian nationals are Hindu (Pew Forum 2009). Adivasi typically fall outside of Hindu society due to their lifestyle characteristics, including their religious or spiritual practices (Baviskar 2007). I wanted to know if it was possible to be Hindu and not be part of the caste system. I was not entirely clear who or what was shaping their religious beliefs. I continued to ask questions about how their religious beliefs influenced their identity on the micro level as adivasi, and on the macro level as Indian nationals. When I asked respondents specifically about their religious affiliation, they replied they were Hindu. Other non-adivasi informants, such as the HCPs also indicated the Rathwa were Hindu, as did my sponsor, Dr. Vijay Shah. When I asked about the Pithoro images, the Rathwa
did not see these as separate from their Hindu beliefs and practices—they were just one more aspect of their lives.

**Participant Observation—Health Care Choices in Kadipani and Kawant Villages**

Three types of *ethnomedical* HCPs offer services to the Rathwa in Kadipani and/or Kawant: (1) Bhouas; (2) Ayurvedic doctors; and (3) Homeopathic doctors. I did not meet any unani tibb practitioners, probably due to the ethnic composition of my study area. Unani is primarily practiced by Moslem healers; there were few Moslems in the Kawant and Kadipani communities.

The Rathwa have a variety of options for treating and preventing sickness. *Biomedical* HCPs are available in both Kadipani (a medical assistant at the GMDC dispensary) and Kawant (a biomedical physician at the government clinic and hospital). The HCPs that people access could begin with a visit to a local traditional healer, then possibly follow a winding course *from* ethnomedical practitioners *to* biomedical practitioners, sometimes weaving back and forth with the health care service recipient utilizing different services or providers when treatment does not progress as desired, fails entirely, or appears to be caused by “other-than-human entities” (Garro 2000).

**Participant Observation—Rathwa Beliefs**

Indigenous healers have long played a significant part in both the physical and mental health of many populations. Of concern is how indigenous or ethnomedical healers interface or collaborate with biomedical healers in the care of the sick, especially those with serious illnesses or infectious diseases. Unfortunately, many adivasi communities are “facing extinction due to endemic diseases” (S. Basu 1992:14), a
problem that frequently could be prevented by the provision of adequate health care services that not only include treatment as well as prevention programs, but that recognizes the role of indigenous healers in their communities and strives to include them in health care provision and planning when appropriate.

Rathwa health care decision making is based on beliefs about what causes illness and how best to cure that illness. For the Rathwa, bhouas are folk medicine practitioners, using their abilities to intervene on behalf of the patient with the supernatural. Since many Rathwa believe that sickness or disease are caused by evil spirits, malevolent gods, or some other misfortune, the role of the bhoua is important to the well-being of the community for a variety of reasons. While in Kadipani, I was told that bhouas are also referred to as “practitioners of the black arts,” as they have the ability to remove ghosts and dispel curses.

Recognizing that all cultures may have some form of folk illness, and that beliefs about what causes sickness and disease are variable, it follows that Rathwa concepts about what makes people get sick would influence their health care decision making. During my structured interviews with the Rathwa, I found that many people believed certain maladies to be better suited to the healing techniques of a bhoua, such as headaches and snake bites. Frequently, respondents would tell me they always go to the bhoua, no matter what their illness. If they do not achieve relief from their symptoms after a session with the bhoua, then they try another treatment option with some other HCP. Interestingly, it is the bhoua who tells the sick person to go to a doctor after administering a treatment then.
Participant Observation—Gods, Healing, and Art

While working in Kadipani, I spent much time with people at their homes. I was typically invited inside to see their babies, their livestock (which are penned in the home) and, on occasion, Pithoro paintings. Pithoro paintings, which have a very specific purpose in the lives of the Rathwa, especially as they relate to sickness and health, have been researched by Vishrajit Pandya (Pandya 2004), who has examined the role of Pithoro paintings in the lives of Rathwa experiencing suffering or misfortune. While visiting with villagers in their homes, I saw several Pithoro paintings, some newer, some older, some in homes of those who appeared wealthier than others. All covered an entire wall in the main area of the house, and were a source of pride for the occupants. Residents typically invited me to examine the paintings closely and take photos of them standing next to the painting.

I had read about these painting prior to my leaving for the field, so I was on the lookout for them. I was ecstatic the first time I entered a house that had such a work, and I encouraged the owner to speak at length about the painting and its significance to the family. After viewing a few of these paintings, I noticed themes found in all of them. Artistically, all of the Pithoro paintings had a white background with a variety of figures positioned about the work, all in different colors, though mostly blue and dark pink or red. These are water-based paints made from plants to create color, with a bamboo stick used as a brush. The painter, who is commissioned by the family and compensated for his work, is known throughout the village, as this is a community process, one that involves a puja (religious ritual), food, and typically two days of ceremony. Each
painting had figures of horses, which is very significant, as horses represent Pithoro, a god. There were also figures of people doing work and/or leisure related activities, as well as other animals. I was told these figures represent what is going on in the community, though the people who live in the home are not represented in the painting.

The painting itself is considered a god, therefore it is to be treated with reverence and respect, with obligations incurred. A number of people are involved in the creation of a Pithoro painting once a household decides to commission one. First is the Lekhar, the man who paints or writes the painting, one who is respected throughout the village for his work. Second is the Badvo, who interprets or divines the painting, typically indicating that Ind and Pithoro (divinities) have vacated the home and thus misfortune has ensued (Pandya 2004:123).

Residents of all of the homes I visited with Pithoro paintings indicated that they had suffered some form of misfortune, most frequently poor health by a family member, and were prompted by this misfortune to commission a painting. One household I surveyed that was located on the top of hill with a panoramic view had commissioned their Pithoro painting (Figure 12) when their eldest male child contracted tuberculosis (TB) when he was three years old. The head of the household/father of the boy was very proud of the painting, and asked me to examine it closely and to take a picture of him standing beside it. He also asked me to spend time with his son, whose TB had progressed to his brain, and was in a semi-vegetative state.

On the day of my visit, the boy, who was now 16 years old, was outside in the sunshine lying on a cot, wrapped in a quilt, under the supervision and care of his eldest
sister. This family truly loved this child and asked what I could do to facilitate his recovery. They had sought treatment from many ethnomedical and biomedical health care service providers, going as far away as Ahmadabad, trying to heal their son. The Pithoro painting was one aspect, a spiritual aspect, of their healing quest. After spending some time with the family, we completed a household survey, and I then interviewed the head of the household, who told me about his Pithoro painting.

After the formal aspects of my work were complete, we all sat outside talking. Various family members encouraged the boy to open his eyes so he could meet me. They also seemed to desire some type of divine intervention by me on his behalf. My translator asked “Ma’am, they want to know what you can do to help the boy, to make him better?”

Figure 12. Pithoro painting in a home in Kadipani village.
The family had gone to what I consider great lengths, including traveling extremely far from home, to find a cure for their son. All I could offer was to spend time with them, talking about their life together as a family. Interestingly, one advantage this family had over many others was that the father worked as a welder for GMDC. Thus, not only did the family have a monthly income that supplemented farming, but they also had a health care benefit that exceeded that of someone who does not work for GMDC.

**Participant Observation—Bhouas**

I observed three bhouas (all males) who were all Rathwa adivasi living in Kadipani. These men were primarily farmers, but also practiced as bhouas, having come to that role for a variety of reasons. Their approach to healing may vary, with some using chanting and prayers, others using plants to sweep illness out of the person or as a formal treatment modality, as is the case with neem for treating fever. Still others may go into a trance-like state, calling on the divine for intervention, which could include not just healing but also predictions for the future.

Three bhouas from Kadipani village were interviewed. No one could tell me how many bhouas live and practice in Kadipani. I was told that: (1) anyone can be a bhoua; (2) they are all men; and (3) while they may live in Kadipani, they may also move about the local area practicing their healing, rather than staying in one place like other HCPs, such as those who have clinics in Kawant. I was informed of who was a bhoua by the Kadipani serpunch, as well as by other people living in Kadipani. The village serpunch provided me with access to the three bhouas I interviewed. I interviewed only those
bhouas living in Kadipani, as I was told the Rathwa of Kadipani seek the services of bhouas of Kadipani.

While I have been told “anyone can be a bhoua,” it is also considered by many, especially the bhouas I spoke with, to be a calling. This calling is typically attributed to divine intervention in that a god or goddess comes to the person in a dream and instructs him to become a bhoua. Bhouas believe they have supernatural powers that facilitate their ability to bring about healing, a detail they revealed to me during my interviews. Those Rathwa seeking the services of a bhoua also believe this. Two bhouas stated they were self taught, relying on divine intervention to guide their practices, and one said he was trained by his father in law. When I asked anyone—villagers, HCPs, whomever—what it meant to be a bhoua, the responses I received most frequently were: (1) a practitioner of the black arts; and (2) a remover of ghosts.

The first bhoua I observed was 45 years old, had been practicing for about 15 years, was married and had eight children, one of whom had died. This bhoua not only treated various illnesses such as malaria, snake bites, and diarrhea, but also had divinatory skills which he used for “diagnosing” illnesses and for predicting the future of his patients. His practice entailed moving around the countryside providing healing to those in need, worshiping at temples, and praying in seclusion. When asked, he stated that no one taught him to be a bhoua. Instead, he recounted a story of how when he was visiting an old, small temple, gods and goddesses appeared to him and instructed him to become a bhoua. They gave him the energy and supernatural power to do this work. This first bhoua demonstrated how he treats illnesses. He started his demonstration of healing by
laying a small mat on the ground. He used seeds and kesuda leaves in his divinatory work, speaking softly, shaking seeds from his hand, and making interpretations.

The other two bhouas I observed were a father-in-law and son-in-law who were brought to me together while I was visiting the house of the Kadipani serpunch. The father-in-law was 70 years old and frail, carrying a large walking stick, his head wrapped in a white scarf. He told me he was the oldest person in Kadipani village and that he had been practicing as a bhoua for a long time, about 45 years. He said he was self trained and that he had been directed by the gods to do this work. This elderly bhoua then introduced me to his son-in-law, who he had personally trained in the practice of the art of healing.

The son-in-law told me he was about 55 years old, that he had been practicing as a bhoua about 25 years, that he uses traditional medicinal plants to treat headache and abdominal pain, and that he also delivers babies. Fortunately, he was willing to demonstrate for me how he treats malaria. This demonstration included the use of leafy branches torn from a neem tree to sweep the body of the person who is sick, all while he and his father-in-law loudly chanted mantras, calling on the Hindu deity Krishna for divine intervention to heal the patient.

**Participant Observation—Ayurvedic and Homeopathic Practitioners**

I observed seven Ayurvedic doctors and five homeopathic doctors practicing in Kawant. As mentioned, there were no unani tibb practitioners in either Kadipani or Kawant. Each Ayurvedic or homeopathic doctor had his or her own private clinic where they saw patients for a wide variety of maladies. Two of these HCPs were women, 10
were men. Their private clinics were typically small store fronts where patients seeking treatment could just walk in and be seen. These private clinics seemed to be clustered primarily in two areas, the first being where the main road comes into Kawant—a commercial area, the hub of activity where busses stop, trucks make deliveries, and lots of people and animals were present. This is a noisy, bustling commercial rather than residential area. I found many clinic store fronts in this area and would walk from one to the next, visiting, observing and interviewing HCPs. These clinics were small, typically one room with a curtained-off area where patients could be examined. The HCP would sit at a desk waiting for patients.

The second area in Kawant where private clinics were found was toward the center of the village, the same area where the haat (local market) is held every Monday, near homes and smalls businesses alike. This was a quieter area with more personality than the commercial area. I truly enjoyed this part of Kawant because of its numerous small shops selling everything from household utensils, clothing, traditional adivasi silver jewelry, and spices. It looked interesting, it smelled like spices—as I imagined India would smell, and the people were willing to talk. Here the clinics were a bit larger, having more than one room, and the HCP’s practices might include an area of specialization.

During my periods of participant observation in these private clinics I consistently observed the same thing—people who were not trained as allopaths practicing allopathic medicine. Also, while conducting structured interviews with these same HCP, when asked “What type of health care do you provide?”, for which there were six closed
responses they could chose from, before I could even give the interviewee the first response choice, practically everyone said “allopathy.”

Only one allopath interviewed and observed was trained and educated to practice allopathy in Kadipani or Kawant, but numerous ethnomedical HCPs claimed to practice biomedicine, including taking x-rays, prescribing medications, giving injections, suturing wounds, and placing casts on broken bones. I discussed my concern about non-allopathic doctors practicing allopathy with Dr. Vijay Shah, my sponsor who is a trained allopathic physician. We talked about possible explanations for this, such as the shortage of allopathic doctors working in rural areas; the pressing need for allopathic medicine and biomedical treatment modalities; and the demands of patients. As was relayed to me repeatedly during interviews with HCPs, patients frequently come to see an HCP to request a specific form of treatment. The allopathic doctor told me that the Rathwa are particularly fond of receiving injections and will specifically ask for such even if it is not medically warranted.

I considered how this behavior of non-allopaths practicing allopathy might relate to the development of health-related policy in India. HCPs in India are monitored by the Indian government. Only allopaths should be practicing allopathy, but there is little done to address the issue of non-allopaths practicing allopathy for a number of reasons, not the least of which is the increasing need for the provision of such services caused by factors such as a burgeoning population, as well as government-designated population health goals or standards.
Participant Observation—Allopathic Practitioners

I observed two biomedical HCPs in the facilities where they worked. One of these was an allopathic doctor who worked for both the public clinic and public hospital in Kawant, facilities that are located within the same compound. In addition, this allopath also had his own private clinic in Kawant, where he typically worked in the afternoons, working at the public clinic and hospital in the morning and in the evening. The other biomedical HCP was a medical assistant who worked for the GMDC-sponsored dispensary in Kadipani. Though he did not hold a MBBS or MD degree, this medical assistant had been trained in biomedical treatment methods and had been treating patients for 35 years using allopathic/biomedical methods such as giving inoculations, treating snakebites, suturing wounds, taking x-rays and placing casts on broken bones, giving medications, etc. He specifically stated that he does not deliver babies, and that extreme cases are referred to the allopathic doctor in Kawant.

It was quiet during my visit to the GMDC dispensary. One patient was just leaving as I was arriving, and people occasionally trickled in during my time observing. The medical assistant gave me a tour of his facility (Figure 13), and we talked about the types of cases he typically sees on a given day, focusing on how many Rathwa from Kadipani he might see. He explained that GMDC sponsored the dispensary and that all services were provided free of charge. He also works with a “nurse” or “sister” as he referred to her, who had a variety of health care-related duties including working with women, especially those who were pregnant, including prenatal and post natal care.
The medical assistant told me he has a general practice, treating just about anything that patients present, including stitches, casting of broken bones, taking x-rays, and various other needs. He lives near the dispensary in GMDC housing and may come to the dispensary during the night if there is an emergency. On the day of my visit he saw 19 patients for a variety of issues. He does see patients for malaria, but refers people in sickle cell crisis to the allopathic physician at the public clinic/hospital in Kawant, or if the patient has money for medical care, he refers them to health care facilities in Baroda, a city about 2 hours drive from Kadipani.

The other biomedical HCP included in my participant observation was Dr. P., the only allopath working as a clinician at both the government clinic and hospital (Figure 14) in Kawant. Dr. P. was very accommodating. He invited me to see all that
there was to see in both the public clinic and public hospital, both very busy places seeing to the needs of anyone form the surrounding villages. As the only allopath in the area Dr. P. sees a wide variety of cases, many of which are severe or critical, having been referred to him by other HCPs in the area who are not able or equipped to deal with serious health-related problems. Dr. P. lives in a small residence within the government health care compound and is available “all the time” round the clock, according to him. This makes Dr. P. a very busy man. Dr. P spent a considerable amount of time with me during my stay in Kadipani and my observations in Kawant. To show my gratitude, I gave various medical items (latex glove, alcohol swaps, antibacterial hand cleaner, etc.) to Dr. P.

Figure 14. Government hospital in Kawant.
My first day of observation at the public clinic included Dr. P. and I seeing 15 patients with a variety of maladies in just a couple of hours. Patients were male and female, young and old, acutely or chronically ill, and very cooperative. They were quiet and soft spoken, forming a line at the doorway to the examine room which extended into the hall. I enjoyed participant observation at the public clinic, as it was so busy. I got to meet many people, all curious about who I was, some mothers wanting to show me their babies, others thinking I could offer some “American style” medicine that could provide a cure to a long standing malady, such as the resolution of a chronic ulcer on the ankle of a boy who had a club foot.

One interesting case, a 23-year-old married woman with a year-old baby, illustrated the intersection of ethnomedical and biomedical health care practices among the Rathwa. This young woman came to the public clinic complaining of severe pain and swelling in her right breast. She was still breastfeeding her baby, and according to Dr. P. she had mastitis, a condition common in nursing mothers and easily treated. Prior to coming to see Dr. P., this woman had gone to see a bhoua in the village for the same condition. She saw this same bhoua 7 times in 7 days. She had no relief from her symptoms and found her condition worsening.

Dr. P. diagnosed the problem and prescribed an oral antibiotic and pain medication. The woman appeared relieved and left the clinic. When I saw her days later, she was happy and relieved, healthy again. This woman believed in the healing power of the bhoua, and went to see him repeatedly because she was instructed to do so by her mother-in-law. When her illness began to interfere with her ability to care for her home
and family, she sought the services available at the government clinic, which were free. The services of the bhoua cost money, even if just 20 or 30 rupees, which can add up over the course of a week, and seem like money wasted when one does not get better.

Toward the end of our clinic hours on my first day of observation, a family carried in an elderly man wrapped in a blanket and laid him on a bench outside the examination room. The patient was experiencing severe chest pain, and Dr. P. said he was in cardiac arrest. The patient, referred to as Kaa Kaa (uncle), was admitted to the hospital, where he was placed in a bed, had an IV inserted into his arm, and was monitored periodically. Later that morning, I stopped in to see how Kaa Kaa was doing. He was unresponsive with labored breathing and had vomited on his shirt. Kaa Kaa was surrounded by his family, who looked quite worried. Later that same day, before I left Kawant, I stopped in again to check on Kaa Kaa. He was no longer in the hospital. Dr. P. told me the family took him home to die.

I also visited with a number of other patients in the hospital wards that day, including a young woman and her father who had brought her into the hospital due to her experiencing sickle cell crisis symptoms; a man who had eaten poison in a suicide attempt after an argument with his wife; a man who had been beaten by someone he had a dispute with; and a man who had been chopped in the leg with an axe by another man during a fight.

I spoke at length with a young woman with sickle cell disease. Her father told me (with Dr. P. translating) that the woman’s husband had “expelled” her from their home. Due to the severe symptoms of sickle cell crisis that she was experiencing (joint pain,
dizziness, inability to stand or walk) she was unable to carry out her household duties. Her husband, not knowing about sickle cell disease or crisis, thought that the woman was just being lazy and he put her out. The woman returned to the home of her father, who brought her into the hospital. She was lying in bed, had an IV in her arm, and was receiving analgesics for her pain. Dr. P. speculated that she would be released later that day. Perhaps if her husband had known she had sickle cell disease, and what the symptoms are when someone is in sickle cell crisis, he might have been more sympathetic toward her condition. I cover this issue in greater detail in Chapter Eight when I discuss recommendations, follow up research, and education programs.

In another ward of the hospital, I spoke with a new mother and her mother-in-law. The new mother was 19 and had just given birth not an hour before to her first baby, a son. The baby was premature and had low birth weight. In spite of repeated efforts by the new mother, the baby would not nurse—he would not even respond. This was the smallest baby I have ever seen. Dr. P. told me that his chances of survival were not good due to his prematurity, low birth weight, and the fact that he was not nursing, and it was very cold. This was January and the temperature, especially at night, was very low. I did not see that young mother again during my fieldwork, so I do not know what happened with her newborn son after I saw them in the hospital.

**Participation Observation—Rathwa Perceptions of Health Care Practices**

What I noticed most while observing the HCPs in their respective facilities was that, while indigenous/folk medicine practitioners continue to provide health and healing-related services to the Rathwa, the view of these practitioners by fellow villagers appears
to be changing. During my time interviewing villagers and surveying households, they shared their opinions about the quality of services they have received from various public and private HCPs, ethnomedical and biomedical alike, as well as why they seek the services of certain providers over others.

While the severity of an illness and the cost of health care services were critical factors in household health care decision making, people were also influenced by the direction of their elders and long-standing cultural practices, as well as personal and group belief systems. Choosing to seek the services of a biomedical rather than an ethnomedical health care practitioner may be in response to different factors, such as was the case with the young mother with mastitis. Her symptoms did not improve after seven visits to the bhoua; her decision to go to the public clinic was prompted by cost, since she had already paid him seven times. The public clinic was free. For the mother with the premature, low birth weight, newborn son, institutional delivery was the wisest option, since the baby was coming early and it was her first delivery.

Deshora (1995) notes that across India there is concern about a growing imbalance in the male/female ratio, because of selective abortion, and the status of females is significantly lower in tribal and non-tribal communities. I considered how this might translate into differential access to health care systems. During my preliminary visit in June 2007, the medical director at the public hospital informed me that the Indian government was encouraging hospital delivery of babies instead of home births with the assistance of traditional birth attendants. During an interview with a traditional birth attendant, the woman seemed to be telling me what she thought I wanted to hear. While
she had worked as a traditional birth attendant for years, recently she had attended a government-sponsored class on delivering babies. Rather than telling me what she traditionally would do to facilitate the birth process, she told me what the government had instructed her to do as a birth attendant. This made it difficult for me to learn what had been practiced in the past, but also made building rapport difficult, as the woman appeared to fear going against what the government had taught her.

Recognizing that “culture affects our perceptions and experiences of health and illness in many ways, and these perceptions and experiences change as culture changes” (Loustaunau and Sobo 1997:17), it follows that as the Indian government introduces health care systems and practices that differ from those traditionally practiced among adivasi groups, there may be a clash between tradition and modernity, disparity in power, and changes in cultural practices, especially as they relate to long-practiced indigenous/folk/ethnomedicine and rapidly developing biomedical practices.

Participant Observation—Some People Do Speak English!

Early one day during my time in Kadipani, I ventured out by myself. My translators, who were college students on a brief break from their schooling, were reviewing their studies for upcoming exams, and needed time for that work. That day, I planned to meet with the medical assistant who worked at the GMDC dispensary in the center of Kadipani. I had met this medical assistant during my preliminary visit in June and had spoken with him in English, so I was confident I could do so again this day. I walked by myself from the GMDC guest house to the dispensary. Along the way I passed
a number of people who looked my way; some acknowledged me, while others just watched me walk by.

I arrived at the GMDC dispensary and introduced myself to the medical assistant who runs the facility. After some small talk and a tour of the facility, we began the interview. When I was ready to leave, the medical assistant suggested I walk across the road to see the local primary school and the GMDC employee housing complex. I took his advice and walked toward the housing complex. On my way, a man drove up on his motorbike, stopped, and spoke to me in English, asking why I was there and what I was doing. We spoke briefly—he told me a bit about the area and invited me to visit him at his home sometime. I thanked him and went on my way.

As I proceeded back to the GMDC guesthouse, I was stopped again by another man who called to me in English and motioned for me to come to where he was sitting at the building next to the Shiva temple. I approached, somewhat skeptical and wary. The man spoke excellent English. He said he saw me walk by earlier and wondered who I was and what I was doing. We talked outside the entrance to the building, and he then invited me inside. The building was the living quarters for the Hindu priest who ran the Shiva temple, as well as guest quarters for visiting sadhus (Hindu holy men).

Bearing in mind that I was an unaccompanied female, and that I was entering living quarters for men, I became apprehensive. Inside were four men, one of them the priest from the Shiva temple. I had met this priest on two prior occasions, the first during my preliminary visit in June when I unknowingly entered the temple during a time when only men were allowed; and the second when my translator and I visited during a worship
service. This priest spoke a little English and we chatted briefly about my stay in the village.

The other three men, all of whom had varying degrees of English fluency, told me they were traveling sadhus, in the area because they were circumambulating (walking around) the perimeter of the Narmada River, one of the seven most holy rivers in India. Walking the perimeter of the Narmada River is considered a meritorious act, a way of showing reverence for the goddess Narmada. We talked at length about why they were walking around the Narmada River (worship), how long it would take (approximately two years), and the total distance they would be walking (2,600km). The sadhus asked about my project and how I liked living in India. I was invited to have lunch with them.

In addition to my previously being instructed by a number of people to not travel anywhere alone, I was also told not to eat or drink anything offered to me while in the village, but for food and water at the GMDC guesthouse. Now I had a dilemma on my hands. I had just received an extensive lecture on the power of the goddess of the Narmada River. One sadhu told me she protects him on his travels, and that she had manifested me to him so he could speak to someone, in English, about his trek. To refuse to have lunch with these men would have invalidated what they believe—that the goddess Narmada would protect us all. At first I politely declined, saying that I had left my translators behind at the guesthouse, much time had passed since I left that morning, and that people would begin to worry. Again, I was told by the sadhus that the goddess meant for me to be there. I finally accepted their invitation and we moved into another room for lunch, sitting on the floor and eating with our hands food that was absolutely delicious.
After we had finished our food, I took my leave, thanking them for their hospitality and saying good-bye. I walked back to the GMDC guesthouse where upon my return I was immediately quizzed at length by my translators as to where I had been, what I had been doing, and who I had been with. They were stunned when I relayed to them my morning activities. Why would I do such a thing? They eyed me suspiciously and returned to their studies while I went to my room to write field notes. Lingering in the back of my mind were thoughts about whether or not I would get sick, having eaten food I was instructed not to eat. No, I did not get sick, and it was some of the best food I ate while in India. When I told Dr. Vijay about this experience, he looked at me and said, “of course you didn’t get sick.” That I met six people in less than two hours who all spoke English was also intriguing. Such an experience could not have been planned.

**Structured Interviews with Ethnomedical and Biomedical Health Care Providers**

Structured interviews consisting of open and closed-response questions were conducted with 20 ethnomedical and biomedical HCPs in both the public and private health care sectors. These HCPs practice in either Kadipani \( n = 5, 25 \text{ percent} \) or Kawant \( n = 15, 75 \text{ percent} \) villages. Most of the non-bhoua HCPs \( n = 16 \) spoke some English, with a number being fluent. Translators accompanied me to my interviews and would translate or explain confusing words or concepts. All interviews were voice recorded, and photos were taken of each HCP and his/her clinic/work location if they so agreed.

To be considered an HCP, and to be eligible for inclusion in this study, the practitioner had to be a bhoua, or an Ayurvedic, homeopathic, or allopathic/biomedical
doctor. One medical assistant who had been trained in allopathy had 35 years experience in the field, and who worked at the local dispensary in Kadipani, was included in the data collection. He provides a wide array of services for the Rathwa, and the dispensary where he works is located in the center of Kadipani village. The services provided at this dispensary are free, as it is sponsored by GMDC, which is just a short distance up the road, and easily accessible by the Rathwa. A female traditional birth attendant who was Rathwa and lived in Kadipani was also included in my analysis.

Of the 20 HCPs interviewed, 85 percent were male \((n = 17)\) and 15 percent were female \((n = 3)\) (Figure 15). The HCPs ranged in age from 24 to 70, with the mean age being 39 and the median age 37. There was a tri-modal distribution by age, with peaks at 28, 30, and 37 years (Figure 16).

When asked “Do you have an area of specialization?” 25 percent \((n = 5)\) replied yes, and 75 percent \((n = 15)\) replied no (Figure 17). One allopath stated he specialized in public health, having had 14 years in the field. An Ayurvedic practitioner explained that he specialized in the treatment of proctological cases, using thread medicated with Ayurvedic herbs to tie off and remove hemorrhoids. One bhoua said he specializes in the treatment of headache and abdominal pain, treating these ailments with locally available medicinal herbs, and another bhoua said he specializes in the treatment of neck and shoulder muscle strains. The traditional birth attendant only delivers babies.

The remaining HCPs stated they were general practitioners, seeing a wide variety of cases in their clinics. All noted that some conditions are seasonal, such as an increase in the number of snake bites and malaria cases during monsoon season. Snake bites
increase when people are outside more, preparing their fields for planting. When it rains, there is standing water where mosquitoes breed and proliferate, and people are increasingly at risk for bites by the female anopheles mosquito that carries the parasite that causes malaria.

Both HCPs affiliated with the government-run public clinic and hospital in Kawant (n = 2) were interviewed. This included the block health officer who oversees operations at both the clinic and hospital, and the physician who daily treats patients in both the clinic and the hospital. Both these HCPs were allopathic/biomedical doctors holding MBBS
degrees from medical colleges in India. Each had considerable experience in the provision of health care services for adivasi groups.

During my structured interviews, when asked “What type of health care service do you provide?” 15 percent \((n = 3)\) responded “Allopathic/Biomedical,” 40 percent \((n = 8)\) responded “Ayurvedic”, 25 percent \((n = 5)\) responded “Homeopathic”, 15 percent \((n = 3)\), identified as bhouas, and 5 percent \((n = 1)\) indicated “Other” (Figure 18). Interestingly, all HCPs, except the bhouas and the traditional birth attendant, told me that they practice allopathic medicine, even those who were trained in Ayurveda and homeopathy. It was explained to me that out of need and patient demand, all HCPs (excluding the bhouas)
Figure 17. Do you have an area of specialization?

identified as bhouas, and 5 percent \( (n = 1) \) indicated “Other” (Figure 18). Interestingly, all HCPs, except the bhouas and the traditional birth attendant, told me that they practice allopathic medicine, even those who were trained in Ayurveda and homeopathy. It was explained to me that out of need and patient demand, all HCPs (excluding the bhouas) practice allopathy to a greater or lesser degree. This could include the prescribing of analgesics, antibiotics, or anti-malarials such as chloroquine, the drug of choice for malaria in this region, taking x-rays, suturing, or giving inoculations to children. None of the Ayurvedic or homeopathic HCPs claimed to deliver babies, though one of the bhouas
said delivering babies was one of his duties. Delivering babies was the only health care service provided by the traditional birth attendant.

![Graph showing health care services provided by HCPS]

**Figure 18. What type of health care service do you provide?**

All HCPS were asked about their health care-related training and education, where they went to school. Bhouas were asked how they came to be a bhoua—specifically what prompted them to enter the realm of healing. Being a bhoua is a male vocation. One is called or chosen by the divine to take up the work. One bhoua stated that no one taught him to be a bhoua, that a goddess had come to him in a dream many years ago and she gave him energy to be a bhoua. He claimed that he had supernatural powers, and thus he was able to heal those in need. The two other bhouas were a father-in-law and his son-in-
law. The father-in-law told me had trained the son-in-law in techniques of healing, including the use of medicinal plants as well as which mantras to chant while treating illnesses. Both bhouas claimed to have been called by the divine to become bhouas.

The length of time that each HCP had been practicing varied, with the majority, 55 percent, having over 10 years’ experience practicing in their respective disciplines. Twenty-five percent of respondents ($n = 5$) indicated that they had been practicing between one and three years; 15 percent ($n = 3$) stated they has been practicing between 4-6 years; 5% ($n = 1$) had been practicing 7-9 years; and 55 percent ($n = 11$) had been practicing over 10 years. One bhoua claimed to have been practicing for 45 years, another for 25 years. The GMDC medical assistant had been practicing over 35 years (Figure 19).

![Figure 19. Length of time practicing as an HCP.](image)
My interest was in approximately how many Rathwa from Kadipani each of these HCPs treated per day. A closed-ended question, “Approximately how many Rathwa from Kadipani do you treat per day?” (Figure 20) was posed with the following response choices provided: (1) None; (2) 1-3 per day; (3) 4-6 per day; (4) 7-10 per day; (5) More than 10 per day; (6) Other. Fifty percent (n = 10) replied “1-3 per day”; 20 percent (n = 4) replied “4-6 per day”; 10 percent (n = 2) responded “7-10 per day”; 10 percent (n = 2) responded “More than 10 per day”; and 10 percent (n = 1) responded “Other.”

Figure 20. Approximately how many Rathwa from Kadipani do you typically treat per day?
Since the incidence of malaria among the Rathwa was an interest in my research, HCPs were asked “How frequently do you treat Rathwa for malaria?” (Figure 21), with five forced-response choices. Twenty percent \( (n = 4) \) of respondents indicated that they never treat Rathwa for malaria; 35 percent \( (n = 7) \) stated that they treat Rathwa for malaria 1-3 times per week; 5 percent \( (n = 1) \) indicated treating Rathwa for malaria 4-6 times per week; 5 percent \( (n = 1) \) treat Rathwa for malaria more than 10 times per week; 10 percent \( (n = 2) \) indicate treating Rathwa daily for malaria; and 25 percent \( (n = 5) \) stated “Other.”

Figure 21. How frequently do you treat Rathwa for malaria?

Sickle cell disease, which may be found in populations where malaria is endemic, and is estimated to occur in 20-30 percent of Rathwa adivasi, was also an issue key to my
research. HCPs were asked “How frequently do you treat Rathwa for symptoms related to sickle cell anemia?” with the following forced response choices: (1) Never; (2) 1-3 times per week; (3) 4-6 times per week; (4) 7-10 times per week; (5) More than 10 times per week; (6) Daily and (7) Other. Twenty-five percent \((n = 5)\) stated that they never treat Rathwa for symptoms of sickle cell anemia; 30 percent \((n = 6)\) indicated that they treat Rathwa for sickle cell anemia 1-3 times per week; 15 percent \((n = 3)\) indicated 4-6 times per week; 10 percent \((n = 2)\) indicated more than 10 times per week; 5 percent \((n = 1)\) indicted treating Rathwa for sickle cell anemia daily, and 15 percent \((n = 3)\) indicated Other (Figure 22).

![Figure 22. How frequently do you treat Rathwa for symptoms related to Sickle Cell Anemia?](image)

Figure 22. How frequently do you treat Rathwa for symptoms related to sickle cell anemia?
When asked if they collaborate with other HCPs when treating Rathwa, 55 percent \((n = 11)\) stated “Yes” and 45 percent \((n = 9)\) stated “No.” All HCP interviewees \((n = 20)\) responded “Yes” when asked, “Do your Rathwa patients use the services of other health care practitioners, including those of a bhoua, while they are receiving treatment from you?” Ninety-five percent \((n = 19)\) of interviewees stated that Rathwa patients do not ask what type of HCP they are. Fifty-five percent \((n = 11)\) of HCPs do not tell their patients what type of health care services they provide. I discovered while interviewing Rathwa that they use the term “doctor” for anyone, except bhouas, who provides health care-related services. People rarely knew what type of HCP (e.g., allopathic, Ayurvedic, or homeopathic) they were visiting. However, they did distinguish between those in the public sector, where they could receive free services, and those in the private sector, where patients had to pay a fee. Interestingly, a few Rathwa respondents would only see a bhoua for health care needs, with one female respondent stating that she did not trust doctors. Six percent \((n = 7)\) of respondents never went to the bhoua regardless of the illness, instead going to either the public or private clinics, depending on the type of illness, the cost, and the recommendations of others who had seen that same practitioner and had received favorable service. One woman told me that she delivered a baby via cesarean section in the public hospital, had difficulties with the birthing process, needed a blood transfusion, and was subsequently diagnosed with sickle cell disease. Due to the trauma of this experience, and lingering pain after the procedure, this woman had little faith or trust in biomedical doctors and avoided using their services whenever possible.
When asked “How would you rate the general health status of the Rathwa, with forced response choices of: (1) Excellent; (2) Good; (3) Fair; (4) Bad; and (5) Don’t know, 60 percent \( (n = 12) \) rated Rathwa health status as “fair”; 30 percent \( (n = 6) \) rated it “bad”; and 10 percent \( (n = 2) \) stated they “don’t know.” One HCP said he could not assess Rathwa overall health status as he was fairly new to the area and did not know many of the people. It was interesting and telling that none of the HCPs rated Rathwa health status as excellent or good. I was not necessarily surprised by this, but I was concerned to know why these HCPs believed this.

When I asked an open response question probing each HCP as to why he or she rated Rathwa overall health status as they did, some of the responses included: “People are poor, they don’t have any money, and life is hard”; “Hygiene is a problem, this leads to illness”; “People are malnourished, they are ignorant about nutrition, eating just maize, rice, and cereals”; “Their belief systems, they believe diseases are caused by angry gods, black magic and witchcraft”; “Lack of education”; “First they go to the bhoua, the problem gets worse, then they go to a doctor”; “Drinking alcohol”; “Poor immunity”; “Lifestyle”; “Addiction—alcohol, smoking, chewing tobacco”; “Hard, overwork” “Carelessness”; “Bad water, especially river water”; “Lack of proper knowledge.”

All HCPs indicated that poor hygiene, which included the lack of bathing, or bathing with one’s clothes on, was a serious concern, as was the practice of not wearing shoes and walking in areas where people defecate, which lead to people becoming infected with worms. All HCPs interviewed stated that malnutrition, or the limited diet of the Rathwa, was a strong factor in their poor health status. The Rathwa diet consists mostly
of maize, with very little protein. Unclean water for both drinking and cooking was mentioned repeatedly by HCPs as a cause of poor health. When I surveyed Rathwa households, I asked were they obtained water for cooking and drinking. Ninety-one percent \((n = 91)\) of Rathwa get their water from hand pumps, 13 percent \((n = 16)\) from local wells, 9 percent \((n = 11)\) from a tap in the vicinity of their homes, and 3 percent \((n = 3)\) from the Narmada River. During a trip I made with my survey workers to the Narmada River, I observed people as well as animals bathing in the river in the same area where people were collecting water for drinking and cooking.

Lack of knowledge or formal education about the prevention or treatment of illnesses such as malaria, diarrhea in babies and young children, respiratory infections, or sexually-transmitted infections was cited as a concern by the HCPs. They believed that with more education and knowledge, the Rathwa would be able to make better health-related decisions. This concern included Rathwa beliefs about the causes of illnesses. The practice of going first to the bhoua for treatment was viewed by non-bhoua HCPs as the source of many treatable or preventable health problems. Non-bhoua HCPs believed that this pattern of Rathwa decision-making caused new health-related problems or exacerbated existing ones. When I asked the HCPs what they thought the Rathwa believed caused illness and disease, the responses included: “They do not know about these things”; “Superstition”; “Black magic”; “Angry gods” and, “Witchcraft.” During my structured interviews with a random sample of Rathwa, their responses to the same question of what causes sickness mirrored those of the HCPs, apart from some who did know that mosquitoes cause malaria, and that drinking unclean water can make you sick.
Structured Interviews with Rathwa Adivasi Living in Kadipani Village

Structured interviews ($n = 30$) were conducted with Rathwa living in Kadipani. Twenty-five percent of Rathwa households ($n = 30$) participated in structured interviews, with 33 percent ($n = 10$) of interviewees being male and 67 percent ($n = 20$) being female (Figure 23). Interviewees ranged in age from 21 to 65 years, with a mean of 36, median of 35 years, and mode of 45 (Figure 24). Seventy-seven percent ($n = 23$) of interviewees stated they worked as farmers, 13 percent ($n = 4$) were laborers, 7 percent ($n = 2$) worked for GMDC, and 3 percent ($n = 1$) identified as a housewife (Figure 25).

![Figure 23. Respondent sex/gender.](image)

Responses to the closed-ended question “How good is your health” varied, with 13 percent ($n = 4$) replying “Excellent”, 53 percent ($n = 16$) “Good”, 17 percent ($n = 5$) “Fair” and 17 percent ($n = 5$) “Poor” (Figure 26).
Figure 24. Respondent age.

Figure 25. Respondent employment.
Interviewees were also asked how frequently they visit three types of HCP: (1) a bhoua; (2) a doctor at a government clinic or hospital; and (3) a doctor at a private clinic. When asked “How often do you go to a bhoua when you or a person in your family is sick?” 3 percent \((n = 1)\) of respondents replied “Never”, 37 percent \((n = 11)\) “Sometimes,” 30 percent \((n = 9)\) “Almost always” and 30 percent \((n = 9)\) replied “Always” (Figure 27). Interviewees were also asked how often they see a doctor at a government clinic (Figure 28) and how often they see a doctor at a private clinic (Figure 29). Prior to asking the question and providing the forced-response answer choices, I explained what each answer meant. Ten percent \((n = 3)\) of interviewees replied that they “never” see a doctor at the government clinic. Twenty-three percent \((n = 7)\) stated “sometimes,” 37 percent \((n = 11)\) stated “almost always,” and 30 percent \((n = 9)\) “always” see a doctor at the government clinic when they or
Figure 27. How often do you go to the bhoua?

Figure 28. How often do you or your family members see a doctor at the government clinic?
a family member is sick. Responses to the question “How often do you or your family members see a doctor in a private clinic?” (Figure 29) were: 27 percent (n = 8) “Never,” 63 percent (n = 19) “Sometimes,” and 10 percent (n = 3) “Almost always.”

**Rathwa Household Surveys**

Sixty-two percent (n = 75) of household survey respondents were female, and 38 percent (n = 46) were male (Figure 30). Respondents ranged in age from 19-80 years old, with a mean age of 37, median and modal age of 35. The number of people living in a given household varied from 1 to 11 people (Figure 31), with a mean household size of 5. Eighty-eight percent (n = 107) of respondents reported they were married, while 12 percent (n = 14) stated they were widowed. Eighty-four percent (n = 101) respondents told me that
they had never attended school, while 16 percent \((n = 20)\) had attended school, with the total number of years of schooling varying from 0-10.

![Figure 30. Rathwa household survey respondent sex/gender.](image)

![Figure 31. Number of people living in respondent’s household.](image)
Forty-nine percent of homes \((n = 59)\) had electricity, 88 percent \((n = 107)\) owned at least one chair, 45 percent \((n = 55)\) had a table, and 98 percent \((n = 119)\) owned a cot or bed. The Rathwa sit on the floor to eat, so having a table or chair to take one’s meals is not essential, though people did use chairs to sit outside the entrance to their homes and visit with others. Nineteen percent \((n = 23)\) had three or more livestock (e.g., cow, goat, bullock, water buffalo, horse) and 14 percent \((n = 17)\) owned an animal-drawn cart.

**Rathwa Health Status**

When asked “How good is your health?,” 3 percent \((n = 4)\) of survey respondents chose “Excellent,” 14 percent \((n = 17)\) indicated their health was “Fair,” 72 percent \((n = 87)\) felt their health was “Good,” and 11 percent \((n = 11)\) stated their health was “Bad.” Health care-related decision making, one of my primary research questions, was a joint process 49 percent \((n = 59)\) of the time, with both the head of the household and his wife deciding together who would get what type of health care, where, and when. The head of the household was the sole health care decision maker 38 percent \((n = 46)\) of the time.

Respondents were also asked to rate the status of household members, with response choices being (1) “Excellent”; (2) Good; (3) Fair; or (4) “Bad.” Very few respondents rated the health status of fellow members of their household as “Excellent” or “Bad.” Most stated family members experienced “Good” or “Fair” overall health, citing issues such as poor nutrition/diet, joint pain from overwork, skin diseases, and headaches as reasons why they chose the ratings they did.

One woman, when asked about the health of the people in her household, proudly, beamingly, told me that her husband never gets sick. Her husband, who was nearby,
nodded in agreement and smiled. This was good news for this family, as the woman has sickle cell disease, rating her health status as “Fair.” She had experienced a couple of difficult pregnancies, and complained of lingering back pain since she had a Cesarean section delivery at the public hospital. This couple had three young children, who they take to a private clinic when they need health care, which the mother reported is infrequent. Fortunately, this woman told me the name of the bhoua she sees for treatment, revealing that she is the only person in the household to see a bhoua. The other family members see a doctor at a private clinic when necessary. Throughout my time surveying and interviewing, I noted that female respondents reported seeking the services of a bhoua, as well as a going to a local temple, as a method of “treating” illness more frequently than males did.

Chi-square tests showed significance between respondent sex and respondent evaluation of health status. Males evaluated their health status higher than did females. Sixty-five percent (n = 19) of males rated their health as “Excellent” or “Good” and 35 percent (n = 11) of females rated their health as “Excellent” or “Good.” This variation could be due to a variety of factors, such as differential in access to health care, reproductive health, or type of work. Women care for the family, home, and farm. Men tend to the farm, but some are employed outside the home. If a man works for an employer that provides on-site health care services, such as GMDC, his health status may be better than that of females, since he has access to employer-provided health care services that females do not.

Chi-square testing revealed significance between respondent age and evaluation of health status. Older respondents of both sexes rated their health status lower then younger
respondents of both sexes. I expected these outcomes based on qualitative data I collected while speaking with respondents informally and spending time with them as a participant observer. There was no statistical significance for respondents employed by GMDC (only males worked for GMDC) and evaluation of health status. This was unexpected as I thought employer-provided onsite health care would result in GMDC employed respondents rating their health status higher than non-GMDC employed respondents. Since the Rathwa men employed by GMDC typically held labor-related jobs, it follows that the demands of such work, coupled with the responsibilities of farm-related work at home could make for stress on an individual’s health.

The incidence of malaria among the Rathwa is a key issue in my research, as is sickle cell disease, a genetic condition found among populations where malaria is pervasive. Since malaria is endemic to the region, and is considered a major health-related problem by the Indian government, I asked survey respondents “Has any health care provider told you that you or any person who lives here has had malaria in the last year?” Thirty-two percent ($n = 39$) responded “Yes,” saying that they or someone in their household had been diagnosed with malaria in the last year, and 68 percent ($n = 82$) replied “No” (Figure 32). I was somewhat surprised at the low number of positive responses. Most respondents appeared to know what malaria was, frequently referring to it as “fever.”

In addition, when asked about visits to the various HCPs, as well as the use of home remedies and medicinal plants, many people indicated fever as the primary reason for using these health-related interventions. People who stated that a household member had had malaria in the last year were also asked about the relation of the person with malaria, their
age when they got sick, if they still had malaria, how long they had had malaria, if they took anti-malaria medication or used home remedies, and if that person had also had malaria within the last three years. Many people indicated that they used neem in a variety of forms to either prevent or treat malaria. Chloroquine was the anti-malaria medication prescribed most frequently.

Figure 32. Incidence of malaria in surveyed households.

I also asked survey respondents about the methods they used to prevent malaria, such as sleeping with bed nets, burning mosquito coils, spraying their homes with pesticides, using neem leaves in any manner, penning their livestock outside to decrease mosquito attractors, covering water vessels to eliminate mosquito breeding grounds, applying chemicals to their skin, or any other measure they might employ to repel mosquitoes. Forty-one percent ($n = 50$) of survey respondents indicated that their household does use mosquito nets when sleeping at night when they are most vulnerable to
being bitten; 59 percent \((n = 71)\) said they do not (Figure 33). Ninety-two percent \((n = 111)\) of respondents had not used a chemical spray to kill mosquitoes in the last year, while only 8 percent \((n = 10)\) had. The village leader told me that no chemical spraying project to deter mosquitoes had occurred in Kadipani in the last year.

![Figure 33. Household usage of mosquito bed nets.]

**Sickle Cell Disease**

Sickle cell disease (SCD) is frequently found in populations where malaria is endemic. During my interviews and surveys, I asked questions about the incidence of SCD, how a person who claimed he or she had SCD came to be diagnosed (e.g., while hospitalized for crisis symptoms, or for some unrelated health issue, etc), and symptoms they may have experienced both before diagnosis as well as during sickle cell crisis (SCC), such as dizziness, giddiness, or joint pain.
Survey respondents were asked whether any health care provider had ever diagnosed them or a household member with sickle cell anemia. Only 17 percent ($n = 21$) of households indicated “Yes,” while 83 percent ($n = 100$) replied “No” (Figure 34).

![Figure 34. Incidence of sickle cell anemia in Rathwa households.](image)

**Barriers to Seeking and Receiving Health Care**

Household survey respondents were asked about barriers to receiving necessary health care. The question stem was: “Many things can prevent people from getting health care for themselves or persons in their household. Indicating ‘Yes’ or ‘No,’ which of the following are a problem when you or a person in your household wants health care?”
Respondents were asked to respond to each of the following: nine problems to getting health care: (1) getting permission to go; (2) getting money for needed treatment; (3) the distance to the health facility; (4) having to take transport; (5) finding someone to go with you; (6) no female provider available; (7) no qualified health care provider; (8) concerns that no drugs are available; or (9) physical disability or handicap.

**Getting Permission and Finding the Money**

Seventy-three percent \((n = 88)\) of survey respondents indicated that getting permission to go for health care treatment was a problem. Ninety-six percent \((n = 116)\) said that getting money was a problem. I was surprised that this response was so high considering that the health care services provided by both the public clinic and hospital in Kawant are free, as are any medications provided there. Apparently, money is a complex issue that needs further research to explore the actual and assumed costs of getting needed health care—not just the cost of the actual services and medications, but also all of the other costs that add to the expense of being treated, such as paying to ride the bus, lost wages, or less tangible or quantifiable costs, including time away from household duties such as child care, food preparation, or tending to livestock.

**Travel Companions and Female Providers**

Sixty-four percent \((n = 77)\) of respondents told me that finding someone to accompany them to an HCP was a problem that interfered with their receiving medical care. Only 35 percent \((n = 42)\) of respondents felt that the lack of a female HCP was a problem, which I found interesting because about two-thirds of my survey respondents were female, and there were only two female HCPs practicing in Kawant, both Ayurvedic doctors. The
male medical assistant at the GMDC dispensary in Kadipani told me that he does not handle female health-related issues, including pregnancy. Instead he has a “sister” or “nurse” attend to those cases.

**Qualified Health Care Providers, Drugs, and Disability**

Only 21 percent \( (n = 26) \) were concerned about the lack of qualified health care providers. As mentioned previously, my perception is that all health care providers except bhouas are grouped by the Rathwa under the umbrella heading of “doctor,” regardless of training or discipline. They referred to me as the “American Doctor,” even though I never introduced myself as such. Possibly, my being in the company of doctors in health care facilities made me a “doctor” by association, as well as my asking people about their health care practices. At one point, while interviewing a family who had a 16-year-old-son who was seriously disabled by tuberculosis of the brain, I was asked what I could do to cure the boy. His parents and siblings looked at me beseechingly, and there was nothing I could say that would ameliorate their pain.

The availability of drugs necessary for treating a variety of maladies was a problem for 29 percent \( (n = 39) \) of survey respondents. Most medications are available free at the public clinic and hospital. They are also provided free at the GMDC dispensary, and, in the case of malaria or fever, are provided at the local fever treatment depot. The Rathwa are exposed to a variety of infectious agents that could cause “fever,” a catch-all phrase for any elevation of body temperature from that accompanying childhood illnesses to full blown malaria. This was an ailment for which many people sought treatment, and which they told me about when I visited with them. Some chose to use home remedies, such as tea made
from neem, while others preferred that the doctor provide antibiotics, especially injections. Hardiman and Raje (2008) have also encountered this phenomenon of injections being highly desirable, even when not medically warranted, in their work with adivasi in Gujarat. Only 10 percent \( (n = 12) \) of survey respondents indicated that disability or handicap interfered with their receiving health care.

I performed multidimensional scaling on the Rathwa household survey data to determine variable clustering related to health status evaluation and health care practices. Fifteen variables were tested in order to determine clustering of variables related to health. Variables included: (1) sex; (2) respondent health status; (3) persons in the household having been diagnosed with malaria in the last year; (4) household use mosquito nets at night; (5) persons in the household having been diagnosed with SCD; (6) persons in the household having had a blood test for SCD; (7) willingness to get blood test for SCD; (8) visits to a private clinic; (9) visits to a private hospital; (10) visits to a public clinic; (11) visits to a public hospital; (12) visits to a bhoua; (13) visits to a homeopathic practitioner; (14) visits to an Ayurvedic practitioner; (15) visits to a medical doctor.

Prior to conducting my non-metric MDS analysis, I considered my hypotheses or expectations as to how my variables might group together, as well as why. I expected to see four clusters in the plots of my output with one of those clusters being larger. I also expected there to be fairly close clustering in one quadrant of the variables pertaining to malaria and sickle cell disease due to the nature of their respective topics. This did occur. I expected that sex and health status could be anywhere in the plot, and the variables...
pertaining to HCPs could be anywhere in the plot with not particular grouping. This also occurred.

This model worked well for my dataset. The amount of stress on the model, which is representative of how much variation there is in the model was low (.19099), and RSQ was high (.77586). The resulting Alscal output was good. The Euclidean distance models and scatterplots of linear fit were revealing. It helped to see my variables clearly indicated on the plots, the distribution of the dots, which variables grouped together, and where these clusters were located within each plot. Relationships that I suspected would be present were present, as well as those I did not think of (Figure 35).

Figure 35. Multidimensional scaling plot for health-related variables.
Discussion of Findings

A Pluralistic System of Health Care

The impact of a society’s cultural beliefs about health and sickness on individual and group health status is significant to the planning and provision of healing and health-related services. Equally important is the process an individual or group goes through when faced with having to make a health care decision either for him or her self or for another. Of increasing significance is the co-occurrence of two different health care systems, such as the ethnomedical and biomedical systems found in Kadipani and Kawant, with multiple HCPs frequently providing services for the same patient simultaneously, services that may at times be oppositional, and other times complementary.

The ethnomedical and biomedical health care options available to the Rathwa in both Kadipani and Kawant make for an interesting and at times contradictory health care system that might not always provide what people need. It appears that many of the services provided are in response to what patients ask for, rather than being consistently based on formal evaluation of symptoms, diagnosis, and the prescription of appropriate treatment(s). The plurality of health care services available to the Rathwa may have mixed short and long term outcomes. My data indicate that individuals in search of treatment frequently access multiple health care providers simultaneously, typically being prompted by the need for rapid relief of symptoms which affect not only quality of life but the ability to support one’s family.

Health care decision-making was influenced most frequently by factors such as cultural beliefs systems, local traditions, availability, cost, and convenience. During
interviews with villagers about their health care and healing practices, a majority of respondents stressed their reliance on “tradition” or what they have always done when faced with a particular health-related issue. One respondent told me “I go to the Bhoua because my elders tell me to.” Typically, the Bhoua will provide his healing service and then instruct the person to go see a doctor.

Some respondents indicated that they simultaneously receive services from multiple HCPs, while also using locally grown medicinal plants for home remedies (e.g., neem for malaria, ardusi for coughs and colds). In addition, many relayed that treatment for illness may also entail praying at the temple, which was common for cases of snake bite, or when people believed an illness was caused by witchcraft, malevolent gods, or a curse. All HCPs were fully aware that their patients use multiple treatment modalities simultaneously, and that the bhoua is typically the first line of defense for practically any illness. This information was relayed to me disparagingly, with the HCPs stating that the person’s illness could have been relieved much sooner had they not gone to the bhoua first, instead seeing a doctor.

This phenomenon causes me to consider the role of all HCPs. When I interviewed the non-bhoua HCPs, everyone claimed that he or she practiced allopathy. This is prohibited by the Indian government, but it occurs for a number of reasons, most typically because there is an insufficient number of allopaths who are willing to live and work in rural areas, and because of patient demand for allopathic treatment options such as prescription medications (anti-malarials, antibiotics, etc.), injections, and x-rays.
There are many traditional adivasi healing and health care practices that are valuable and that may complement biomedical health care practices (Nayak and Babu 2003:308). Critical to such a collaborative or complementary relationship is recognition of the benefits of various ethnomedical practices, many of which have stood the test of time, and that could continue to be used to ameliorate sickness, when and where appropriate. The establishment of culturally appropriate and situation or illness-specific intervention and education programs could result in “effective need-based health care strategies” (S. Basu 1992:15) that target problems specific to adivasi lifestyle, such as nutrition and work-related health issues, thereby improving quality of life while preserving dignity, tradition and cultural practices.

The Rathwa of Kadipani village have numerous health care-related needs, some critical and acute, others chronic. The pluralistic health care system available to them appears to blend into one whole where all HCPs except for bhouas are considered “doctors,” with no distinction being made among HCP disciplines or health care training and experience. The result is a mélange of services that try to meet the needs of the population by at times giving people the treatment they ask for whether or not it is directly indicated by symptoms presented or formal diagnosis. This phenomenon is not atypical, having been noted by Hardiman and Raje during their work with adivasi in Gujarat State. They too encountered adivasi who demanded injections for a variety of illnesses, regardless of whether or not they were medically warranted, as well as the concomitant use of bhagats, their term for ritual specialists who use herbs, plants, and animal products to effect healing (Hardiman and Raje, 2008:44), a healer similar to a bhoua.
There is a change occurring in health care decision making practices among the Rathwa. This change is being prompted by two forces: (1) the people themselves who request a particular type of treatment, such as an injection, and (2) the Indian government, which is promoting biomedical over ethnomedical practice in many instances, such as family planning clinics that include female sterilization procedures, polio vaccines for children, and institutional births.

**Socially Constructed Beliefs about Sickness and Health**

The intent of this research was to examine both the micro and macro perspectives of Rathwa health care and healing practices, situating these within social constructivist and political economy theoretical frameworks. As a social constructivist, I recognize that how individuals and groups perceive sickness and health may be complex, considering that “well-being and suffering are experienced bodily as well as socially” (Nichter 1992:x). Adivasi and non-adivasi groups alike have access not just to ethnomedical practitioners such as shamans, priests, herbalists, and untrained, self-appointed healers, but also to biomedical practitioners whose approach to health care and healing is scientifically-based and supported by the government.

Personally held beliefs about sickness and health, as well as the quality and cost of care, were the primary reasons why respondents chose the healing and health care systems they did. Repeatedly, respondents told me about good as well as bad experiences with each of the available ethnomedical and biomedical health care systems in Kadipani and Kawant. Some respondents had very strong opinions as to the efficacy of their bhousas, the level of
concern or care shown by public clinic and hospital staff, as well as the cost of receiving services from an HCP at a private clinic.

Rathwa socially-constructed beliefs about sickness and health, the role of benevolent and malevolent gods and goddesses, as well as the healing powers of the Narmada River contribute greatly to health care choices on a variety of levels. Some respondents told me that even though they doubt the power of the bhoua, they still seek his service anyway because it just might work. They are strong believers in the power of their Hindu deities, and they would prefer to have a bhoua, a ritual specialist, advocate on their behalf than to risk angering deities further, or falling out of their favor. The role of ritual in healing and health care was evident by the numerous altars women told me they maintain in their homes to protect their families and keep them well, as well as their explanations of trips to local temples to pray that they or a family member recover from some illness.

**Anthropology, Religious Beliefs, Healing, and Health Care Practices**

The role of religious beliefs in healing and health care practices among the Rathwa is evident from the pictures of Hindu deities hanging on the walls of the many private and public clinics and hospital I observed, the use of traditional healers (bhousas) to evoke the supernatural to effect healing, as well as small altars with daily offerings tucked in a corner of many villagers’ homes, set up not only to honor and worship, but to respect and make requests of benevolent gods and goddesses who can make sick people well when a malevolent god of goddess has struck them. The Pithoro paintings I saw in a number of homes, as well as 97 percent of Rathwa structured interviewees indicating that they seek the services of a bhoua when sick, are both a testament to the Rathwa belief that the
supernatural may be called upon to heal the sick, to dispel ghosts, and to appease malevolent gods and goddesses. It appears that regardless how health care systems may evolve, some basic tenets pertaining to sickness and health persist because they serve some purpose for not just the individual, but also for the community of people who hold those beliefs.

Many cultures have “folk illnesses,” those ailments that are attributable to certain forces, such as witchcraft, the evil eye, or some negative entity, supernatural or not, and the Rathwa are no exception. They believe that some illness are caused by evil spirits, ghosts, or malevolent gods, and that to remove these illness, one needs to seek the services of a ritual specialist, the bhoua, who will advocate to a benevolent being or the supernatural. This belief was most evident when I asked people how they treat health problems such as snake bite or headache.

Snake bites become more common during certain times of the year when people are outside more often, due to the need to tend to their fields. This also correlates with monsoon season. During this time, the number of snakebites goes up, as do cases of malaria, water-borne stomach ailments, and diarrhea. Many people told me that they called upon a bhoua to treat them after they were bitten by a snake, or when they had head pain, rather than consulting a doctor at a private or public clinic. In addition to seeking the services of a bhoua for snakebite, many people, especially women, made trips to the local temple as part of their course of treatment, not just for themselves, if they had been bitten by a snake, but for family members who had been bitten by a snake as well. Appealing to the gods and goddesses was a type of insurance for improved health.
The Incidence of Malaria

In retrospect, it would have been useful to ask if anyone in the household had ever been diagnosed with malaria. This question might have yielded very different responses, with possibly more cases of malaria within the household being reported. Some people develop immunity to the disease if they have had it once or multiple times during their life. However, this developed immunity is self limited, and eventually runs out. People who have developed immunity who then move to a malaria-free area, and then eventually return to their former community may find their immunity is no longer in effect (Sachs and Malaney 2002). It also would have beneficial if I had asked about sickle cell disease within families. Through this questioning, I might have been able to determine if there were any heterozygote carriers of the HbS allele that would be afforded immunity from malaria.

Rathwa Knowledge about Malaria

While many Rathwa were aware of how people contract malaria, others did not know there was a connection between mosquitoes and people contracting malaria. Forty-one percent \((n = 50)\) of households surveyed responded “Yes” when asked if they use mosquito bed nets. During participation observation at villagers’ homes, I noticed that some households had covered their standing water sources, such as watering troughs for livestock, to eliminate mosquito breeding grounds. Rathwa knowledge about malaria varied, with most people knowing what the symptoms are, some knowing how to prevent malaria (use of neem in various forms), and where to go for treatment. Very few people went to a bhoua for treatment for malaria, and all of the bhoua I interviewed told me that they tell people with malaria to go to a doctor at a clinic in Kawant.
The Incidence of Sickle Cell Disease

I was surprised, for a few reasons, that my data indicated a less than anticipated number of cases of SCD. First, during my preliminary visit in June 2007, I had held a meeting with eight HCPs who operated private clinics in Kawant. In identifying the most pressing health care needs of the Rathwa, they told me that SCD was a primary health concern. Second, my sponsor, Dr. Vijay Shah, as well as other biomedical doctors I met while working in India, told me it was estimated that 20-30 percent of my study population were estimated to have SCD. Third, prior research on malaria and SCD show a correlation between the endemicity of malaria and the co-incidence of SCD. Therefore, I expected that more of my survey respondents would indicate cases of SCD in the home.

My concern is that there may have been some misunderstanding with this question. It could be that those who have little exposure to SCD or sickle cell crisis (SCC) are just not familiar with the disease, so when asked about it they replied in the negative. These people live very strenuous lives, working extremely hard, and endure a lot of pain and suffering. As stated earlier, it could be that symptoms of SCD are misinterpreted as something else and either treated by home remedies, periodic trips to the bhoua, or analgesics from an HCP, or they are just endured for the sake of survival.

I believe Rathwa knowledge about sickle cell disease was minimal, with many people equating it with “rheumatism,” possibly due to the joint pain experienced by those in sickle cell crisis. Those who knew they had SCD definitely understood the symptoms, and frequently had stories to tell of how they were diagnosed. Many told of severe pain in their extremities, an inability to go about their activities of daily living, and a general
feeling of malaise, somewhat like having the flu. All non-bhoua HCPs indicated that the first line of treatment they prescribe for someone experiencing SCC is analgesics for the pain, as well as oral supplements of folic acid, which is good for combating anemia.

When a respondent told me that he or she or a family member had been diagnosed with SCD, I probed further for details about who within the extended family had the disease. Typically, respondents said they were the only person in the household who had been diagnosed. Drawing kinship charts indicating who within a family had SCD was not fruitful. Respondents typically were not aware of who else within their families had the disease. Young parents with children had not had their children tested, typically citing the lack of need. If the child had not exhibited symptoms, the test was not performed. Respondents were not aware that SCD was a genetically-transmitted disease. Most believed it was an illness like any other, but that it lasted one’s entire life. Again, I suspect that the symptoms of SCD, especially joint pain during SCC, was categorized by respondents as rheumatism.

**Political Economy and Health**

Anthropologists most likely would agree that “human history is a demonstration that nothing continues forever” (Axinn & Axinn, 1997:64). Raju Das (2001), in his review essay on the political economy of India, writes of how changes over time in India, especially those related to politics, social class, caste, and government redistribution policies, have impacted not just the country as a whole, but also smaller entities, such as local governments, farmers, and adivasi groups.
The agrarian nature of many parts of India, coupled with the exploitation of labor, and the need to produce goods for various markets, creates an environment of stratification that leaves many lacking the benefits that come from government sponsored or promoted development efforts. Economic growth has been increasing in a number of business sectors in India, such as high tech operations, but poverty continues to be the predominant state of fiscal affairs for many. Those who make their living as farmers, as do the Rathwa, may find that what they produce does not provide the needed return on investment they have been expecting or have experienced in the past.

**Social Stratification and Health Care**

People I encountered throughout my time in Kadipani and Kawant seemed to prefer to be in the company of those who were of their same caste or adivasi group. All of the HCPs, but for the bhouas, were non-avadashi Hindus who were members of one of the four castes: Brahmins; Kshatriyas; Vaishayas; and Shudras (S. Singh 1987:1). A caste may be considered a self-defined social unit (Gould 1971:3) in which there is social stratification (Singer and Cohn 1968:51) that is ascribed at birth and is life long (Singer and Cohn 1968:59).

While the Rathwa do not belong to a caste, a majority of the HCPs who provide health care services for them do. I found there was a palpable separation of the groups, with each maintaining their distance and operating within a previously prescribed social role. I encountered this practice not only with the health care system, but also when I was trying to locate someone to be my companion and translator. I was informed by a number of different people that no one would live with me in the village because it was socially
unacceptable. This proved to be true. The reluctance of many females to accompany me to the field because it would entail being in the presence of members of another, typically lesser, group was at times very frustrating for me as it interfered with my ability to do my work.

**Qualified Health Care Practitioners**

One factor critical to the delivery of health care anywhere is the training and experience of the HCPs. During my research, there was only one allopathic physician legally practicing biomedicine in Kawant village. There were a number of doctors trained in Ayurveda and homeopathy ($n = 15$), all of whom responded that they practiced allopathy when I asked them “What type of health care service do you provide?” Typically, an Ayurvedic or homeopathic doctor would say that he or she practiced allopathy, even when given the response choice specific to their discipline and training (e.g., Ayurvedic, homeopathic).

I also observed non-allopathic doctors practicing allopathy, such as prescribing medication for viral and bacterial illnesses, taking x-rays, and drawing blood for testing. When I discussed this with my sponsor, Dr. Vijay Shah, we talked about the lack of allopathic doctors willing to practice in the rural areas where adivasi groups live. What I found during my work in Kadipani and Kawant is that people who are not from a rural area are not interested in living or working in such an area—there is very little incentive to do so, especially for female HCPs who have a husband whose career comes first. I did meet one Rathwa Ayurvedic doctor who said he returned to the area to treat Rathwa.
Health Care Seeking Behavior and Health Care Decision Making

My initial conclusion is that Rathwa health seeking behavior is influenced by what is learned within their cultural group (social constructivism). For example, my fieldwork revealed that people continue to seek the services of the village Bhouas even though:

(1) many villagers openly acknowledge that the Bhoua does not have the ability to heal, and
(2) many diseases are self limiting and resolve by themselves. The coincidence of a visit to the Bhoua with symptomatic improvement may reinforce the belief that the Bhoua actually has supernatural healing powers. But, coincidence does not imply correlation. As told to me by a number of villagers, Rathwa seek the services of the Bhoua because of “tradition,” that is what is done, so they do it.

Similarly, some patients will tell the doctor specifically what treatment they prefer (injections, antibacterial washing of an injured area even though it is not medically warranted), possibly because it has worked for them or a family member in the past. The patient’s intent is to regain health so as to return to the work of caring for families and earning a livelihood. In this case, one’s personal economic situation, as well as the local economy, are driving forces behind health care decision making and healing practices.

Worthy of consideration is the impact of modernization on health care decision making, especially with the increasing mobility of people from remote villages to cities in search of treatments and cures.

Also, the role of the Indian government in the promotion of certain health care practices such as vaccination programs for children, institutional births instead of home deliveries, and prevention of diseases such as malaria via education programs, may move
the population toward a more biomedically-based system of health care, resulting in the modification and possibly the abandonment of age-old cultural practices, such as indigenous healing methods and religious belief systems (personal conversation with Kawant government hospital medical director, June 2007). With a relatively broad continuum of health care services available, the intersection of ethnomedical and biomedical health care practices may impact household health care decision making, possibly resulting in conflict with Rathwa history, tradition, and cultural practices.

The data discussed in this chapter reveal that indeed there is a change occurring in how the Rathwa make health care related decisions. Primarily descriptive, the data reinforce the position I stated earlier—that there is a rift between traditional and modern health care practices. This tension has led to people rethinking their health care options. Respondents frequently expressed dissatisfaction with the quality of health care they have received in the past, regardless of the discipline of the HCP, and, based on prior experience they or a family member had had, were prompted to request specific treatments, even though the treatment requested was not necessarily the treatment of choice for the ailment they were experiencing.

Issues related to access to services as well as treatment cost were prime factors that determined where and when people sought help. A common theme, whether I was interviewing HCPs or villagers, was that the role of the bhousa was in flux. Many people, both villagers and HCPs alike, made disparaging remarks about the bhousa, doubting their ability to heal, and considering them to be “cheats”; “Not really able to help anyone”; “They cause illnesses getting worse because they cannot treat it effectively”; “The
community decides where you go first—the elders say you go to the bhoua so they go.

When they don’t get better they come to see a doctor.”

The bhoua operates from a position of faith, both his own in his ability to intercede with the supernatural on behalf of his patient, and the patient’s belief in the same. The bhoua’s ongoing existence is dependant on this faith remaining vital, rather than dying out and possibly being replaced by less traditional/ethnomedical practices. It is not possible to be half hero and half charlatan, and it appears that many Rathwa feel this way about the bhouas. While bhouas may continue to have a place in the continuum of health care and healing practices among the Rathwa, it is possible they may be relegated to the position of cultural artifact, something that served a purpose at one time, but that now has limited use.

**GMDC and the Local Economy**

GMDC employs some Rathwa men in a variety of jobs, such as laborers, security guards, welders, and truck drivers. Rathwa employed by GMDC have economic and health care advantages that non-employees lack. During my research I learned that households in which a member worked for GMDC had higher monthly income, had more items indicative of higher socioeconomic status (e.g., scooters, furniture, cell phones), and had access to GMDC-provided health care services at the workplace, including treatment for malaria.

As both a medical anthropologist and a development anthropologist, I see in the case of the Rathwa that “development has powerfully modified the individual’s everyday life” (Cernea, 1995:340), evident with the GMDC mining operations and concerns about damming projects along the Narmada River. Those who responded to my household surveys who worked at GMDC had access to health care service staffed by biomedical
doctors at the mine operation site, and a higher income with which to make choices.

During my preliminary visit to Kadipani in June 2007, the GMDC plant was offline—it had not been operational for quite some time due to renovations and upgrades being made at the site. Rathwa men who had worked for GMDC prior to its furlough had to rely on other sources, typically farming, for income for their households. The mine was in full operation when I arrived in Kadipani in November. Very shortly after the mine resumed operations, the workers called a strike.

As I took my morning walk to the temple prior to beginning my work that day, I heard loud music, horn blowing, drum banging, and saw men sitting on the ground outside the entrance to the mine site. I spoke with some people at the GMDC guesthouse where I was staying and asked what was going on. They said “strike” in English, a concept universally understood, and that was it. I ventured down to see what was going on. The mine had only recently resumed operations, so I wondered what could have happened to bring production to a halt so soon. How would this work stoppage affect the village and the Rathwa that worked for GMDC? No one I asked had a clear answer as to what was going on and why. The next day I was told the labor dispute had been resolved and the men returned to work. There were no further labor strikes during my time in Kadipani.

While living at the GMDC guest house, I met a young doctor who was completing his medical rotation at the GMDC plant medical clinic. We spoke at length about the illnesses he most frequently treated GMDC employees for, as well as general health issues of the local population. This doctor had access to medical equipment and supplies not found at other biomedical health care facilities in the local area. GMDC employees who
were experiencing health problems could visit the clinic, see a biomedical doctor, receive a diagnosis and be treated. No travel or money was involved. Absent were the long lines one might experience while waiting to be seen by a biomedical doctor at the government clinic in Kawant. The relative ease with which GMDC employees could receive medical care and treatment outstrips that of the biomedical facilities in Kawant.

While GMDC is providing employment, income and local development for the people of Kadipani, it is also contributing to changes in perceptions about traditional and modern health care practices. When a GMDC worker receives a treatment at the GMDC medical facility that is not available at any other local health care facility, a dichotomy develops. Equity in the provision of health care shifts—some have access to services, others do not. This disruptive effect impacts locally held beliefs about what is traditional and what is modern. With the continued introduction of more modern health-related services, people may increasingly question the validity of their traditional practices and practitioners, such as bhousas.

**Conclusion**

One can never be completely prepared for what might transpire while in the field. This is what makes ethnographic research interesting, dynamic, and an experience far beyond what may have been imagined in one’s mind or written about in a dissertation research proposal. The reflexive nature of anthropology adds a dynamic to the research process that may not be found in other disciplines that study humanity. When I entered the field, I went with the expectation that I would explore in depth the health care decision making process employed by the Rathwa. I was going to address my research questions
and find out what I wanted to find out. While those were my intentions, once in the field, things took a slightly different turn.

I imagined that Rathwa health care decision making would be a rather black and white process in that someone either went to an ethnomedical or biomedical health care provider, and that there would be an every growing trend away from ethnomedicine toward biomedicine. This was not the case for everyone. Yes, some people were forgoing visits to a bhoua because they saw little reason to continue when they did not get better. Others did not have the funds to pay for health care so they always went to the government-sponsored clinic or hospital, which were free. Still others were not satisfied with the quality of care received from the government facilities and chose instead to seek the services of private health care providers on a fee-for-service basis. And, there were a few people who never went to any HCP but for the bhouas, as they did not trust “doctors.”

My expectation that modernity or modernization would be the driving force behind any change in health care and healing practices was tempered by my belief that people would hold true to their belief systems about what causes sickness and what restores health. I also knew that the availability of funds within a household would be a strong determiner of who received what type of health care and when. It was up to me to reconcile all of these variables in my mind, and while keeping my Western-focused bias in check, come to a conclusion as to what drives people to make the health care and healing choices that they do.
CHAPTER SEVEN

CONCLUSIONS AND RECOMMENDATIONS

Introduction

This chapter presents the conclusions I have drawn from my research, a discussion of my five research questions, as well as recommendations for follow up research and program development.

Main Conclusions

Anthropology has a lengthy history of involvement in issues relating to “social and cultural change” (Hoben 1982:349) across the world. Much change has taken place in the field of health care in India over the years, reaching into rural locations as well as major metropolitan areas. In India, as elsewhere, there may be multiple treatment approaches, ethnomedical as well as biomedical, for any one sickness or disease. How a health care recipient or other health care decision maker arrives at a choice of treatment, or a combination of treatments, is culturally-based, and tied to local beliefs about health, healing, and sickness (Basavanagouda 2004; S. Basu 1992; Langford 1999; Nayak and Babu 2003; Tyagi 2002). I found this to be the case with the Rathwa of Kadipani, who repeatedly told me that they do what they do when it comes to health care choices because they have always done it that way, it is what they believe, and it is their tradition.
Health, which has been defined by the World Health Organization as, “a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity” (WHO 2007, emphasis added), seems to be more elusive for some people than others, and possibly not attainable at all, depending on how one conceptually and operationally defines “complete.” So many variables affect the health of individuals and families, as well as entire communities. Out of widely varying concepts of sickness and health have come numerous health care and healing practices, some religious or faith based, others grounded in empirical science.

Of late, increased attention has been paid to “Western” systems of health care and healing within the context of choice and health care decision making (Garro 1998a, 1998b, 2000), and how various cultures throughout the world make differing health-related choices and why. Kleinman and Kunstadter observe that health care and healing systems are pervasive, being “found in all known cultures, but their variety is enormous” (Kleinman and Kunstadter 1978:1). It may be the variety of healing and health care practices found throughout the world that anthropologists find so fascinating and compelling to study, using the comparative approach that is so unique to anthropology.

India, a country of approximately 1.12 billion people (CIA 2007), with a history reaching back 5,000 years (Walsh 2006:xiii), has developed, over time, a number of indigenous and scientifically-based health care and healing methods, some of which are available to the Rathwa. Partner these healing and health care systems with Rathwa beliefs that some sicknesses are caused by evil spirits, ghosts, witchcraft and sorcery,
and the result is a need for an approach to health care and healing that is holistic, compassionate, and effective, while being respectful of culture, history, and tradition.

**Section I: Research Questions**

**The Five Research Questions**

My intent with this dissertation research was to address five research questions related to Rathwa health care and healing practices:

1. What prompts the Rathwa to seek a certain type of health care, be it ethnomedical, biomedical, or a combination of both?
2. Do Rathwa forgo ethnomedical practitioners and instead visit a biomedical practitioner when faced with disease or illness? If so, what factors influence this decision?
3. If there has been an increase in Rathwa accessing biomedical services, which diseases most frequently result in visits to biomedical practitioners (e.g. malaria, sickle cell disease, fevers, childbirth, broken bones, etc)?
4. What impact do traditional gender practices have on health care decision making?
5. What is the impact of economic development projects in the region where the Rathwa live on adivasi health care decision making, especially as it relates to household income and socioeconomic status?

The data I collected during my time with the Rathwa and the HCPs in both Kadipani and Kawant shed light on these questions. There were no surprises, just some instances of clarity as well as the reinforcement of some expectations.
**Research Question One**

My first research question, “What prompts the Rathwa to seek a certain type of health care, be it ethnomedical, biomedical, or a combination of both?, was designed to get at the foundation of how the Rathwa navigate a pluralistic health care system. I wanted to know what went on within their households, such as who makes health care-related decisions, as well as in their communities, what happens when they actually seek the services of any number of ethnomedical or biomedical HCPs.

Before I could explore why the Rathwa make particular health care decisions, I needed to understand their concepts of sickness and health. As mentioned in previous chapters, the Rathwa believe than many illnesses are caused by black magic, curses, witchcraft, or malevolent gods or goddesses. A few people I spoke with did have some scientifically-based knowledge of common illnesses, such as malaria, which might be attributable to Indian government education programs aimed at increasing villager knowledge about disease.

When I asked Rathwa individuals how they decide which type of health care services to use, their responses fell into three themes: (1) tradition, (2) satisfaction with services provided, and (3) cost. In terms of tradition, some respondents stated, “I go to the bhoua, it is what we do, so I do it.” “I go where my elders tell me to go, which is to the bhoua,” or “I go to the temple and pray so the gods will help me get better.” Other responses indicated satisfaction with services. One respondent stated, “If I had good service before I go again when I need to,” “My sister liked the doctor so I went too,” or “I did not like the government hospital so I don’t go there any more.”
Cost was a concern for many people, even though the public hospital and clinic provide free services and medications, as does the GMDC dispensary. One respondent revealed that even though it was far to travel from Kadipani to Kawant when sick, she did it because, at the government health care facilities, she “does not have to pay the doctor, or buy medications.” Another respondent, whose husband worked for GMDC and whose household had monthly income from multiple sources (husband’s job, farming), indicated that her family has multiple choices when it comes to health care services, and that depending on the problem, she decides where to go for care, but stated, “I pay the doctor at a private clinic because he is good.”

Some HCPs told me that with certain patients they do explain the source or cause of some illnesses, such as diarrhea from drinking contaminated water, or overwork causing back and joint pain. With other patients, the HCPs assumed that they are not interested in the story behind the cause of their illness, or that they are incapable of understanding such an explanation. One HCP had a booklet that explained SCD in easily understandable terms with illustrations outlining the process from diagnosis through treatment. He told me he uses this booklet to explain SCD when a new patient comes to him for treatment. The illustrations in the booklet enable someone who does not read to learn about this disease, its symptoms, and treatment options. I was told by this HCP that since most Rathwa do not read, and they do not have an understanding of the science behind what causes SCD, that simple illustrations in the booklet were the best way to inform them of the ramifications of the illness, and reinforce treatment compliance.
I expected that some Rathwa would have strong beliefs about what causes sickness, and how one may achieve good health. I just was not sure how similar or diverse the people within this small, homogenous group would be in their beliefs. Recognizing that 84 percent of household survey respondents had never attended school, I expected that knowledge about the causes of most illnesses would be minimal. I also anticipated that those people who had experienced certain illnesses within their families, (malaria, respiratory infections, diarrhea, etc.), especially if multiple people in the household had all had the same illness, might have more knowledge about that specific illness than an individual who had no experience with that same illness.

During my research, I spoke with a few Rathwa who told me they never go to doctors, be they ethnomedical or biomedical in their training, choosing instead to always seek the services of a bhoua when the need arises, relying on this ritual specialist to intercede on their behalf with the supernatural. For instance, in one 11-person household, the wife of the head of the household told me she does not trust doctors. This concerned me, since the overall health status of all the family members was rated from “Fair” to “Bad.” There could be a number of explanations for why the survey respondent chose either of these two categories. Possibly she did not clearly understand the range of response choices. Or, the household members could have been experiencing a recent downturn in their health status, something that could be foremost in the respondent’s mind.

Even though the biomedical health care services provided at the public clinic and hospital in Kawant were free, and the compound is located just 12 kilometers from
Kadipani, many respondents did not care to use those services. One respondent told me that since the services were free, the medical staff does not work very hard, and they do not really care about the patients. One woman I interviewed who had had a caesarean section delivery at the public hospital in Kawant complained strongly about the care received and has since sworn off the public health care system. Hardiman and Raje have also written of adivasi in Gujarat (Dangis of the satipati sect) who “refuse to make use of government health facilities” (Hardiman and Raje 2008:46), including inoculation programs. While those adivasi may have different reasons for boycotting government-provided health care, the members of that community, by their own decision making, may be putting themselves at risk for a number of health related problems, especially when we consider the prevalence of polio alone in India, not to mention other preventable diseases.

This view of public health services is contrasted with the private clinics in Kawant where services are provided for a fee. The central health care decision making issue in this case is appeared to be lack of funds. Someone with little or no money may find it difficult to make the trip from Kadipani to Kawant, pay the doctor visit, and have to buy medication as well. When money issues are coupled with other issues such as transportation or infirmity, health care decision making becomes a passive process—without the resources needed to carry through on choices, one really has no choice.

In contrast to this perspective, I also spoke with Rathwa who scoffed at the mere mention of the word bhoua, and who told me that they and their family members always see the biomedical doctor at the public clinic or hospital. In yet a third grouping were those Rathwa who are willing to seek out the services of any and all practitioners on the
continuum of ethnomedical and biomedical HCPs, frequently using multiple providers simultaneously in an effort to resolve their problem. This group appeared to be compelled in their health care decision making by a fierce need to get back to life as usual—no time for illness.

**Research Question Two**

My second research question was: “Do Rathwa forgo ethnomedical practitioners and instead visit a biomedical practitioner when faced with disease or illness? If so, what factors influence this decision?” The answer to this question is no, they do not shun ethnomedical practitioners in favor of biomedical practitioners. Typically, and far more frequently than I had anticipated, people will visit practitioners from different health care disciplines until they are satisfied. Most people do not know what type of health care provider they are visiting, except in the case of the bhouas. HCPs do not routinely inform patients of what type of health care they practice, and patients do not ask. The Rathwa tend to group all HCPs (excluding bhouas) under the umbrella term of “doctor.”

This point was reinforced one day when I was visiting with some people in the center of the village close to where woman sell vegetables. A man I had interviewed earlier in the week came up to me as I was taking pictures of the Shiva temple and the vegetable sellers. He asked to see my digital photos. I showed him and his brother, photos I had recently taken. They recognized fellow villagers’ photos, referring to them by name. When I came to the photo of the medical assistant who works at the GMDC dispensary, both men said “doctor.” The medical assistant at GMDC is not a doctor.
My data indicate that some people will do whatever it takes to get well, including seeing multiple providers simultaneously, until they get better. As I saw during my periods of participant observation at the public clinic and hospital where the biomedical doctor practiced, the line was out the door when he was seeing patients. But I temper this observation with the fact that there was only one biomedical doctor in Kawant, and there were fifteen ethnomedical doctors (excluding bhouas). Even though some of the ethnomedical doctors saw far fewer patients per day than did the biomedical doctor, the number of potential patients was spread out among many HCPs.

One critical variable pertaining to the issue of biomedical versus ethnomedical doctors was that the biomedical doctor’s services at the public clinic and hospital were free, while those of the ethnomedical doctors in private clinics were provided at a cost to the patient. Interestingly, the biomedical doctor also had his own private clinic in a store front in Kawant. His explanation for this was that at one point he worked solely for the public health care compound in Kawant. He left this duty entirely to operate his own private clinic. Under the “urging” of the Indian government, he eventually returned to his duties at the public health care compound in Kawant, while continuing to maintain his private practice part time.

**Research Question Three**

“If there has been an increase in Rathwa accessing biomedical services, which diseases most frequently result in visits to biomedical practitioners (e.g., malaria, sickle cell disease, fevers, childbirth, broken bones, etc.)?” Yes, there has been an increase in the number of Rathwa accessing biomedical services for certain health-related conditions,
a result, I was told, of government sponsored health-related campaigns. These campaigns include: institutional births instead of home births with traditional birth attendants; inoculation programs for children; and female sterilization procedures. This increase in access for certain health concerns has been achieved via education programs with expectant mothers, traditional birth attendants, and outreach to families with multiple children. In addition, individuals suspected of having SCD are referred to the government clinic or hospital for diagnostic blood testing and treatment.

All of the HCPs, except the bhouas, treated Rathwa for malaria using biomedical methods, specifically prescribing anti-malarial medications, such as chloroquine, sulfaquine, or primaquine tablets, or chloroquine injections, and putting patients with severe cases on an I.V. drip for fluids. When I asked both the Ayurvedic and homeopathic doctors about malaria treatments specific to their disciplines, such as the use of *cinchona bark*, a homeopathic preparation, or *sadarshan ghanvata*, an Ayurvedic preparation, I was told that allopathic medications work faster, and are preferred in severe cases of malaria. They do use ethnomedical preparations, but allopathic preparations are preferred.

Cases of SCD are treated more frequently by the allopathic doctor than by the other HCPs. While all of the HCPs (except the bhouas) told me that SCD is a major health concern for the Rathwa, due to the nature of this disease, it is typically handled by an allopath. SCD must be diagnosed by a blood test—a service provided only by the government hospital or clinic. Once diagnosed, a patient may see any HCPs for treatment of symptoms, such as to get the nutritional supplement folic acid or a prescription for
analgesics for joint pain. Severe cases of SCC were treated in the day ward of the government hospital as they may require intravenous fluids, injections, etc.

The local Rathwa construction of SCD was baffling. For a group in which it has been estimated that 20-30 population have the disease, the level of knowledge about the disease and its symptoms was minimal. When I located a respondent who said he/she had been diagnosed with SCD, I spent additional time talking with that person. I asked for details pertaining to not just their diagnosis, but also if any other family members had also been diagnosed with SCD. My goal was to create a kinship diagram that would outline who had the disease and who with the extended family might carry the trait.

Of those respondents diagnosed with SCD, very few were able to provide sufficient information about SCD within the extended family for me to draw a meaningful kinship diagram indicating who was known to have the disease. People who had been diagnosed did not know if their parents had the disease or carried the trait, nor did they have their own children tested to determine their status. This lack of familial genetic information could be related to a variety of factors such as: lack of knowledge about how the disease is passed on from generation to the next; the inconvenience of having to take children from Kadipani to Kawant to get a blood test; and insufficient information about the disease symptoms. As mentioned previously, it is possible that individuals may have SCD and be relatively asymptomatic until adulthood (R. K. Kar 1993), or they may attribute SCD symptoms to rheumatism or other illnesses that come from living a difficult and strenuous life.
Research Question Four

When I considered the question “What impact do traditional gender practices have on health care decision making?”, I found that there was a division of health care services received, or chosen, based on gender. My household survey data showed that health care decision making was primarily a joint process, with 49 percent \((n = 59)\) of respondents stating that both the head of the household and his wife make health care decisions together. Thirty-eight percent \((n = 46)\) of respondents indicated that the head of the household, a male, makes health care decisions for those in the home. No one indicated that health care decisions were made solely by a female member of the household. In the case of a widowed female, I was informed that she would defer to her eldest son to make health care decisions for the household.

As mentioned previously, women are the primary care providers for the family and home. They have a considerable amount of work on a daily basis. When coupled with personal illness, or the illness of a family member, each day becomes more difficult. Issues related to gender and gender roles were revealed during my research. I tracked the process that women follow when deciding, typically in collaboration with their husbands, who in the family gets what type of health care services. Of equal importance were decisions such as when to see a doctor, which may be costly, time consuming, and takes time away from other household duties, rather than seeking the services of a bhoua, who may be less expensive, more accessible, and could come to one’s home. Female respondents frequently rated their individual overall health status lower than male respondents. This could be due to a number of factors, such as differential access to
health care services, the overwhelming demand of household responsibilities which make it difficult to leave the home and travel to a health care provider, or personal beliefs about sickness and health.

During my interviews and surveys with women, they indicated the importance of their religious beliefs as these relate to their beliefs about sickness and health. Seventy-five percent of female respondents indicated that praying and visiting the temple were integral components to their approach to health care and healing. Women were the one’s responsible for maintaining the family altar to honor and worship Hindu deities. Women relayed that they would pray for better health, and that the bhoua was able to help them when illness was caused by bad gods or goddesses.

Research Question Five

Ten percent (n = 12) of Rathwa households surveyed had a family member who worked for GMDC in some capacity (laborer, truck driver, welder, security guard). During my preliminary visit to Kadipani in June 2007, the GMDC mine was off line, and had resumed operations by November, when I returned. When considering research question five, “What is the impact of economic development projects in the region where the Rathwa live on adivasi health care decision making, especially as it relates to household income and socioeconomic status?”, the role of GMDC as a local employer, as a provider of free health care for employees and non-employees alike, and as a major corporation operating in India, is important. While the Rathwa live an agrarian lifestyle, some Rathwa men are employed by GMDC, and as employees, they have “benefits” that Rathwa who do not work for GMDC lack, such as on site health care and regular monthly
income. Yes, this development project does impact Rathwa health care decision making. People who work for GMDC have access to services that those who do not work for GMDC cannot access. Also, consistently, households who had a family member working at GMDC had higher monthly income that those that did not. Having additional household income provides greater resources when families are considering health care choices.

**Section II—Recommendations**

*Malaria Prevention and Treatment among the Rathwa*

Malaria is an infectious disease with a long history in many parts of the world. “Once a global scourge, by the mid-20th century it was eliminated as a major health problem in much of the world” (Arrow et al. 2004:3). With modernization and a change in the environment, malaria disappeared from some regions, such as the United States, but continued to flourish in others. Most seriously affected are those living in sub-Saharan Africa, “where stable, endemic disease is linked to poverty and highly efficient vectors” (Arrow et al. 2004:198). Malaria is not a simple disease, nor is eradication easy. Oaks et al. observe that “malaria is extremely complex. The nature, duration and severity of malaria infection depend not only on the species of malaria but also on the level of malaria-specific acquired immunity in the individual” (Oaks et al. 1991:212).

Today, malaria is resurgent in some areas including India, with increased severity and epidemicity. The number of malaria deaths and geographic distribution are more extensive than three decades ago. More than half the world’s population lives in malaria-endemic areas, where each year an estimated two billion are exposed, 500 million cases
occur, and infection results in more than two million deaths (Etkin 2003:312). An increase in malarial infection may be brought about by a variety of factors, including the actions of humanity when we tamper with the environment. Altering the malaria-carrying mosquito’s habitat or ecosystem may result in an increase in the parasite-spreading vector population, leading to greater likelihood of humans coming into contact with disease carrying mosquitoes. Damming projects along the Narmada River may be cause for concern when one considers cases of malaria among those living in the area. Recognizing that “infectious diseases have probably been the primary agent of natural selection over the past 5000 years,” Inhorn and Brown observe that malaria and other infectious diseases “provide a rich area for anthropological research, with contributions to be made from all of anthropology’s subdisciplines” (Inhorn & Brown 1990:90-91).

This could be the case with damming projects along the Narmada River, which is relatively near Kadipani village. Inhorn and Brown observe: “Development projects of dam construction, land reclamation, road construction, and resettlement in Third World countries have probably done more to spread infectious diseases such as . . . malaria than any other single factor” (Inhorn and Brown 1990:97).

Malaria infection impacts people’s lives in a variety of ways beyond the physical or biological. It is a serious threat to not only the health, but also the economic and political systems of many communities around the world. Malaria may be responsible for killing more people than any other disease (Mascie-Taylor 1993). Recent attempts to develop vaccines against malaria have been unsuccessful. Other programs, such as the distribution of pesticide-treated bed nets, have met with mixed results primarily due to
improper usage by those who own them, or the inability to buy them by others. When the
cost of a bed net is too high, people tend not to buy them, choosing instead to take their
chances.

The impact of malaria is far reaching, affecting not only people’s health and
fertility, but also individual and local economies. Over the years a variety of approaches
have been implemented to control the rate of malaria infection, treat those infected,
and educate people as to how the disease is transmitted. Eradication has not yet been
established, though there has been some success with controlling malaria in various
locations. While eradication, whether partial or complete, may seem like a monumental
task, it frequently begins with malaria education, control, prevention, and/or treatment
programs which feasibly could include collaboration between ethnomedical and
biomedical health care systems.

**A Case for Blending Ethnomedical and Biomedical Health Care Practices**

Indeed, malaria offers a case for the beneficial blending of ethnomedical and
biomedical health care practices in India. There are ethnomedical as well as biomedical
treatments for malaria. One ethnomedical treatment is the use of neem (*Azadirachta
indica*), a tree indigenous to parts of India. Neem is “one of the few drugs that has been
extensively studied as to their pharmacological and clinical properties (Sivarajan and
Balachandran 1994:325), including an antipyretic (fever reducing) effect. Beckerleg, who
has worked with tribal groups in Kenya on ethnomedical practices notes that neem leaves
“are used for cooling in cases of fever . . . as a palliative for malaria (Beckerleg 1994:
Adivasi and non-adivasi groups alike may self treat malaria symptoms with neem, or use it in conjunction with biomedical pharmaceuticals (Etkin and Ross 1992).

While there a number of pharmaceuticals that may be prescribed to prevent and/or treat malaria, these are frequently rendered ineffective due to species resistance. Neem grows in Kadipani and Kawant, is an ethnomedical malaria preventative as well as a treatment that is well known and widely used by the Rathwa. To date there have been no studies that determine if it is possible for vectors to develop immunity to naturally occurring organic substances such as neem.

Malaria and Health Care

A culturally-specific education program about malaria that would include information on how people contract the disease, methods for decreasing exposure to mosquitoes, as well as how to prevent and treat malaria could be beneficial for the Rathwa. Many variables may confound the planning and implementation of successful malaria intervention programs, not the least of which are frequently beyond the control of anthropologists and the community. The World Health Organization lists a number of factors which contribute to increased malaria infection. These include: famine, lack of access to health care facilities, physical weakness, concurrent illness, low socioeconomic status, movements from non-malarial areas to malarial areas, refugee settlement in high-risk areas, crowding with inadequate sanitation, and substandard housing (Williams 2001:71).

Anthropologists who recognize the impact these factors have on intervention programs may work with local leaders, the community, and other professionals to develop
an intervention that will best meet the needs of the people, which may include a blending of ethnomedical and biomedical treatment modalities. Observing that behaviors and beliefs are contributing factors in human response to disease, that they impact health, quality of life, and death, and that “the demographic effects of disease are truly biocultural” (Brown 1987:158), a well designed malaria treatment program could be a collaborative effort between ethnomedical and biomedical health care practitioners.

**Determining the Incidence of Sickle Cell Disease**

In India, adivasi communities are “highly vulnerable to hereditary diseases” (Balgir 2006, 163). In India, where the malarial parasite Plasmodium falciparum is endemic, cases of this type of malaria tend to be particularly severe. According to Balgir, “when persons with sickle cell haemoglobin are infected with malaria, the infected cells tend to sickle and are selectively destroyed by the body’s immune system” (Balgir 2006: 164). Serjeant and Serjeant observe “there appears to be good evidence that the sickle cell trait confers some protection against malaria during the critical period in early childhood between the loss of passively acquired maternal immunity and the development of active immunity (Serjeant and Serjeant 2001:21). In spite of the evidence supporting the hypothesis that the trait affords immunity to malaria, SCD and the thalassemias “constitute the major public health problem posed by genetic conditions world-wide, particularly in the developing world” (Penchaszadeh 2000:308).

There is an opportunity for a follow-up project to test the Rathwa SCD and sickle cell trait. Eighty-one percent ($n = 91$) of informants responded “yes” to the survey question, “If you or persons in the household could get a blood test for sickle cell anemia,
would you get that blood test?” I asked the village leader about his willingness to have such a service provided for his fellow villagers. He was more than willing, stating that it is better to know if one has the disease so it may be properly treated. I have discussed this potential project with my sponsor, Dr. Vijay Shah, who agrees it is a worthwhile endeavor, and we have discussed the possibility of seeking funding from the Indian government to carry out the project. A program for testing the Rathwa for SCD accompanied by an educational program that informs people about its symptoms, diagnosis, and treatment, could be beneficial.

An example of the need for testing and patient education occurred while I was conducting participant observation at the government hospital in Kawant. A 23-year-old woman was admitted with symptoms of sickle cell crisis. Accompanied by her father, she was in the “outdoor” patient ward (not admitted for an overnight stay, just for the day). She had been experiencing sickle cell crisis symptoms that included joint pain so severe that she was unable to work or carry out her typical household duties. Her husband thought she was being lazy and uncooperative, and shirking her household responsibilities. According to the doctor on staff at the hospital, the young woman was “expelled” from her husband’s home because she was unable to do her daily work. Had he known the symptoms of sickle cell crisis, as well as the factors that exacerbate the disease (extremes of temperature, stress, etc.), her husband might have been more understanding and sympathetic toward her. Together, as a family, they might also have been able to seek appropriate treatment for her symptoms, which are typically treated with
analgesics for pain symptoms, oral supplements of folic acid, or more aggressive treatments, such as blood transfusion in very severe cases.

Davidson and colleagues note, “genetic tests are moving rapidly from the laboratory to the medical clinic and from the detection of rare disorders to risk prediction for more common health problems” (Davidson et al. 2000:579). SCD is not a disease confined to the Rathwa or just adivasi groups. Writing on SCD in India, Kar states that “the gene is not confined to tribal peoples, but is prevalent throughout the society” (R. K. Kar 1993:617). Since SCD is a nation-wide concern, it follows that testing programs could be beneficial to the overall health of the population.

With greater awareness about the incidence of SCD among the Rathwa, the Indian government and local government health programs might be amenable to institute a testing program for Kadipani residents. Just as the government hospital in Kawant offers family planning camps to inform people about contraceptive procedures, it is possible that a similar camp could be held to conduct testing for SCD. Once a baseline of data on the prevalence of SCD among the Rathwa, and others living in the community, was determined, programs for ongoing blood testing, education on the symptoms and treatment of the disease, and genetic counseling could be made available.
CHAPTER EIGHT

CONTRIBUTIONS OF THE RESEARCH TO APPLIED ANTHROPOLOGY AND HEALTH CARE IN INDIA

Introduction

This chapter discusses the contributions my research makes to the field of applied anthropology, medical anthropology in a broad sense, as well as contributions to the knowledge base about ethnomedical and biomedical health care services and systems within one part of India. The focus is on issues related to adivasi health and well being, indigenous knowledge, and the impact of modernity on traditional cultural practices when considered within the larger context of health care in India.

Contributions to Applied Anthropology

Section I—Health Care and Healing

Anthropology has a long history of involvement in issues related to indigenous knowledge, traditional healing, folk medicine, and health care and healing in general. The intent of this research was to examine the ethnomedical and biomedical healing and health care practices of the Rathwa, an adivasi group that has a long history in the region. Through this research, I was able to see how anthropological theory may help illustrate the process of negotiating a pluralistic health care system, one that is changing in response to modernization, technology, migratory behavior, and economic need.
During my work, I spoke with many people who were involved in varying degrees in the provision of health care services. Some were also involved in patient health education programs, designed to inform adivasi about various illnesses (polio, malaria, sexually transmitted infections, etc.), as well as prevention and treatment options. Some of my findings corroborate those of other researchers, especially those who work with adivasi in Gujarat State, like Hardiman and Raje. However, while some of our findings overlap, specific circumstances in each community vary, and each study contributes to an overall richer understanding of the dynamics of adivasi health care practices. Key factors, such as the presence in rural communities of industrial operations like GMDC, which creates both new economic and social opportunities and potential tensions, may have significant impact on the quality of peoples’ lives. Those who work at GMDC may have greater monthly income than those who do not, and they have access to health care services that other villagers do not.

The presence of the mine has a major impact on the local economy. Not only do local Rathwa men work for GMDC, but there has been an in-migration of non-advadi who are working for the mine. It remains to be seen how this new development may impact the local economy and the local culture. As discussed previously, the Rathwa have lived in this area for a long time. They reside in an established village and have homes, schools, customs and practices particular to them. New people moving into the community means more activity, new ways of doing things, and the increased potential for culture change. These changes could include differences in how health care is
provided, who gets what type of services, differing perceptions about traditional health care and healing practices such as those provided by bhouas.

While my initial intent with conducting this study was to examine health care decision making, my perspective has also moved into other realms, including peoples’ perceptions of what constitutes health and sickness, who should receive what type of health-related services and when, and changing roles of the various HCPs working in Kadipani and Kawant. As mentioned in Chapter Six, all non-bhoua HCPs claimed to practice allopathy, although only one was trained in that discipline. It appears that HCPs, including bhouas, are shifting their health care and healing roles and responsibilities in response to changes in expectations for health care-related services by the Rathwa. What this means on the ground is that patients are becoming the driving force behind the type of health care services they receive.

Section II—The Local Political Economy

During my visits with people in their homes, we talked about recent developments in Kadipani, specifically GMDC resuming production in 2007. The conversations eventually turned to talk of new homes being built in the village. These homes were not for the Rathwa, but for non-adivasi moving into the village for jobs at the mine. The new homes were sturdier cement construction and more ornate by local standards. They did not resemble Rathwa homes and were set apart from the clusters of homes where the Rathwa lived.

This influx of non-adivasi migrants created an interesting dynamic in the village. The newcomers had newer, nicer homes. They worked at the mine, had monthly income
from their work, and they had access to employer-provided, on-site health care services. They were neither Rathwa nor adivasi, and therefore were not part of the established village culture. They were outsiders for all intents and purposes. And, they were taking jobs that possibly could have been held by Rathwa men.

The Rathwa have a number of health care choices when faced with illness, though these choices become limited when cost of care is factored in. While the Rathwa are a homogeneous population in many ways, there are differences when it comes to household economies. The conflict between traditional and modern is evident in both Kadipani and Kawant villages. With local economic development in Kadipani, different employment opportunities have come about, giving rise to an increasing differential in household income. An increase in production at the GMDC mine has an effect on village life. Greater monthly income has afforded certain households with options that other households may never have. GMDC workers have access to income and health care services that others do not. More money means greater access to more modern services, including those in cities far from Kadipani, services beyond the means of most Rathwa.

Section III—Rathwa Identity

As an adivasi group, the Rathwa occupy an interesting and possibly changing position among Indian nationals. As adivasi, or a “Schedule Tribe” as designated by the Indian government, the Rathwa may be undergoing a “transformation” as described by Xaxa in her discussion of “social change in tribal India” (Xaxa 1999:1519). As forest dwelling adivasi who are considered a scheduled tribe by the Indian government, I wanted to know how the Rathwa perceived themselves within the larger framework of tribe and
caste. I needed to know more about their identity as a specific group, specifically how they saw themselves, and what group identity they espoused. My intent was to move beyond the smaller group, Rathwa, to the larger group, adivasi, a group that has a specific position within Indian society.

Being so close to the Narmada River has brought new people to Kadipani due to the migration of those who have lost their homes along the river due to damming projects or other development projects. In addition, the influx of non-adivasi migrants to Kadipani has resulted in the introduction of different cultural practices to the community. While Kadipani village is primarily inhabited by Rathwa, a sedentary group who by their own account have lived in the area for a very long time, recent in-migration may be influencing a variety of cultural practices, including social events, health care and healing, and the general movement of people in and out of the village.

Living in extended patrilocal family units, and being endogamous, indicates the importance of clan and lineage structural units to the Rathwa. They make their living off the land, with most owning the land where they live and farm. Their community is relatively homogenous and unstratified, with an elected village leader. Their economic inequalities are not vast, though there is a difference in monthly income between households that have a member who works at the mine (25 percent, \( n = 30 \)) and those that do not (64 percent, \( n = 77 \)). Eleven percent (\( n = 14 \)) gave no response when asked if a member of the household worked for GMDC. Only one household indicated that they receive income from friends or family outside Kadipani.
While the Rathwa speak Gujarati, their dialect varies somewhat from other Gujarati speakers in the state. This may create more than a geographical separation of people who live in Kadipani and people who live in Bodeli, a cotton growing and processing city about one hour’s drive from Kadipani. Their culture is distinct with color in fabric and home design, music and dance. They like to celebrate the various Indian festivals, some of which I was invited to attend. Their weddings are lovely, and they gather together when there has been a death in the village.

The Rathwa appear to be a cohesive group committed to preserving their identity as Rathwa. I am not sure how the recent in-migration of other adivasi and non-avdivasi groups will impact Rathwa lifestyle and cultural practices. This would be worth studying longitudinally, especially now that the GMDC mine has resumed operations. Assuming that the mine continues to operate, and that more outsiders move to the area for employment, Rathwa socioeconomic status, health care practices, and other local characteristics may change in response. With a steady growth in the population of Kadipani, additional health care services could be provided. If more Rathwa men were employed by the men, there could be greater household income, and possibly a decrease in the amount of farming. This scenario could be dictated by who is migrating to Kadipani. People migrating to the village to work for GMDC may be different in their ethnicity and cultural practices from those migrating in because they are being pushed out of their natal homes due to development projects along the Narmada River.
Contributions to Health Care in India

As one of the signatories to the World Health Organization’s “Health For All by 2000 AD” declaration, India has made an effort to increase the availability of biomedical health care services to adivasi groups throughout the country (Paul 2005), seeking new ways to address long standing health-related problems that could easily be prevented or even eradicated if proper services, such as vaccines for children, could be implemented. I was shocked at the number of cases of polio that I saw in India, regardless where I was—either in a city or a rural village. Toward the end of my work, one of the public health workers I hired to assist me with surveying Kadipani households mentioned that her health education program was going to be holding polio vaccination camps in villages not far from Kawant. The goal was to educate people on how polio is contracted, its effects on health, and how vaccines can prevent the disease. The prevalence of this completely preventable disease serves to illustrate the need for accessible and culturally appropriate health care programs and services. An important concern, as Hardiman and Raje point out, and which I also noted, is that some adivasi groups distrust the Indian government, believing that it is anti-adivasi (Hardiman and Raje 2008:46).

My research with the Rathwa of Kadipani village has shed light on how one adivasi group navigates a pluralistic health care system taking into account the intersection of ethnomedical and biomedical healing and health care practices, as well as the role of indigenous knowledge, culture, tradition, and history in adivasi healing and health care and health care decision making. The Rathwa experience presents a microcosm of the experience of adivasi groups across India, where the forces of
development, modernity, and migration, intersect sometime uneasily with a long-established traditional worldview about health and illness. Perhaps the challenge for the future is to find a way to meld the best of traditional beliefs and practice with the knowledge available through biomedical advances and modern prevention and treatment options.
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World Health Organization (WHO)
Interview Questions for Rathwa

I am interested in health care practices among Rathwa living in Kadipani. I would like to talk with you about your health and the health of persons in your household. All information you provide will be kept confidential. Your participation is voluntary. There are no foreseeable risks if you agree to participate. If you choose not to participate, there are no consequences. If you decide that you want to end the interview at any time, you may do so. This interview will take about 30 minutes. The information you provide will be used to learn about Kadipani villager health. If you have questions about the research you may call me at 9924453332. **May I begin the interview now?**

Name _________________________________________________ Date________

1) Sex 1 = Male 2 = Female

2) How good is your health?  
   1 = Excellent  2 = Good  3 = Fair  4 = Bad  
   Why __________________________________________________________________

3) When **you** are sick, what do you do to get better?  
   __________________________________________________________________________
   __________________________________________________________________________

4) When **your spouse** is sick, what do you do to help him or her get better?  
   __________________________________________________________________________
   __________________________________________________________________________

5) When your **child** is sick, what do you do to help him or her get better?  
   __________________________________________________________________________
   __________________________________________________________________________

6) **How often** do you go to a **bhoua** when you or a person in your family is sick?  
   1 = Never  2 = Sometimes  3 = Almost always  4 = Always  5 = Don’t know

7) **Why** do you go to the Bhoua?  
   __________________________________________________________________________

8) **What** does the bhoua do to help you or a family member feel better?  
   __________________________________________________________________________

9) How often do you or your family members see a **doctor in a government clinic**?  
   1 = Never  2 = Sometimes  3 = Almost always  4 = Always  5 = Don’t know

267
10) **Why or why not** do you go to the **government clinic** when you or a family member is sick?

_____________________________________________________________________

11) How do you **decide** to go to the **government clinic** instead of a private clinic or bhoua?

_____________________________________________________________________

12) How often do you or your family members see a **doctor in a private clinic**?
1 = Never  2 = Sometimes  3 = Almost always  4 = Always  5 = Don’t know

13) **Why or why not** do you go to a **private clinic** when you or a family member is sick?

_____________________________________________________________________

14) How do you **decide** to go to a **private clinic** instead of a government clinic or bhoua?

_____________________________________________________________________

15) Have you or anyone in your household had malaria?
1 = Yes  2 = No

16) When you or someone in your family has **malaria**, what do you do to help him or her get better?

________________________________________________________________________

________________________________________________________________________

17) Do you or anyone in your household have sickle cell anemia?
1 = Yes  2 = No

18) When someone in your family has **sickle cell anemia**, what do you do to help him or her get better?

________________________________________________________________________

________________________________________________________________________

19) Have you or any person in your household had a blood test for sickle cell anemia?
1 = Yes  2 = No

20) If you or persons in your household could get a blood test for sickle cell anemia, would you get that blood test?
1 = Yes  2 = No  **Why or Why not?** __________________________

21) What health care services would you like to have that you don’t have now?

________________________________________________________________________
22) Age _____

23) What type of work do you do?
1 = Farming/agriculture (specify crops) _______________________________________
2 = Self employed (specify work) _____________________________________________
3 = Laborer (specify work) _________________________________________________
4 = Truck driver
5 = GMDC worker (specify work) ____________________________________________
6 = Factory worker (specify work) ___________________________________________
7 = Salaried worker (specify work) __________________________________________
8 = Housewife
9 = Unemployed
10 = Other (specify) _______________________________________________________

24) What is the highest standard of schooling you have completed?
1 = Primary School
2 = Secondary School
3 = Graduate
4 = No schooling
5 = Other
Total years of schooling #_____

25) What is the most important health issue for you and your family? Why?
________________________________________________________________________
________________________________________________________________________

26) What makes people get sick?
________________________________________________________________________
________________________________________________________________________

Observations:
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
APPENDIX B

HEALTH CARE PRACTITIONER STRUCTURED INTERVIEW FORM
Interview Questions for Health Care Providers
I am interested in health care practices among Rathwa living in Kadipani village. I would like to talk with you about the health care services you provide for Rathwa. All information you provide will be kept confidential. Your participation is voluntary. There are no foreseeable risks if you agree to participate. If you choose not to participate, there are no consequences, and if you decide that you want to end the interview at any time, you may do so. This interview will take about 30 minutes. The information you provide will be used to learn about local health care practices and to develop programs to improve villager health. If you have any questions about the research you may contact me at 9924453332. I will be happy to answer any questions you have. May I begin the interview now?

Health Care Provider name _______________________________ Date________
Name of clinic or hospital ____________________________________________
Location 1 = Kawant 2 = Kadipani 3 = Other ___________________________

1) Sex 1 = Male 2 = Female

2) Age _____

3) What type of health care service do you provide?
   1 = Allopathic/Biomedical
   2 = Ayurvedic
   3 = Homeopathic
   4 = Yunani/Unani
   5 = Bhoua
   6 = Other (specify) ________________________________________________

4) What health care related education do you have?
   1 = MBBS (Allopathic/biomedical)
   2 = BSAM (Ayurveda)
   3 = BHMS (Homeopathy)
   4 = Yunani/Unani (Hakim)
   5 = MD
   6 = Other _________________________________________________________
   7 = Bhoua
   8 = None _________________________________________________________

5) Where did you receive your health care education or training?

____________________________________________________________________

6) Do you have an area of specialization?
   1 = Yes 2 = No
7) If yes, what is your area of specialization?
________________________________________________________________________

8) How long since you completed your education have you been providing health care?
   1 = less than one year
   2 = 1 – 3 years
   3 = 4 – 6 years
   4 = 7 – 9 years
   5 = 10 years or more

9) Approximately how many Rathwa from Kadipani do you typically treat per day?
   1 = None
   2 = 1 – 3 per day
   3 = 4 – 6 per day
   4 = 7 – 10 per day
   5 = More than 10 per day
   6 = Other (specify) ______________________________________________________

10) What types of illnesses do Rathwa typically seek treatment for?
________________________________________________________________________
________________________________________________________________________

11) How frequently do you treat Rathwa for \textbf{malaria}?
   1 = Never
   2 = 1 - 3 times per week
   3 = 4 - 6 times per week
   4 = 7-10 times per week
   5 = More than 10 times per week
   6 = Daily
   7 = Other (specify) ______________________________________________________

12) How do you typically treat \textbf{malaria}?
________________________________________________________________________
________________________________________________________________________

13) How frequently do you treat Rathwa for symptoms related to \textbf{sickle cell anemia}?
   1 = Never
   2 = 1 - 3 times per week
   3 = 4 - 6 times per week
   4 = 7-10 times per week
   5 = More than 10 times per week
   6 = Daily
   7 = Other (specify) ______________________________________________________
14) How do you typically treat sickle cell anemia?

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

15) Do you collaborate with other health care providers when treating Rathwa?
1 = Yes___ 2 = No___

16) If yes, what do you do?

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

17) Do your Rathwa patients use the services of other health care practitioners, including those of a bhoua while they are receiving treatment from you?
1 = Yes___ 2 = No___
If yes, who? _____________________________________________________________

18) Do you tell your Rathwa patients the type of health care you provide (e.g. Allopathic, Ayurvedic, Homeopathic, Yunani/Unani)?
1 = Yes___ 2 = No___

19) Do your Rathwa patients ever ask you what type of health care provider you are?
1 = Yes___ 2 = No___

20) If yes, what do you tell them?

________________________________________________________________________
________________________________________________________________________

21) If No, do you voluntarily tell them what type of health care provider you are?
1 = Yes___ 2 = No___
Why or Why not? _________________________________________________________

22) How do you think Rathwa decide which type of health care provider to seek services from? Why?

________________________________________________________________________
________________________________________________________________________

23) What factors do you think are the most important to Rathwa selecting a health care service provider? ____________________________________________________________

What type of health care services are not available to Rathwa now but should be made available? ____________________________________________________________
24) How would you rate the general health status of the Rathwa?
1 = Excellent  2 = Good  3 = Fair  4 = Bad  5 = Don’t know

25) What do the Rathwa believe causes sickness and disease?
APPENDIX C

ENGLISH VERSION OF VILLAGER SURVEY FORM
I am doing a survey for the University of South Florida to learn about health. We are looking for the participation of Rathwa men and women who live in Kadipani and are between 18 and 100 years of age. I will ask questions about your health and the health of persons living in your household. All information you provide will be kept confidential. Your participation is voluntary. If you decide that you want to end the interview at any time, you may do so. The survey will take about 30 minutes to complete. If you have questions about the research, you may contact Margaret Karnyski at 9924453332. She will answer any questions you have. May I begin the interview now?

1) Sex 1 = Male____ 2 = Female____

2) How long have you yourself lived in Kadipani village? _____years
(Total time lived in Kadipani village, not just in this current household).

3) Where did you live before living in Kadipani village? _________________

4) If you have lived in another village, why did you move to Kadipani village?
1 = Marriage
2 = Family moved
3 = Loss of home at another village on the Narmada River
4 = Work at GMDC __________________________
5 = Other (specify) __________________________

5) How many people including yourself live in your household? _______
Men______ Women______ Children______

6) What relation are you and the persons living in your household and their ages?
Starting with the head of the household, list all relations and their ages below.

<table>
<thead>
<tr>
<th>#</th>
<th>Relation</th>
<th>Age</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Head of household</td>
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</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
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<td>3</td>
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<td>14</td>
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<tr>
<td>15</td>
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</tr>
</tbody>
</table>
7) How good is your health and the health of all persons living in your household?
Starting with the Head of the household, write the relation of each person living in the household, including the respondent and all children. Circle each relation’s health status (1 = Excellent, 2 = Good, 3 = Fair, 4 = Bad) according to the respondent.

<table>
<thead>
<tr>
<th>#</th>
<th>Relation</th>
<th>Health status</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Head of household</td>
<td>1 = Excellent</td>
</tr>
<tr>
<td>2</td>
<td>Respondent</td>
<td>1 = Excellent</td>
</tr>
<tr>
<td>3</td>
<td></td>
<td>1 = Excellent</td>
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<tr>
<td>4</td>
<td></td>
<td>1 = Excellent</td>
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<tr>
<td>5</td>
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<td>1 = Excellent</td>
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<td>14</td>
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<td>1 = Excellent</td>
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<tr>
<td>15</td>
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<td>1 = Excellent</td>
</tr>
</tbody>
</table>

8) Has any health care provider told you that you or any person who lives here has had MALARIA IN THE LAST YEAR?
1 = Yes  2 = No
If NO, go to question 10.
If YES, list below members of the household who have had malaria.
Tick if they still have malaria, how long they have had malaria, if they are taking or have taken anti-malaria medicine, if they are using or have used home remedies to treat malaria, and how many times they have had malaria in the last three years.

<table>
<thead>
<tr>
<th>Relation</th>
<th>Age</th>
<th>Still has malaria?</th>
<th>How long?</th>
<th>Anti-malaria medicine?</th>
<th>Home remedies?</th>
<th>Malaria in last 3 years?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td></td>
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<td>10</td>
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</tbody>
</table>
9) What medicines have people in the household taken for malaria?
A = Chloroquine  B = Primaquine  C = SP/Fansidar  D = Combination with Artemisinin
E = Other  F = Antibiotic drug  G = Other (specify)  H = Don’t Know Antimalarials

10) What home remedies do you know of that are used for malaria? Specify:
___________________________________________________________________

11) Does this household use mosquito nets at night when sleeping?
1 = Yes  2 = No  Why or why not______________________________________

12) Has a chemical spray to kill mosquitoes been used in Kadipani in the last year?
1 = Yes  2 = No

13) How many times in the last year was a chemical spray used in Kadipani to kill mosquitoes? #_____

14) Circle below what your household does to NOT get sick with malaria.
A. Sleep with nets  B. Burn mosquito coils  C. Chemical spray in house  D. Neem leaves outside
E. Animals outside  F. Cover water vessels  G. Chemical on skin  H. Anti-malaria medicine
I. Other (specify below)  J. Nothing

___________________________________________________________________
___________________________________________________________________

15) Has any health care provider said that you or any person who lives here has SICKLE CELL ANEMIA?
1 = Yes  2 = No
If NO, go to question 17.

16) If YES, list below each relation in the household who has sickle cell anemia. Write their age when it was detected and how it was detected. Tick if he or she takes medication or uses home remedies to treat symptoms of sickle cell anemia.
17) What home remedies do you know of that are used for sickle cell anemia? Specify: ___________________________________________________________

18) Have you or anyone in the household had a blood test for sickle cell anemia?
1 = Yes  2 = No

19) If you or persons in the household could get a blood test for sickle cell anemia, would you get that blood test?
1 = Yes  2 = No  Why or Why not? ________________________________

20) Tick which health services you use when sick with the illnesses below and why.

<table>
<thead>
<tr>
<th>Illness</th>
<th>Home Remedy</th>
<th>Bhoua Clinic</th>
<th>Private Clinic</th>
<th>Government Clinic</th>
<th>Other</th>
<th>Nothing</th>
<th>Why?</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Malaria</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B. Sickle cell</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>C. Cough/cold</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>D. Fever</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>E. Joint pain</td>
<td></td>
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</tr>
<tr>
<td>F. Tuberculosis</td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>G. Headache</td>
<td></td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>H. Skin rash</td>
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<td></td>
</tr>
<tr>
<td>I. Snake bite</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>J. Diarrhea</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>K. Stomach pain</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>L. Child birth</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>M. Broken bone</td>
<td></td>
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</tr>
<tr>
<td>N. Vomiting</td>
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</tr>
</tbody>
</table>
21) Tell me about the last time your household used each of the following health care services, the location, the sickness, if the care was good or bad, why it was good or bad, and the cost.

<table>
<thead>
<tr>
<th>Health care service</th>
<th>Location</th>
<th>Sickness</th>
<th>Good care</th>
<th>Bad care</th>
<th>Why good or bad?</th>
<th>Cost?</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Private clinic</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B. Private hospital</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>C. Public clinic</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>FREE</td>
</tr>
<tr>
<td>D. Public hospital</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>FREE</td>
</tr>
<tr>
<td>E. Bhoua</td>
<td></td>
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<td></td>
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<tr>
<td>F. Homoeopathy Dr.</td>
<td></td>
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</tr>
<tr>
<td>G. Ayurveda Dr.</td>
<td></td>
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</tr>
<tr>
<td>H. Yuani Dr.</td>
<td></td>
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<tr>
<td>I. Medical Dr.</td>
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<tr>
<td>J. Chemist</td>
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<tr>
<td>K. Dispensary</td>
<td></td>
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<tr>
<td>L. Drug distribution center</td>
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<tr>
<td>M. Fever treatment depot</td>
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</tr>
</tbody>
</table>

22) What health care services would you like to have that you don’t have now?
___________________________________________________________________
___________________________________________________________________

23) Many things can prevent people from getting health care for themselves or persons in their household. Circle YES or NO which of the following are a problem when you or a person in your household wants health care.

<table>
<thead>
<tr>
<th>Problem</th>
<th>Circle Yes or No</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Getting <strong>permission</strong> to go?</td>
<td>Yes    No</td>
</tr>
<tr>
<td>B. Getting <strong>money</strong> for needed treatment?</td>
<td>Yes    No</td>
</tr>
<tr>
<td>C. The <strong>distance to the health facility</strong>?</td>
<td>Yes    No</td>
</tr>
<tr>
<td>D. Having to take <strong>transport</strong>?</td>
<td>Yes    No</td>
</tr>
<tr>
<td>E. Finding <strong>someone to go with you</strong>?</td>
<td>Yes    No</td>
</tr>
<tr>
<td>F. No <strong>female provider</strong> available?</td>
<td>Yes    No</td>
</tr>
<tr>
<td>G. No <strong>qualified health care provider</strong>?</td>
<td>Yes    No</td>
</tr>
<tr>
<td>H. Concerns that no <strong>drugs</strong> are available?</td>
<td>Yes    No</td>
</tr>
<tr>
<td>I. <strong>Physical disability or handicap?</strong></td>
<td>Yes    No</td>
</tr>
</tbody>
</table>
24) Circle who usually makes health care-related decisions in your household: the head of the household, you (respondent), your spouse, you and your spouse jointly, or someone else?
1 = Head of Household  2 = Respondent  3 = Spouse  4 = Jointly  5 = Someone else (specify) _________________________________________

25) Write all home remedies used in the household. What is each used for? Where do they come from? What does it cost? When was it last used? Why was it used?

<table>
<thead>
<tr>
<th>Remedy</th>
<th>Use</th>
<th>Origin</th>
<th>Cost</th>
<th>Last used</th>
<th>Why</th>
</tr>
</thead>
</table>

26) How old are you? _______

27) What is your marriage status?
1 = Never married  
2 = Married  
3 = Divorced  
4 = Widow  
5 = Widower

28) Have you ever attended school?
1 = Yes  
2 = No

29) What is the highest standard you have completed?
1 = Primary School  
2 = Secondary School  
3 = Graduate  
4 = No schooling  
5 = Other  
Total years of schooling _____

30) What type of tenant are you?
1 = Own house  
2 = Rent house  
3 = Family owns house  
4 = Other _______
31) How many rooms are in the house?
   1 = One
   2 = Two
   3 = Three
   4 = Four
   5 = Five or more

32) Where do you get your water to cook and drink?
   1 = Well
   2 = Tap
   3 = Bottled water
   4 = Rain
   5 = River
   6 = Hand pump
   7 = Other __________________________________________________

33) How do you make water safe to drink?
   1 = Boil
   2 = Use Alum
   3 = Add bleach or chlorine tablets
   4 = Strain through a cloth
   5 = Use water filter (ceramic, sand, composite, etc).
   6 = Use electric purifier
   7 = Let it stand and settle
   8 = Earthen pot
   9 = Nothing

34) Does your household have? (Circle all that respondent says the household has)
   1 = monthly income (amount in Rs) _______
   2 = electricity
   3 = chair
   4 = table
   5 = cot/bed
   6 = mattress
   7 = radio
   8 = television
   9 = animal drawn cart
   10 = bicycle
   11 = motorcycle/scooter
   12 = car
   13 = mobile telephone
   14 = any other telephone
   15 = electric fan
   16 = more than 3 livestock animals
   16 = other (specify) ____________________________________________
35) Who earns money for the household?

____________________________________________________________

36) How many persons in the household do not earn money? (# of persons) ______

37) Do you get money from friends or family outside of Kadipani?
1 = Yes (specify from whom) ________________________________
2 = No

38) What type of work do you do?
1 = Farming/agriculture (specify crops) ________________________________
2 = Self employed (specify work) ________________________________
3 = Laborer (specify work) ________________________________
4 = Truck driver
5 = GMDC worker (specify work) ________________________________
6 = Factory worker (specify work) ________________________________
7 = Salaried worker (specify work) ________________________________
8 = Housewife
9 = Unemployed
10 = Other (specify) ________________________________

39) If respondent works in farming/agriculture, do they do that work:
1 = permanently
2 = occasionally
3 = seasonally

40) If respondent works in farming/agriculture, is the land they work on:
1 = owned
2 = rented
3 = belongs to a relative
4 = belongs to employer
5 = other (specify) ________________________________

41) If self employed, do you own a shop or business?
1 = Yes  2 = No
If Yes, specify type of business ________________________________

42) If respondent works at GMDC, specify:
A. Job title ________________________________
B. Number of days worked each week _________
C. Do you receive health care from GMDC?  1 = Yes  2 = No
D. Have you ever received health care for malaria at GMDC?  1 = Yes  2 = No
E. Does GMDC provide health insurance for you and your family?  1 = Yes  2 = No

Thank you for your time today. This information will be used to learn about health in Kadipani village. END INTERVIEW
RESULTS CODE (Please circle)
1 = Completed
2 = Partially completed (reason) __________________________________________
3 = Refused
4 = No household member at home at time of visit.
5 = Entire household absent for extended period of time
6 = Dwelling vacant or address not a dwelling
7 = Dwelling destroyed
8 = Dwelling not found
9 = Other ________________________________
APPENDIX D

GUJARATI VERSION OF VILLAGER SURVEY FORM
1. પણ માંગે?
2. એક ટેલર કરીને ડીપાવલી ભરો નીચુ?
3. એક ડીપાવલિની ટેલર પેલી આપી આપી કી?
4. પ્રેરણા નીરજ છતા તો ડીપાવલીની ટેલર પણ માંક અમારા?

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8. અનુભવપ્રદોપન દેખાતા અનુભવ દેવાયું છે તેનાથી અમે અમારી મદદગારના સમયે મહત્વપૂર્ણ નિષ્ણાની વિવાહી આવશ્યકતા કઈ કરી?

1. હંગમા?
2. ના?

કે હંગમા, કે કારણ તો પ્રતિભા પર પણ માગું?
જે કે, ક્ષેત્ર તે અમારે વૃદ્ધિ અને આધુનિક જીવન દ્વારા વસ્તુ (\(Y\)) સાથે વિવિધ ક્ષેત્રો કે ક્ષેત્રો ભેટે મદદગારી નિષ્ણાની ફાયદાઓ વચ્ચેના છે. હંગમા દેખાય કે કોઈ ક્ષેત્રને મહત્વપૂર્ણ ઝરી ક્ષેત્ર ખેલ મદદગારી કે આવશ્યકતા કે લખ કે જ તે મદદગારી અને કે ક્ષેત્ર મદદગારી અમારી વર્ગીકરણ કે ક્ષેત્રો મદદગારી કે આવશ્યકતા કે ક્ષેત્રો મદદગારી કે ક્ષેત્રો મદદગારી અમારી વર્ગીકરણ કે ક્ષેત્રો મદદગારી કે ક્ષેત્રો મદદગારી અમારી વર્ગીકરણ કે ક્ષેત્રો.
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<th>તોડકાદાના તપાસેલા વિષય</th>
<th>માહિતી અપડેટ કરી શકેલા વિષય</th>
<th>મહરેલા હોવા પ્રાર્થના કારણ</th>
<th>મહરેલા મુસાફરભારત કાર દાખલ કરો</th>
<th>કલાકુંડ શીર્ષક</th>
<th>તોડકાદાના તપાસેલા વિષય</th>
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6. કુલ એકલ સંખ્યાને ગુજરાતી ત્રીજા નાખો કાદમબાબુ લીલીદી હે?

<table>
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<tr>
<th>A- કલાકુંડ શીર્ષક</th>
<th>B- પ્રકારકશીર્ષક</th>
<th>C- વૈશ્વિક/સ્ટ્રિક્શીકર</th>
<th>D- સમાજ શીર્ષકના રીતે હાઇપોડસનના</th>
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<td>ગુજરાતી ત્રીજા શીર્ષક</td>
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10. એકલ કોંડના હાઇપોડસના ગુજરાતી ત્રીજા નાખો પાંડાલ હે. આગળ જ કરો.

11. કુલ એકલ સંખ્યા નાખો નાખી કોંડના વિધાન વચ્ચે કયે?
   1. હા
   2. ના

12. સમાજ સબર્ડન એકલ કોંડ પાંડાલ નાખો કોંડના વિધાન વચ્ચે કયે?
   1. હા
   2. ના

13. એકલ કોંડ સમાજ સબર્ડના નાખો કોંડ નાખો કોંડના વિધાન વચ્ચે કયે?

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12. વેક જવાબેલ વિકારેલ 0 નૂં વિવેક મથ્યું, જનર કુલ્પના સફળાના અને નિવૃત્તિની વિનાશ મિટે હોય છે?

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<th>B-રજાની વિવિધતા</th>
<th>C-સમાચાર વિશ્લેષણ</th>
<th>D-વિશ્લેષણ પદાર્થ</th>
<th>E-સંબંધ જીવની રાજકીય</th>
<th>F-સંબંધ પદાર્થો વિવિધતા</th>
<th>G-સમાચાર પદાર્થો વિવિધતા</th>
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13. અણ્ટીયલી રાજય દ્વારા સંબંધી જીલ હતું તે તમામ પદાર્થો સફળ કરે તેમના લીલા-કેટલા-શ્રેષ્ઠ વિવિધતા માટે કિંમત હોય છે?

1. એ
2. બ
3. ભ
4. જ
5. ટ
6. પ
7. ર
8. સ
9. ઎
10. હ
16. લિપિદાઝ-ડિવલ-ઓનિમેશન માટે એવું વિવિધતા ઉપયોગ કરવામાં આવે છે?

17. તમે સામાનય તમામ સુતરદાન સામગ્રીને લિપિદાઝ-ડિવલ-ઓનિમેશન માટે લોકીયી તપાસ કરવી છો?
   1. હી
   2. ની
   3. મું/નુ

18. જો લિપિદાઝ-ડિવલ-ઓનિમેશન માટે લોકીયી તપાસ કરવાની પરિસ્થિતિ હો, તો અન્ય લોકીયી તપાસ કરવા વધુ વધુ હોય છે?
   1. હી
   2. ની
   3. મું/નુ

19. (✓) જુદા વિષય તથા વિનાકર હો સૌ કલ કલ આપવામાં આવતી નીચેની સેલબરો રેયર વિનાકર કેવી રીતે વિવેચન કરી?

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<th>વિનાકરનું ધરાવું</th>
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21. આદિકારી નામની લેખામાં દેખાતી વાત પુસ્તકોમાં સામાન્ય વર્ણન કરી શકીશો? વિષેય્યં, વિષેય્યં કારણી વાતગત દુઃખાતી સમાગમ કરી શકીશો? સામાન્ય સમાગમ કરી શકીશો?
22. આસાદ જે આહેવાસને દશાતી સાબિત નથી તેવી કારણ સાબિત તમને મળી તે તું તમે ઇચ્છા કી?

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<td>B. પેટમાં જુભુ કરી?</td>
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<td>C. આશાદી સુખાયાય સાથ રહ્યુ કરી?</td>
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<td>I. પ્રકાશના ધક્કા આવીના સાધના?</td>
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23. તમારા ધરાબ અને આસાદી અને તેની સેવામાં પ્રસાદના નિર્ધારણ કરો: તો કે?

1. સુખાયા સુખાયાય કલક્ત | 2. સુખાયા સુખાયાય | 3. પ્રકાશ

4. અને લેખ મહારાજ: 5. જીજો ક્યોજ કલક્ત

6. આસાદી કાલજિત

24. કોઈ આશાદી જુભુ કાઢી ન કરી તમે કી? તે આસાદી સેવામાં અને કી? તે થી કીમત કી તે તેની સેવામાં કી તે તેની સેવામાં કી?

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25. તમારી ઉપાધ્� કી છે?
26. તમારી ઉપચાર કી છે?
   1. શૈક્ષણિક
   2. મુખાંદાન
   3. વ્યોંગ
   4. વિદ્યુત
27. તે મોટા પ્રશ્નને જવા શક્ય છે?
   1. શૈક્ષણિક
   2. મુખાંદાન
28. તમારી ઉપચાર છુટ્યા છે?
   1. મુખાંદાન
   2. વ્યોંગ
   3. 8/10
   4. કેટેટ
   5. જાણત
29. તમારી ઉપચાર કોણે થતી છે?
   1. પીલી (તાલવચી)
   2. પાલ્લા
   3. લોકો પ્રતિ
   4. ગંગા
30. તમારા દશમ કે હોકો આવી છે?
   1. બાલ
   2. રોગ
   3. તલ
   4. હાર
   5. પુત્ર, અને તેની તરીકે
31. તમારે પીલા પાલી કાચારી મળી છે?
   1. તુલના
   2. તળ
   3. તાલવચી પાલી
   4. સાચી
   5. ગંગા
   6. લોકો 
   7. ગંગા
23. મીટરીની વિદ્યાર્થીની તપાસ કરવા માટે?
1. મુખ્યક અમૃત (પ્રવૃત્તિ)
2. ઉત્તરપદ્ધતિ કોડ
3. લક્ષણ
4. સૂચના
5. પહેરી / દેવવો
6. હિદદર
7. કાર્યો
8. રોડિંગ
9. સંકલક
10. હોટર સ્ટ્રીક, કાયદ
11. હસીણ
12. હોટર/એસએસ
13. અમૃત કોડ રોડિંગ
14. વિશ્વવિદ્યાલય
15. મોભિલ
16. અમૃત સહેલી
17. અંગાર

34. તમારી શિક્ષણ માર્ગ પ્રથમાં કીમટ હતી?

35. તમારી સ્થાપના હેઠળ જમ્યુ કલા હતી?

36. તમારી સ્થાપના કોની શૈલી?
1. બે (કચોર રસાલી)
2. પ્ર.

37. તમે કી ભાષામાં આવી હતી?
1. સ્વિટચ/સ્પર્શ (બેનેના સ્ક્રીન)
2. બેનજીન (માથી)
3. ગુજરાત
4. હદ્દુદ પ્રવૃત્તિ
5. પ્ર. ગુજરાતી
6. ગુજરાતના મુખ્ય
7. નીલીયોક
8. ભાવમ

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38. તમે પ્રસ્તુત કહી છો?
1. મિત્ર
2. ધ્યેયક પ્રશાંત
3. માટું (પોઝિશન) સામે?

39. તમે જ પરિયોજના સમ કરી કી તે જરીએ?
1. વેકેટ
2. ઓફલ
3. લાંઘલેય
4. મોટરના છ.
5. અલગ

40. તો તમે પોતે પ્રિય હતો, આપણી પાસે કુલમ વાહન ખરીદી છે?
1. હું
2. ના
3. ત્રીશ
4. ના

41. તો તમે જ ખેસરી સી. ખેસરી સી. માટે આપણે છે?
એ. હેઠળ હેઠળ સમ કરી છે?
એ. આપણે જ ખેસરી સી. ખેસરી સી. સૌથી કલ્યાણના સમવાત માટે છે?
1. હું
2. ના
3. ત્રીશ
4. ના

અસરનું સભિતનું સદ્દમ માટે આપણે ક્રમાંકું અલગ. આપણી લક્ષીકરણથી કેટલાક આપણી સામર્થ્યની રાજકીય માટે વિશ્વમાં લખીને.

પ્રશ્નપ્રાપ્તિ (જવાબદાતા)

1. સંભળી
2. અફાંચુ
3. ના પાછળી
4. વધું, કેબેલા સંભળવા મિત્રડાનું પહેરાવા નહીં (કેબેલા થિયુ)
5. પણ પણ જ વધું વધું વધું લાખ સમાચાર ન ખોંટુ
6. પોઝિશન પાછળી ખોંટુ
7. સંભળવા લોકો હજી.
8. લોકો ન માટું
9. કાપ્ય.
About the Author

Margaret Karnyski received a Bachelor of Arts degree in Sociology from the State University of New York at Buffalo in 1979, a Master’s of Science degree in Rehabilitation Counseling from Syracuse University in 1982, a Master’s degree in Library and Information Science from the State University of New York at Buffalo in 1989, and a Master’s of Arts degree in Cultural Anthropology from San Diego State University in 2004. She has worked in both the private and public sectors, including positions in health care-related facilities, academic institutions, as well as a prominent international law firm and a large international telecommunications corporation.

While a doctoral student in the anthropology department at the University of South Florida, Ms. Karnyski worked on a research project examining the efficacy of a teacher professional development program on elementary school student performance in science. She also taught Introduction to Anthropology, a four-field approach. Ms. Karnyski authored a section in Strategies in Teaching Anthropology 5th edition and has made paper presentations at meetings of the American Anthropological Association, the Society for Applied Anthropology, and the Hawaii International Conference on Arts and Humanities. Ms. Karnyski is currently adjunct faculty teaching introductory cultural and biological anthropology for the San Diego Community College District’s Mesa College in San Diego, California. Her research interests include: ethnomedical and biomedical health care practices, specifically examining how they intersect; indigenous knowledge and its place in a modernizing world; religion and spirituality.