2015

Ayurvedic, Allopathic & Integrated Treatment of Diabetes in Northern India: Practitioner Perceptions

Camille M. Clancy

University of Vermont

Follow this and additional works at: https://scholarworks.uvm.edu/hcoltheses

Recommended Citation
https://scholarworks.uvm.edu/hcoltheses/213

This Honors College Thesis is brought to you for free and open access by the Undergraduate Theses at ScholarWorks @ UVM. It has been accepted for inclusion in UVM Honors College Senior Theses by an authorized administrator of ScholarWorks @ UVM. For more information, please contact donna.omalley@uvm.edu.
Ayurvedic, Allopathic & Integrated Treatment of Diabetes in Northern India: Practitioner Perceptions

By Camille Madeleine Clancy

April 28, 2015

Submitted in partial fulfillment of College Honors Individually Designed Major in Global Health College of Arts & Sciences University of Vermont

Thesis Committee:
Jeanne Shea, Department of Anthropology, Advisor
Dr. Jaskanwar S. Batra, Department of Psychiatry, Committee Chair
Jennifer Dickinson, Department of Anthropology, Committee Member
Il Ano bhadraa: krathavo yanthu viswatha II

“Let noble thoughts come from all sides.”

-Rigveda
# TABLE OF CONTENTS

Abstract  
Acknowledgments

Chapter 1: Introduction

1. Objective of Study  
2. Evolution of Topic  
3. Varying Implications of Integrative Practice  
4. Background
   - Diabetes Mellitus in India  
   - Brief Description and Comparison of Ayurveda and Allopathy  
   - Statistics on the Prevalence of Ayurveda and Allopathy in India  
   - Government Standing on Integrative Practice in India
5. Scholarly Significance
6. Research Questions
7. Argument
8. Methods
   - Interviews  
   - Data Analysis  
   - Ethical Precautions
9. Original contribution

Chapter 2: Allopathic & Ayurvedic Representations of Type II Diabetes Mellitus

1. Introduction  
2. Allopathic Description, Classification, & Treatment  
   - Allopathic Description  
   - Allopathic Classification  
   - Allopathic Treatment
3. Ayurvedic Description, Classification, & Treatment  
   - Ayurvedic Description  
   - Ayurvedic Classification  
   - Ayurvedic Treatment
4. Discussion
   - Research Findings in Context of Scholarly Literature  
   - Ayurvedic and Allopathic Perceptions of DM2
5. Conclusion

Chapter 3: Physician Interviewees’ Perceptions of Ayurveda and Allopathy

1. Introduction  
2. Similarities and Differences in Perceptions across Practitioner Types  
   - Perceptions about Ayurveda  
   - Perceptions about Allopathy
3. Discussion
Research Findings in Context of Scholarly Literature

V. Conclusion

Chapter 4: Integration

I. Introduction
II. Defining Integration in the Scholarly Literature
III. Understanding Physician Viewpoints on Integration
   *Perceptions of the Value of Integration & How It Should Occur*
V. The Occurrence of Unstructured and Structured Integration
   *How Unstructured Integration is Occurring*
   1. Unstructured Physician-Based Integration
      *Unstructured Integration by Ayurvedic Physicians*
      *Physician Views on Unstructured Physician-Based Integration*
   2. Unstructured Patient-Based Integration
      *Structured Integration and How It Is Occurring*
      1. Structured Physician-Based Integration
      2. Structured Institution-Based Integration
VI. Discussion
   *How Integration Should Occur*
   Similarities in Scholarly Literature
   Differences in Scholarly Literature
   *The Occurrence of Integrative Practices*
   Similarities in Scholarly Literature
   1. Patient-based Integration
   2. Institution-based Integration
   3. Physician-based Integration
   Differences in Scholarly Literature

VII. Conclusion

Chapter 5: Final Conclusions

I. Summary of Findings
   *How DM2 is Described, Classified, and Treated*
   *Physician Perceptions of Allopathy and Ayurveda*
   *How Physicians Compared in their Viewpoints on Integration*
   *The Structured and Unstructured Occurrence of Integration*
II. Implications
   *Scholarship Implications*
   *Practical Implications*
III. Limitations
IV. Recommendations for Future Research

Appendices
Bibliography
Acknowledgements

First and foremost, a great big thank you goes to Vincent Pelletier, who has supported me in this project from its very beginning. Whether oceans away or here in Burlington, you have read more drafts than anyone ever should on this topic, and provided me with true companionship and understanding.

I owe many thanks to Professor Jeanne Shea for serving as my advisor not only on this thesis, but throughout the creation of my individually designed major as well. I would also like to thank the other members of my committee, Dr. Jaskanwar S. Batra in the department of Psychiatry, who agreed to serve as committee chair, and Professor Jennifer Dickinson from Anthropology. I appreciate all of your help and assistance through this process, and thank you for lending your time to serve on my committee. Additionally, many thanks to the Honors College for the support extended to all of us writing senior theses as well as the University of Vermont for awarding me a 500$ APLE grant, which helped finance the collection of data for this thesis.

Finally, I would like to thank my teachers in India, Goutam Ji, Archna Ji, and Bhavna Ji, for teaching me how to speak and write in basic Hindi, and showing me nothing but patience and kindness in my moments of frustration and sickness. Moreover, without the help of Doctor Rajat, I would have never met any of the wonderful doctors who participated in this thesis. Thank you for agreeing to advise me in this project, and providing insightful ideas and overall support. Thank you to Dr. Asawa, Dr. Sarvaiya, Dr. Narula, Dr. Shroff, Dr. Ghanchi, Dr. Singh, Dr. Jiany, and Dr. Bhaskaran for taking the time to share your knowledge with me on this topic. I would also like to give a special thank you to Dr. Deepak Joshi, who showered me with inspiring words about Ayurveda. Thank you for taking the time to teach me and help in the creation of this paper, as well as being the light of hope that helped this study achieve its overall purpose.
Abstract

This study is based on a research of diabetic treatment and medical integration in Uttarakhand, North India. It explores ayurvedic, allopathic, and integrated diagnoses and treatment of diabetes with a focus on adult-onset (Type II) diabetes. Not only is India ranked second in the world in diabetes prevalence, but it is also the host of the two prevailing systems of medicine described in this study: Ayurveda and Allopathy. Considering the shortcomings of modern medicine to prevent and treat chronic illness, there has been much discourse about the value of integrating Ayurveda and Allopathy. This study seeks to answer how ayurvedic and allopathic physicians compare in their philosophies underlying the treatment of Type II diabetes, their perceptions of Ayurveda and Allopathy, and in their views of their own integrative practices as well as in the value and existence of integration. The research for this study was done in the spring of 2014. The data are derived from semi-structured interviews with eleven physicians in the cities of Dehradun, Rishikesh, and Palampur. The interpretivist and critical medical anthropology theoretical approaches serve as a guide to the methodology of this study.

Findings suggest that allopathic and ayurvedic physicians have many differences in their descriptions, classifications, and treatments of Type II diabetes, as well as a few similarities. The ayurvedic and allopathic physicians of this study are well matched in their knowledge of the strengths and benefits of the other pathy. The knowledge that physicians have about the other system either prompts or discourages their ability and desire to integrate. Ayurvedic and allopathic physicians share both positive and negative views about integration. Although not all interviewed physicians support integration, many of them list particular circumstances in which it should occur. Scholarly implications of this study include a need for a closer analysis and quantification of the ways that unstructured integration is occurring. In light of the potentially harmful effects of unstructured integration and the valuable outcomes of structured integration, practical implications include a need for more dually trained physicians.
Chapter 1: Introduction

I. Objective of Study

My thesis involves the diagnoses and treatment of ayurvedic, allopathic, and integrated practices related to Type II diabetes mellitus (DM2) in the northern state of Uttarakhand, India. In the spring of 2014, I spent a month in Dehradun, the capital of Uttarakhand, collecting data for this study. A total of 11 interviews were conducted: five with ayurvedic physicians, five with allopathic physicians, and one with a physician who was dually trained in both Ayurveda and Allopathy.

The objectives of this study are to describe the diverse forms of integrated practice occurring in the treatment of DM2 and to understand how ayurvedic physicians, allopathic physicians, and a dually-trained physician compare in their perceptions of the value of integration.

To meet these objectives, this study first describes the treatment methods for DM2, both non-integrated and integrated, used by all three types of physicians whom I interviewed. The views of the physicians regarding the systems of Ayurveda and Allopathy are also assessed with the purpose of exploring whether and how a physician’s knowledge of the other pathy may influence their desire or ability to integrate.

II. Evolution of Topic

In the earlier stages of my research, my intention had been to focus on the structured integration of Ayurveda and Allopathy. I primarily intended to observe physicians who were dually trained in both Ayurveda and Allopathy, as I believed this was where a systematized integrative practice was most likely to occur. In order to do so, however, I needed to focus on a specific area in which integration was commonly used. I decided to focus on the treatment of diabetes, given its predominance in India. Moreover, I narrowed the subject even further to type II diabetes, as it is the more common form occurring in India and is most applicable to the subject of integrative practice.

Upon interviewing the physicians of this study, I discovered that the type of integration I had set out to investigate was different from what I actually observed. Only one of the 11 physicians I had interviewed provided a structured integration of Ayurveda and Allopathy. This one physician, Dr. Deepak Joshi, was an allopathic physician who had also decided to train himself in Ayurveda. On the other hand, the other ayurvedic and allopathic physicians of my study provided an unstructured integration that could also be described as complementary or alternative, at times. Given these findings, I realized that the word “integration” was not complete in describing the treatment practices of the physicians as well as their views and perceptions of each system. Rather, my data represented schemas of integrative, complementary, and alternative
practices. A complementary and alternative medicine (CAM) study by Barrett (2003) defines these three paradigms, with complementary practice occurring when both systems are used alongside each other, alternative practice occurring when one system is used instead of the other, and integrative practice resulting from a “thoughtful incorporation of concepts, values, and practices from both systems” (937).

The integration that appeared in my study was categorized in two forms: structured and unstructured. Whereas the structured integration represents a consistent, pre-meditated, and legally approved form of integration, the unstructured integration is less conscious, less intentional, and unsupported by the law. The integration seen in Dr. Deepak Joshi’s DM2 treatment as well as in certain institutions, such as hospitals and colleges represents a structured integration. This structured integration fits with Barrett’s description of integrative practice. On the other hand, the integration seen in the DM2 treatments of some of the ayurvedic and allopathic physicians of this study, as well as among some of their patients, represents an unstructured integration and does not match Barrett’s description. Rather, this unstructured integration may at times incorporate alternative and complementary themes as well, remaining extremely complex in its understanding.

Before beginning my study, I had read about the integrative practices occurring in India, commonly in the south. Given the limited scholarly sources about integrative practices in Uttarakhand, I had little knowledge of the integrated practices occurring in that area. I presumed the integration occurring among physicians in Uttarakhand to be similar to others in the scholarly literature, where allopathic and ayurvedic physicians were commonly prescribing and using the practices of both systems in their treatment of patients. However, in my own findings, I found that the integrated use of Ayurveda was less common among allopathic physicians. In fact, it was less prevalent overall among both the ayurvedic and allopathic physicians of my study, in comparison to the described integrative practices of the scholarly literature.

Additionally, during my interviews with ayurvedic and allopathic physicians, I had expected my questions about integration to be greeted with an enthusiastic and common understanding. However, I found a disconnect between my understanding of integration and the ways in which most of the doctors I interviewed talked about it. I was forced to reconfigure the preconceived notions I had made about integration and form a new understanding, seeing integration as it unfolded in the doctors’ own words. My findings confirmed the notion that not only is integration not a standardized system in India, but it is also inconsistent in its occurrence, even within India. Compared to the north of India, integration of Allopathy and Ayurveda is much more developed and acknowledged in the south, particularly in Kerala. Moreover, I found that even among the ayurvedic and allopathic doctors I interviewed, there was
considerable variation in their views of diagnoses and practices regarding ayurvedic, allopathic, and integrated treatment of diabetes.

While I had set out to study the “good” integration, i.e. the integration provided by the dually trained physician of my study, due to limited numbers of physicians providing a consistent, pre-meditated, and equally integrated treatment of Ayurveda and Allopathy, I resolved to study an integration that was less structured, less conscious, and had a less equal use of both systems. Whereas I had hoped to carry out a detailed study of numerous dually-trained super-integrators, I researched just one of those, and many other practitioners with unstructured integration tendencies.

III. Varying Implications of Integrative Practice

The importance of this study is upheld by the challenges that the medical industry faces today, particularly in the rising prevalence of chronic illnesses, such as diabetes mellitus. Chronic illness accounts for 75% of health expenses in many industrialized counties, with diabetes mellitus being one of the top most five expensive treatments. Moreover, despite the notable technological advances that have been made in Allopathy, the health status of people worldwide remains a growing concern, particularly in India. Allopathic medicine has also not yet reached all of the rural areas within developing countries (Sharma 2007:1012). Related to this, a study by Patwardhan (2005) has found that many people in developing countries, especially those in rural areas, have more access to traditional systems than modern medicines and use them more commonly. Concurrently, Patwardhan states that around 70% of people in India use traditional medicine to meet their primary health needs (11). According to a substantial amount of literature from varying disciplines, including medical anthropology, sociology, and biomedicine, there is a supported awareness that alternative types of medicine, such as Ayurveda, can be valuable in treating chronic illness and filling the gap biomedicine creates in terms of providing affordable and equitable health care to marginalized populations of India (Sharma 2007; Patwardhan 2005; Gawde 2013).

In light of these scholarly findings, I had expected the interviewed physicians to perceive the integration of Ayurveda and Allopathy as beneficial. However, I found a discrepancy to occur between these theories and my eventual findings. Barring the structured integrative practice provided by Dr. Deepak Joshi, which he described as extremely advantageous in the treatment of DM2, the types of unstructured integration described by the other physicians of this study were beset with primarily negative implications. In contrast to the possible benefits of integrative practice described in the scholarly literature, many of my interviewed physicians, particularly the allopathic ones, viewed integrative practice negatively. The adverse effects that correspond with the negative views physicians had about integrative practice are discussed in the scholarly literature and will be touched on in the conclusion of this study.
IV. Background

Diabetes Mellitus in India

If the global situation of diabetes is an ocean, then its status in India is one of the largest rivers flowing into it. Kaveeshwar and Cornwall (2014) state that in the year of 2000, India had the highest number of diabetics (31.7 million) in the world (45). According to the International Diabetes Federation (IDF) there were 66.8 million diabetic in the year of 2014. The number of diabetics in India is predicted rise even further, increasing to 123 million by 2035 (International Diabetes Federation). Not only are the numbers of diabetics increasing but diabetes is also appearing earlier in life, with many Type II Diabetes Mellitus (DM2) patients being diagnosed at the age of 20-30 years (D. Joshi 2005:97).

Another striking point is that two thirds of DM2 patients are underweight in India. Unlike in western countries, where the majority of DM2 diabetic cases are obese, the majority of the Indian population falls within the categories of underweight, otherwise known as malnutrition related diabetes mellitus (MRDM), and normal weight (Ahuja 1986:3). In fact, medical studies have found that children who are malnourished are more likely to develop chronic illnesses, such as diabetes, than adults (Deolalikar 2012:para 7). It has also been found that the maternal peri-conceptional nutritional status may affect a fetus, predisposing the fetus to certain risk factors of diabetes, such as obesity (Wells 2012:262).

In another vein, an upsurge of diabetes in urban populations symbolizes the rapid epidemiological transition, associated with changes in dietary patterns and decreased physical activity that has occurred in India. Such a transition is likely to alter the current statistics of diabetes, representing a switch that closely resembles western patterns.

Brief Description and Comparison of Ayurvedic and Allopathic Principles

In India, Ayurveda and Allopathy are the dominant systems of health care delivery. To understand their function in the treatment of diabetes, a brief description of their principles as well a few of their profound distinctions must first be clarified.

Ayurveda is defined as a science of life, with Ayu meaning life and Veda meaning science (Hankey 2001; Sridharan et al. 2010). Ayurveda is understood as a comprehensive approach that addresses mind, body, behavior, and environment (Hankey 2001:467). Ayurveda categorizes the body into three doshas, which include the three bodily humours called vata, pitta, and kapha. These humours are in charge of regulating and controlling the catabolic and anabolic metabolism of the body (Sharma et al. 2007). The basic idea of
Ayurveda physiology is to keep all processes flowing through the body’s channels. Ultimately, illness is produced when a channel becomes blocked (Hankey 2001). A final core concept in Ayurveda is that it individualizes the healing process. Treatment of disease substantially depends on the ahar vihar, the psychophysiological constitution of the patient.

Comparatively, Allopathy, also known as modern medicine, biomedicine, or western science, is defined as a system of medical practice that makes use of all measures that have proved of value in the treatment of disease (Merriam-Webster). The use of evidence-based medicine and reliance on the scientific method are pivotal aspects in Allopathy. Allopathy is also referred to as a branch of science, which deals with all structural, physiological, psychological and emotional deformities and abnormalities among living organisms. Other definitions include its basis on the principles of the natural sciences (e.g. biology, biochemistry) and its study of the diseases of the human body, which are caused by biological, chemical, physical, and psychosocial elements (Merriam-Webster 2014).

There is a copious amount of literature portraying Ayurveda’s distinct approach for health promotion, prevention, and treatment of disease in comparison to Allopathy. Unlike biomedicine, where diagnostic categories are limited and standardized, Ayurveda applies differential diagnosis. Khan (2006) and Halliburton (2011) take this further, explaining how drugs prescribed by Ayurvedic practitioners are specifically tailored to the individual’s psychophysiological constitution and relative imbalance. Moreover, as Leguizamon (2005) states, both biomedicine and Ayurveda view viruses and bacteria as causes of illness. The difference, however, is that Ayurveda categorizes these agents as secondary causes, with the soul, mind, senses and body also serving as sources of illness (3308). Leguizamon further the discussion of distinctions between Ayurveda and biomedicine by illustrating the ayurvedic body as vastly different from the anatomical body of western biomedicine. Through the lens of Ayurveda, the body is a compound of channels with substances flowing through them. Comparatively, under the biomedical gaze, the human body is described as a machine that can be dissected in terms of its parts. Disease, therefore, is perceived as the malfunctioning of biological mechanisms that are assessed from the perspective of cellular and molecular biology (Leguizamon 2005:3305).

Lastly, whereas modern medicine is placed on a pedestal in the biomedical world, food takes on an equally important role in Ayurveda. Ayurveda views the diet of a patient as a key component to the prevention of disease, thereby categorizing it as one of the main pillars of health in Ayurveda (Sharma 2007:1013).
Statistics on the Prevalence of Ayurveda and Allopathy in India

There is no question that Ayurveda and Allopathy are the two most prominent health systems in India. A study on the number of registered medical practitioners in India reaffirms this fact, stating that 48% of all practitioners are allopathic and 32% are ayurvedic, with the rest being Yoga, Unani, Siddha, Homeopathy, and Naturopathy practitioners (Kumar 2006:2). While both Ayurveda and Allopathy are dominant in India, more recent studies highlight the prevalence of Ayurveda. It is claimed that Ayurveda is the most commonly practiced form of complementary and alternative medicine (CAM) in India, as it fulfills the medical needs of 80% of the population (Verma 2007:3; Gogtay 2002). In harmony with this, a 2013 report released by the Central Bureau of Health Intelligence (CBHI) indicates that 8% of the Indian population is served by allopathic doctors whereas 11% is served by the AYUSH (Ayurveda, Yoga and Naturopathy, Unani, Siddha, and Homeopathy) practitioners, with ayurvedic doctors being most common (181). Accordingly, based on the state and union territory-wise account of government allopathic doctors versus the account of registered AYUSH doctors, it is found that there are 106,813 government allopathic doctors and 387,976 ayurvedic doctors. Looking at the same criteria in Uttarakhand, the presence of 1060 allopathic government doctors and 1698 ayurvedic doctors is noted (176-177).

A study by Roy (2015), presents similar results, stating that at present, there are more practitioners of AYUSH (about 7 lakhs), than of Allopathy (about 6.5 lakh) in India (1). Moreover, Roy explains that if only the allopathic doctors were considered, the doctor patient ratio in India would be 1:1700. However, upon adding the AYUSH practitioners, the total number jumps to 1,315,000 doctors, forming a doctor to patient ratio of 1:800. This ratio represents the value of AYUSH practitioners in India and the deficit of health care that would result in their absence. As a whole, these statistics reveal that the current numbers of ayurvedic doctors exceed those of allopathic doctors. While a more detailed examination of the prevalence of these two systems exceeds the scope of this study, these figures serve the purpose of demonstrating how predominant Ayurveda is, despite being decried by some a less valid and efficacious system.

On the other hand, the Rural Health Statistics of 2012 illustrate the numbers of public health centers (PHC) functioning throughout all of India and Uttarakhand as well as the number of those, which include AYUSH units. In India, there are 24,049 total PHC units; however, only 11,729 of them include AYUSH units. Likewise, in Uttarakhand there are 257 PHC units but only 44 have AYUSH units (47, 61). Ultimately, these figures demonstrate that while the numbers of ayurvedic physicians may be high, their presence alongside the allopathic physicians remains infrequent.
The lack of allopathic physicians in India is becoming a growing concern, particularly in light of the increasing prevalence of chronic illness. Attempting to resolve this issue, the Indian government has encouraged and promoted the use of AYUSH in the public health system. Relating to this, the 2014 National AYUSH Mission report by the government describes a vision of providing “cost effective and equitable AYUSH health care throughout the country by improving access to the [AYUSH] services.” Additionally, the report aims to “revitalize and strengthen the AYUSH systems making them as prominent medical streams in addressing the health care of the society.” Other objectives involve improving the educational AYUSH institutions and “promoting the adoption of quality standards of AYUSH drugs and making available the sustained supply of AYUSH raw-materials” (19-20).

Despite the governmental support and recognition of AYUSH, there is still a lack of understanding and awareness about AYUSH among practitioners of allopathic medicine. Moreover, even after having co-existed for many years, practitioners of Allopathy are still ignorant about the principles and capabilities of AYUSH. The lack of knowledge among the physicians about the other systems is a result of their being taught in different medical schools and following distinctive curriculums. The Indian government has also addressed this matter. According to the Annual Report to the People on Health 2011,

There is a need to institutionalize courses in various medical systems for practitioners belonging to other systems, e.g., we could consider courses for training in basic allopathic care for AYUSH practitioners who desire to acquire these skills. Similarly there could be courses for basic care in specific systems like ayurveda and homeopathy for desiring allopathic practitioners (Annual Report to the People on Health 2011:44).

And yet, there are still very few medical colleges that incorporate integrated courses, exposing their medical students to AYUSH. Furthermore, studies reveal that physicians are prescribing from the other systems of medicine, despite a lack of knowledge about them (Roy 2015). To date, there is much confusion regarding the legality of such practice. Ideally, doctors should not be prescribing medicines from a system that they are not trained in and engaging in such practice can cause harm to the patient, as the physicians may not be aware of the effects of the medications they are prescribing.

However, due to the shortage of allopathic practitioners in the rural areas, legal changes have been made regarding “cross-pathy” practice. According to the privileges in the Drugs & Cosmetics Act and Rules of 1940 and 1945, certain states in India have the right to allow the Bachelor of Ayurvedic Medicine and Surgery (B.A.M.S.) doctors to use modern medicine in their ayurvedic practice. Moreover, several state governments are allowing practitioners of AYUSH to
prescribe allopathic medicines, including the Maharashtra state and a few others. According to a study by Roy, “the Maharashtra Government has amended the Maharashtra Medical Practitioners Act to regularize a gazette notification of 1992 that allowed Ayurveda practitioners to prescribe allopathic medicines” (Roy 2015:2). Although cross-pathy practice is not yet legal in all states, the regulations, which prohibit ayurvedic practitioners from using allopathic medication, remain light, given the overwhelming need for more health providers in rural areas.

Despite the intended purpose of these regulations, they are currently being resisted and taken to court in states where the Government permits this. Members of the Indian Medical Association (IMA) are claiming such practice to be unethical and comparable to quackery. On the other hand, the traditional medicine practitioners are viewing these policies as a progressive step towards integrated medicine, especially given the desperate need of more health care professionals in the rural areas.

Amid the upheaval and conflict regarding this issue, what remains clear is that physicians of both Allopathy and AYUSH are needed to take care of the health problems in India (Roy 2015). Instead of fighting to stop the cross-pathy practices, the emphasis should be given to improving the education and training of physicians regarding the other systems of medicine so that they are more capable of providing a treatment that is not only accessible but also beneficial and safe.

V. Scholarly Significance

The discipline of medical anthropology, which incorporates social, cultural, biological, and linguistic anthropology, will be used in this study to better understand the cultural significance and importance of pluralistic medical systems as well as the factors which influence the prevention and treatment of diabetes mellitus. Additionally, this study will draw on the interpretivist and critical medical anthropology theoretical approaches as a guide to its methodology. Furthermore, the findings of this study are applicable to Asian studies about India, interdisciplinary studies of complementary and integrative medicine, biomedical clinical literature, ayurvedic clinical literature, and the global literature, such as epidemiological studies about diabetes mellitus.

The formation of medical practitioners in India today is in a constant state of evolution. The ways in which they are trained, the beliefs that they form, and the opinions they develop on varying forms of medical approaches are all fundamental to understanding how medical integration occurs and the challenges it faces. As Maxwell (2013) states, a study must consider the theories and perspectives of those studied, rather than relying entirely on founded theoretical views or the researcher’s perspective” (Maxwell 2013). For this reason, this study will focus on how varying physician perceptions towards medical integration play
a role in either supporting or hindering the progress of ayurvedic and biomedical integration. The perspectives of such physicians and the meanings gathered from them will be used in conjunction to the interpretivist and critical medical anthropology approaches in directing the development and focus of this study.

The interpretivist stance, which sees the world as “constructed, interpreted, and experienced by people in their interactions with each other and with wider social systems,” will guide the experience of analyzing how different physicians may vary in their opinions and practices of integration (Tuli 2010:100). Critical medical anthropology (CMA), on the other hand, addresses the disparities in the quality of health care in the presence of social inequality. Strongly shaped by medical anthropologist, Merrill Singer, this approach is also a theoretical lens that inspires action and engagement in an issue. While supporting the theory of integration playing a role in decreasing the discrepancy of health care for the marginalized population in India, critical medical anthropology upholds the importance of seeking new systems of health care to spark a meaningful social change (Singer 1995).

VI. Research Questions

The three main research questions of this study were:

1. How do ayurvedic physicians and allopathic physicians compare in their philosophies underlying the treatment of DM2?

2. How do ayurvedic physicians and allopathic physicians compare in their perceptions of Ayurveda and Allopathy?

3. How do ayurvedic physicians and allopathic physicians compare in their integrated practices as well as their views of the value of integration?

VII. Argument

Allopathic and ayurvedic physicians have many differences in their descriptions, classifications, and treatments of DM2, as well as a few similarities especially in the former two.

Overall, the biomedical and ayurvedic descriptions of DM2 have many differences, such as issues occurring at a cellular level versus from dosha imbalance, but also some similarities, such as the diabetes involving high blood sugar. The descriptions are distinct in that the biomedical explanation focuses on the body’s impaired ability to move sugar into body cells, causing high blood sugar. On the other hand, the ayurvedic explanation describes diabetes through dosha imbalance, which also causes high blood sugar. Moreover, although numerous and complex, classifications of diabetes in Ayurveda share several commonalities with those of Allopathy. Both systems categorize diabetes as
being either congenital or acquired and mention similar genetic and nongenetic factors. Additionally, while there is some overlap in the treatment methods, such as lifestyle and diet modifications, great variation in physician treatment of DM2 was described. While the biomedical physicians emphasize the use of oral hypoglycemic drugs and insulin, the ayurvedic practitioners describe their use of non-medicinal therapies, such as panchakarma, yoga and meditation, in addition to herbal ayurvedic medications in their treatment of DM2.

Aside from dually-trained Dr. Deepak Joshi, who has an equal knowledge of both systems, the ayurvedic and allopathic physicians of this study are well-matched in their knowledge of the strengths and benefits of the other pathy as well as in their ignorance, as they still know more about their own pathy. The common and different perceptions that allopathic and ayurvedic physicians have about Ayurveda and Allopathy reveal the strengths and weaknesses of both systems. The knowledge that all three types of physicians have about the other system either prompts or discourages their ability and desire to integrate. The weaknesses of Ayurveda, such as its lack of validity and lengthy treatment effect, explain the reluctance of the allopathic physicians to use ayurvedic practices or medications, whereas the strengths of Allopathy, such as its scientific authentication and quick treatment effect, explain the readiness of ayurvedic physicians to resort to allopathic remedies.

In conclusion, ayurvedic and allopathic physicians share both positive and negative views about integration. Broadly, compared to the allopathic physicians, the ayurvedic physicians and dually-trained Dr. Deepak Joshi are more optimistic in their comments about integration. Moreover, although not all interviewed physicians support integration, many of them list particular circumstances in which integrated practice should occur, including the treatment of mild diabetes or emergency situations. The integrative practices of the physicians in this study are categorized as structured and unstructured forms of integration. The structured forms include the consistent, pre-meditated, and legally approved integrated treatment of Dr. Deepak Joshi as well as certain types of institution-based integration, represented by integrated courses in colleges or AYUSH units in allopathic hospitals. The unstructured forms include the inconsistent, unplanned, and unregulated integrative practices occurring on the part of the other ayurvedic and allopathic physicians in this study as well as their patients.

VIII. Methods

The bulk of the research for this study was completed during a semester study abroad program with the School of International Training (SIT) in northern India. The program was based in New Delhi and explored the links between public health and human rights, with a focus on women, children, tribal, and other marginalized and vulnerable populations in India. Although based in New Delhi, the program included several field excursions where rural and tribal communities, NGO headquarters, academic and research institutes, and hospitals in urban and
rural sites across northern India were visited. Excursion destinations included Bahraich, Udaipur, Palampur, and Dharamsala. Not only did these excursions provide opportunities to interact with community leaders and victims of health inequalities, but also they allowed preliminary research and data collection to occur.

The fieldwork for this study took place in the cities of Dehradun, Rishikesh, and Palampur, all of which are located in the northern state of Uttarakhand, India. A total of four months was spent in northern India. During the first three months, I lived with a host-family in New Delhi and took public health and Hindi courses through my program. Local Review Board (LRB) approval was acquired and preliminary research was also started at this time. The final month was spent in Dehradun, where I lived in an apartment and began the field research for this study. The majority of the data collection took place in Dehradun, the capital of Uttarakhand. According to a survey assessing the risk factors of non-communicable diseases in Uttarakhand, physical inactivity was the leading cause of diabetes. When compared to those living in rural or combined settings, the majority of respondents living in an urban setting, such as Dehradun, were stated as being overweight (Ministry of Health & Welfare 2007-08). In addition to being an urban setting where the risk factors for diabetes are present, Dehradun also had a rich mix of both allopathic and ayurvedic doctors. Rishikesh was the city where the one dually-trained physician of my study resided. Two interviews were conducted there. Finally, the Kayakalp Himalayan Research Institute for Yoga & Naturopathy, where the ayurvedic treatments for diabetic patients were described and an ayurvedic practitioner was interviewed, was located in Palampur.

Interviews

According to Bernard (2011), semi-structured interviews work “very well in projects where [one] is dealing with elite members of a community” (Bernard 2011:73-74). Correspondingly, semi-structured interviews were conducted with ayurvedic and allopathic practitioners, including one dually skilled allopathic practitioner. A total of 11 interviews were conducted, five with ayurvedic practitioners and six with allopathic practitioners (see appendices). These doctors were referred to the researcher through Dr. Rajat, who served as the advisor for this project. A translator was not necessary as all of the doctors spoke English. I established rapport with the doctors before beginning the interview, explaining the topic to them and providing them with the questions on a printed piece of paper. Respondents were asked permission to be recorded using a digital recording device and a notebook was kept out to jot down notes. Interviews lasted around 45-60 minutes each.

The interviews conducted had prepared questions (see appendices) but depending on the subject and where the conversation led, follow-up questions

---

were also asked. This semi-structured process of interviewing was an approach to garner a substantial amount of information from respondents while also allowing free dialogue to occur. Few closed-ended questions were asked as the questions mainly revolved around the doctors explaining their treatment methods and perceptions of such treatments. More specifically, interview questions focused on the informant’s knowledge, attitude, and practices of Ayurveda and biomedicine, and the integration of the two (if applicable). Those physicians who did not practice integrative methods or were not dually trained, but who were knowledgeable and willing to speak about the two systems, were asked questions that focused on their medical education, their knowledge of integration, and their perception of its value in treating chronic illness such as diabetes mellitus, and of its value in providing more accessible and affordable health care. On the other hand, the dually-trained physician or the ayurvedic and allopathic physicians who employed integrative methods, were asked questions that included those above as well as a more detailed explanation of the integrative methods used in DM2, including the reasoning and values supporting them.

**Data Analysis**

Interviews were transcribed, coded, categorized, and analyzed on an ongoing basis to formulate further questions, the emergence of themes, and as an eventual source for organizing patterns of response across categories and individuals.

Field notes were also taken during interviews and served as a basis for discussion, coding, and categorizing, reflection, and member checking. As stated by Jones (2010), “field notes are the heart of ethnographic research and therefore analysis” (159). In taking the field notes, I consciously updated them and made them as detailed as possible, which served to facilitate the coding process. In coding the data I used thematic analysis, which involved “drawing out key themes from the data and then theoretically framing them” (Jones 2010:160-163). A data matrix was also used to organize the data and develop appropriate coding mechanisms. While coding, Jones (2010) reminds us to “not forget the theory”… “Themes are not themselves fully analyzed unless linked to wider literature and theory,” she states (160-163). Therefore, the data were coded in accordance with the interpretivist, schema, and critical medical anthropology theories.

The interpretivist approach is used by many medical anthropologists to understand how different perspectives are created. Clifford Geertz (1973) wholly supports this approach, stating that it “views researchers as ‘cultural interpreters’ who provide vivid descriptions that unpack values, beliefs, and action in a group, society, or organization” (Tracy 2013:50). The data were coded in such a manner that, in accordance with this theory, provided an explanation for how different forms of integration occur. The data acquired in the interviews were categorized based on the forms of integration that occur, as well as the ones that do not and
whether purely ayurvedic or biomedical approaches were described in the medical treatment of DM2.

The schema theory also played a vital role in coding the data of this study. According to cognitive anthropologist Claudia Strauss (1997), “schemas, as we think of them, are not distinct things but rather collections of elements that work together to process information at a given time” (42). The schema theory further explains that discourse about categories must be read in the context of overall schematic impressions of the whole or packets of social knowledge about an aspect of social life, which often involve narrative claims about the value, and relationship of various things. The schemas used in my thesis describe the theories of integrative, complementary, and alternative practice and the moments in which they tend to morph together.

Lastly, critical medical anthropology was used in interpreting the varying responses gathered from the allopathic, ayurvedic, and dually-trained physician. Using this theory, the data gathered from interviews were categorized in terms of how differing physicians perceived the relative benefits of medical integration. This theory was also used to analyze the power plays between Ayurveda and Allopathy.

**Ethical Precautions**

Precautions to protect the rights and well being of the participants in this study in accordance with the guidelines set by the American Anthropological Association (AAA), the International Review Board (IRB), and the Local Review Board (LRB) in India, have been taken. This study was approved by the IRB in the fall of 2013 and by the LRB in the spring of 2014, before the research began.

Furthermore, I have assured the anonymity of the informants by coding their names and identities in all notes and records, as well as throughout the written study. In addition, documents and computer files were kept under locked security throughout all stages of research.

To protect the anonymity of the physicians, all of the names of the physicians in this study have been changed except for one physician, Dr. Deepak Joshi, who gave his permission to have his identity disclosed. For the purpose of reminding the reader which system each physician comes from, their titles have been labeled throughout the study. Following their pseudonym name, the titles “ayurvedic, allopathic, or dual” are listed in parenthesis each time the physicians are mentioned, excepting moments where the title of the physician is evident.

**IX. Original Contribution**

This study serves to contribute information about how DM2 is currently treated by ayurvedic and allopathic physicians in addition to how integration
occurs in parts of Uttarakhand, specifically within the capital of Dehradun and neighboring city of Rishikesh. More specifically, this study would enrich the scholarly literature on the following topics: (1) the similarities and differences of ayurvedic and allopathic DM2 treatment; (2) the perceptions of ayurvedic and allopathic physicians about each other; (3) the perceptions of ayurvedic and allopathic physicians on the occurrence and value of integration in the treatment of DM2; and (4) how the integrated practices of a dually-trained physician compare to those of ayurvedic and allopathic physicians.

Moreover, the concentration of this study on DM2 supplements other studies on this chronic illness and furthers the understanding of how it is being treated and whether and how integrative measures could be helpful.
Chapter 2: Allopathic & Ayurvedic Representations of Type II Diabetes Mellitus

I. Introduction

To understand how ayurvedic and allopathic treatment practices of DM2 compare with each other, one must have a basic knowledge of how diabetes is described and classified in each system. In the interviews of this study, the physicians describe the allopathic and ayurvedic descriptions and classifications of DM2. Regarding the research question of how ayurvedic and biomedical physicians compare in their philosophies underlying the treatment of DM2, the treatment protocols of DM2 are explained by the ayurvedic physicians, allopathic physicians, and dually-trained Dr. Deepak Joshi. Additionally, to provide a more complete picture, I have reinforced this information with the scholarly sources that also classify and describe DM2 treatments in accordance to each system.

II. Allopathic Description, Classification, & Treatment

Allopathic Description

Diabetes mellitus is a chronic disease in which there is a high level of sugar in the blood. Insulin, a key player in this disease, is a hormone produced by the pancreas to control blood sugar. To understand diabetes, one must understand how food is broken down by the body and used for energy.

When food is digested, a sugar called glucose enters the bloodstream. Glucose is the main source of fuel for the body. The pancreas is responsible for making the insulin that moves the glucose from the bloodstream into muscle, fat and liver cells, to be used as fuel. Insulin release can be stimulated by both the intake of foods high in sugar as well as a fatty diet. Diabetics have high blood sugar because their bodies are incapable of moving sugar into body cells, the liver, and muscle cells to use for energy. Reasons for this are because either their cells do not respond to insulin normally, their pancreas does not make enough insulin, or both (ADA 2009). The causes of diabetes revolve around there being too little insulin or the state of peripheral insulin resistance. In peripheral insulin resistance, even if the insulin levels are normal, the target tissues are unable to send glucose into the cells.

Allopathic Classification

According to the American Diabetes Association classification system, diabetes mellitus is classified in the following four categories: 1. Type I diabetes mellitus (DM1), 2. Type II diabetes mellitus (DM2), 3. Other specific types of diabetes mellitus, and 4. Gestational diabetes mellitus. Among these, DM1 and
DM2 are most prevalent. Briefly explained, DM1 results from congenital β-cell destruction, which leads to a virtually total loss of insulin secretion and absolute insulin deficiency (Harris 2004). This insulin deficiency prevents the cells from absorbing glucose, leading to high levels of glucose in the blood. Most DM1 diabetics are diagnosed at birth and experience an abrupt onset of severe symptoms, are prone to ketosis, and depend on life-long insulin injection to survive.

DM2, which is the focus of this study, is defined by the American Diabetes Association as being caused by a combination of genetic and nongenetic factors that result in insulin resistance and insulin deficiency. Although the exact reasons remain unclear, studies have shown that Asian Indians have a genetic predisposition for developing diabetes compared to other ethnic groups (Mohan 2013). Moreover, unlike western standards, diabetics in India are typically underweight, leading to a form of diabetes that resembles the characteristic of DM1 but is actually DM2, as the diabetes is acquired later in life. This type of diabetes is usually a result of malnourishment, which is common in the rural areas of India. During our interview, Dr. Bhargav (allopathic) commented on this, explaining that many DM2 patients in India are neither obese nor live sedentary lifestyles, as commonly seen in the obese DM2 western patients. Dr. Bhargav further stated that we must understand the diabetes “in a population that is not obese, that is not affluent, and is engaged in a significant amount of manual activity.” In saying these things, Dr. Bhargav emphasizes the importance of understanding the disease within the cultural context of India. However, although currently less prevalent, the numbers of obese DM2 patients in India are rising. The major nongenetic factors associated to the obese DM2 patients are stress, high caloric intake, and sedentary lifestyle (Harris 2004).

Lastly, DM2 can go unrecognized for years because of a lack of symptoms. Usually, the long-term defects in insulin secretion leading to a state of hyperglycemia are what lead to its clinical diagnosis. Unlike DM1 patients, DM2 diabetics are not dependent upon insulin use nor are they prone to ketosis. However, they may require insulin if the use of diet or oral agents does not correct their blood sugar levels. Additionally, ketosis may develop in certain circumstances such as severe stress precipitated by infections or trauma. Although defined as having a strong genetic basis, a variety of lifestyle and environmental factors have also been recognized as pertinent risk factors for this condition.

Allopathic Treatment

An evaluation of the collected data from the allopathic doctors that I interviewed revealed the majority to be treating DM2 through the use of various oral hypoglycemic drugs, insulin, and lifestyle and diet modifications. All doctors agreed that the causes of diabetes were multi-focal and revolved around the
themes of hereditary, lifestyle, diet, and environmental causes, such as mental stress.

According to Dr. Ghanchi, the types of allopathic treatments being used depend on “the patient profile, the coexisting disorders that exist, how the patient takes the treatment, and how compliant they are to it.” In describing the treatment of DM2 cardiac patients, Cardiologist Dr. Jiany stated to use oral hypoglycemic drugs initially. If these did not work, and the diabetes was still not controlled, then he would use stronger oral drugs. Ultimately, if these were also ineffective, insulin would be used. He further explained that in many of these patients, the diabetes had been uncontrolled for eight to twelve years, resulting in the development of coronary arteriosclerosis. This exemplifies the multi-organ nature of diabetes, as it is a prominent risk factor for coronary heart disease (Simons 1998).

Dr. Ghanchi further indicated that while most of his patients were on oral medicines, 20-25% were using insulin. Regarding the side effects of insulin, he only commented on the tendency of patients to put on some weight. A study regarding the potentially negative consequences of insulin use supports this finding, adding that in addition to weight gain, hypoglycemia and the possible increased risk of specific cancers were also side effects of insulin use (Lebovitz 2011). Dr. Singh specified several conditions when insulin was absolutely necessary. The first, being in all DM1 patients, and the second, in DM2 patients who were either pregnant, had an infection, were undergoing surgery, or had ketoacidosis. These findings are comparable to other diabetic studies, where the optimal treatment method is presented as including the use of insulin with or without oral agents (Gupta 2011).

Although not explicitly stated in their initial responses, all doctors agreed that lifestyle and dietary changes were a fundamental part of the type 2 diabetic treatments. Dr. Jiany explained that diabetics should avoid a high carbohydrate diet, emphasizing the elimination of potatoes, sugar, and rice. “Generally”, he explained, “Indian patients consume these foods more. If they stop eating these things, then the diabetes can be controlled.” He further noted that exercise is also helpful in decreasing the sugar level. Upon being asked why some patients were not improving, Dr. Ghanchi stated that most of his patients had not changed their lifestyle habits or diets, thus hindering the effectiveness of the medicine. On a similar note, Dr. Singh explained that the pre-diabetic patients he saw usually ended up getting diabetes due to their inability to follow the strict guidelines of diet and regular exercise. Dr. Ghanchi, among other doctors, professed that very few pre-diabetic patients were being diagnosed and rather it was mostly patients with “full-blown diabetes.” Regarding the effectiveness of allopathic treatment, Dr. Singh affirmed that some of his patients, although not many, had been able to control their blood sugar and discontinue the use of allopathic medicine after a few years of treatment.
III. Ayurvedic Description, Classification, & Treatment

Ayurvedic Description

Ayurveda is asserted to contain the foremost solid and written information regarding diabetes from the start of human civilization (D. Joshi 2005:98). Sushruta, a 600 B.C. ayurvedic physician, discussed ways of preventing and treating diabetes, advocating the importance of exercise. A description of diabetes was also found in the 5,000 year old ancient texts of the Vedas, in which the sweetness in the urine of a diabetic patient was discussed.

While the pathies may find common ground in their scientific understandings of diabetes, such as high blood glucose levels or the deregulation of insulin use, the ayurvedic description of diabetes diverges largely from biomedicine with its emphasis on dosha imbalance. Furthermore, in explaining these differences, it is also important to note that it is from such distinctions that a greater understanding of both systems can be achieved and correlations can be construed.

According to Ayurveda, diabetes mellitus is termed as madhumeha and pre-diabetes is defined as prameha. The classifications, descriptions, and treatment plans for prameha are as detailed and exhaustive as they are for madhumeha, if not more. This is because Ayurveda believes that if prameha is timely treated, diabetes mellitus can be avoided entirely (D. Joshi 2005: xxi-xiii). While this study focuses on the full-fledged DM2, it is important to understand Ayurveda’s elaborate and vast description of pre-diabetes, which ultimately leads to diabetes mellitus.

Prameha is manifested in an individual who has not yet developed full-fledged diabetes but is suffering from prodromal symptoms of diabetes. Whereas pre-diabetes is not seen as a disease in Allopathy, in Ayurveda prameha is viewed as a disease where all three doshas (vata, pitta, and kapha) become imbalanced. In other words, there is a different threshold or cutoff patient in Ayurveda as opposed to biomedicine. This change in the doshas is described as initially beginning with an excess of the kapha dosha. The surplus of this dosha results in kaphaja prameha, or prameha with a predominance of kapha. Such deregulation then leads to a loss of the kapha dosha, resulting in a predominance of the pitta dosha leading in turn to pittaja prameha. Further progression reduces the pitta dosha, causing overstimulation of the vata dosha or vataja prameha. These types of prameha can be caused by either genetic factors or unhealthy lifestyle behaviors (Sharma 2011).

Madhumeha is also described as vataja prameha, or the prameha with vata dosha predominance (Sharma 2011). In the ancient ayurvedic texts of Charaka Samhita, a very detailed pathogenesis for madhumeha, or vataja prameha, is given. It is stated that an excessive consumption of food can impair
the *kapha* and *pitta doshas*, thereby corrupting adipose and muscle tissue, leading to impairment of the *vata dosha*. Resulting, the disturbed *vata dosha* causes the *agni*, or “digestive fire” of the body, to be expelled in the urine. According to ayurvedic belief, the *agni* is considered vital to the maintenance of health and its loss leads to conditions comparable to non-insulin dependent DM2 progressing into insulin-dependent DM2 (Sharma 2011).

*Ayurvedic Classification*

*Prameha* (pre-diabetes) is classified into 20 different types of urinary disorders, each resulting from the interactions of the three *doshas* and 10 *dushyas*. These 20 types are grouped according to the *dosha* that predominates. The *kapha dosha* has 10 types, the *pitta dosha* has six types, and the *vata dosha* has four types of *prameha*. A detailed description of each different type of *prameha* is beyond the scope of this study, however it is necessary to note that these 20 different types can be generalized as all being due to the same causes: wrong lifestyle and eating habits, unhealthy mental thinking, and heredity factors in regards to its inheritance (See Appendix D, Table 1).

Furthermore, all 20 types of *prameha* may fit into either of the following two categories: (1) Congenital (*sahaja*) *prameha*, where it is inherited from parents and is incurable, or (2) Acquired (*apathyaniiriti*) *prameha*, where it is due to faulty eating habits and lifestyle and is fully curable, if timely treated (D. Joshi 2005:98-99).

Another classification of *prameha* explains the different body constitutions of pre-diabetic and diabetic patients. Although these body constitutions are also mentioned by allopathic practitioners in describing diabetic patients, they are less formally used in classifying the diabetes. Dr. Sarvaiya (ayurvedic) and Dr. Deepak Joshi (*dual*) both labeled the two types of patients that exist in Ayurveda as thin and lean or obese. The treatment for these patients, especially a treatment called Panchakarma therapy, vastly differs and must be correlated with these body types. Dr. Sarvaiya (ayurvedic) included that in “fatty patients”, the *kapha dosha* predominates and therefore the disease is easier to cure. Furthermore, patients with a predominant *pitta* or *vata dosha* are more difficult to cure but their disease can be controlled with medicine. The *vata dosha*, Dr. Sarvaiya (ayurvedic) included, can be correlated to the insulin dependent patient described in modern medicine. *Charaka Samhita*, one of Ayurveda’s classical texts, supports these findings. According to this text, a patient of *apathyaniiriti* (*related to disordered eating*) *prameha* is called an obese *pramehi*, whereas a person of *sahaja* (congenital or hereditary disorder) *prameha* is called lean and weak *pramehi*. These *pramehis*, if not treated, will turn into obese (type II) and asthenic (type I) diabetics respectively. Recently, a third category of diabetic patients has also been recognized and named as *apathyajanya madhumeha* (lean type II diabetes) (D. Joshi 2005:98-99). This category represents the diabetic patients that have weak and lean body constitutions and have acquired the diabetes later in their life.
Lastly, in madhumeha, a classification that depicts the ultimate result of diabetic treatment is known as sadhya, asadhya, and yaapya diabetes. Sadhya diabetics are curable and rely on medicines, asadhya diabetics are incurable, and lastly yaapya diabetics are those who have to take medicines lifelong (See Appendix D, Table 2)

Ayurvedic Treatment

Ayurvedic treatments for DM2 are diverse and bountiful. This is not only due to the highly individualistic nature of Ayurveda but the simple fact that diabetes is not a disease but a syndrome of diseases. Many signs and symptoms are involved. To be successful, the treatment must take into consideration all of the parts of the body that are affected.

A general assessment of the treatments used by varying ayurvedic practitioners revealed lifestyle and diet changes, meditation and yoga, sanshodhana (a purification treatment involving panchakarma therapy), sanshaman (use of medicines), and snehan (oilation) therapies, as well as the use of other ayurvedic medicinal treatments to be most prevalent. The causes of type 2 diabetes listed by the ayurvedic practitioners included: lethargy or laziness, poor eating diets such as the consumption of too many fatty, sugary, high caloric foods, lack of exercise, a sedentary lifestyle, and digestive problems.

Upon describing his ayurvedic treatment, Dr. Narula stressed the view of a priority basis, with medicine being last on his list. He explained that when he sees patients with borderline symptoms of diabetes mellitus, instead of giving them medicine, he advises them to change their lifestyle and dietary habits, as well as do more exercise and yoga. “In some patients, after 2-3 months,” he says, “they will return to see me and their blood sugar will be normal.” Such methods of modifying one’s lifestyle and dietary habits were witnessed at the Kayakalp Himalayan Research Institute for Yoga & Naturopathy, situated in the Dhauladhar range of the Himalayas. At this center, patients suffering from chronic illness or wishing to simply maintain their health would consult with doctors prior to admission and then be given specific treatment plans based on their individual constitutions and health issues. Once being admitted, patients were required to follow a daily schedule, which initiated the gradual change in some of their lifestyle and dietary habits. Dinancharya is the section of Ayurveda that addresses daily routine. Given that the three pillars of health are diet and digestion, elimination, and sleep, one’s daily routine can have a profound effect in these areas. It is also stated that different doshas are predominant during different hours of the day and night. For these reasons, lunch at Kayakalp was served at noon and contained the heaviest food, since pitta is predominant at this time and digestion is strongest. Dinner, on the other hand, was served at 6pm and was very light. Similarly, patients were requested to go to bed by 10pm, since kapha, which is associated with qualities of heaviness, is predominant at
this time. Lastly, patients were awakened around 5am for morning yoga. Again, \textit{vata} is predominant at this time and is associated with movement and lightness, so arising at this hour facilitates feeling energetic and refreshed.

According to Ayurveda, diet is one of the core pillars of health (Sharma 2007). Kayakalp was very effective in altering the dietary habits of patients, especially those suffering from chronic illness. Every patient was served a different meal, with the food set in accordance to his or her individual psychophysiological constitutions. This method of controlling the patient’s diet for a given period of time is very beneficial in exploring the impact a dietary change may have in treating a chronic illness. Both modern medicine and ayurveda agree that a diabetic should eat like a normal person, with only the quantity and time at which the food is eaten being fixed and regularized. Additionally, smaller split meals should be taken (D. Joshi 2005). Also, like a normal person but even more so, a diabetic should avoid eating “severe \textit{vata, pitta or kapha} causing food items (foods which increase only one type of humour in the human body).” Although precise foods that diabetic patients should be consuming were not discussed in any of the interviews, it was said that the intake of fatty, sugary and high-caloric foods should be removed and replaced with a balanced, nutritious diet. Dr. Deepak Joshi stated that a hypo-caloric diet as well as non-nutritious food may both cause decreased production of insulin in the body. Furthermore, he stated that the insulin secretion of patients that had switched over to balanced nutritious diets increased by about 25-50%.

Similarly to exercise, other practices such as meditation and yoga prove to be extremely beneficial in treating type 2 diabetes. One type of meditation technique that was witnessed at Kayakalp is called \textit{pranayama}, a form of breathing exercise, which helps relieve the mind as well as the body from stress. Ayurveda believes the ultimate basis of disease to be one’s detachment from the inner core of one’s own being. Meditation provides the mechanism by which one can rediscover their inner being—reconnecting them to a unified field of pure mindfulness (Sharma 2007).

In their discussion of ayurvedic treatment, all doctors mentioned \textit{sanshodhan} and \textit{sanshaman} therapies as being highly used. Dr. Sarvaiya and Dr. Narula both defined \textit{sanshodhana} therapy as a purification treatment in which the \textit{doshas-causing} imbalance is removed. “These imbalanced \textit{doshas} are responsible for causing all types of diseases”, explained Dr. Narula. For example, he listed \textit{vata} as responsible for arthritis and pains, \textit{pitta} as responsible for skin and blood related diseases, and \textit{kapha} as responsible for lung diseases. All practitioners stressed that in order to properly treat diabetes, the \textit{doshas} needed to be balanced and \textit{dhatus} needed to be purified. Dr. Deepak Joshi expanded on this, explaining that there are certain herbs and medicines, which can normalize each of the \textit{doshas}. However, the \textit{dhatus} must first be treated using \textit{panchakarma}. \textit{Panchakarma} serves to purify the body by opening the body channels and ridding the tissues of toxins, thereby preventing the onset of
Dr. Sarvaiya listed several techniques within panchakarma that are used to eliminate the increased doshas. These include the act of vomiting, which is mainly used to expel kapha, the use of laxatives, used to expel pitta, and enemas, used to expel vata. Dr. Deepak Joshi believes that after panchakarma treatment, the herbs and medicines will work better. However, in order for panchakarma to be beneficial, the patient must have the strength to withstand it. According to a patient’s strong or weak constitution, the panchakarma, as well as any other therapy, will be adjusted to the patient, ensuring that no harm is done. Sanshaman therapy is used to suppress the imbalanced doshas through the use of medicines. The medicines used are dependent on the individual constitution of the patient. Dr. Deepak Joshi also defines sanshaman treatments as “those medicines or treatments, which do not take out the abnormal humours but bring them the doshas into equilibrium”. Shaman herbs as well as shaman acts are also beneficial in this (D. Joshi 2005).

Dr. Sarvaiya further describes the process of snehan, or ‘oilation therapy’ as an important part of ayurvedic treatment. Snehan is defined as the processes by which the body tissues become optimally oily and smooth (D. Joshi 2005). In other words, the purpose of snehan is to lubricate the channels of the body in which there are obstructions causing imbalance. The two methods of lubrication that Dr. Sarvaiya describes are internal lubrication, in which the capillaries and veins are lubricated, and external lubrication, occurring via massages with medicated oils. Other procedures of snehan include the drinking of fat, taking of food items containing ghee or oil, taking vasti or enema consisting of oily fluids, anointing and immersion of the body in oils, nasal drops, and lastly ear and eye drops of medicated oils (D. Joshi 2005).

Although listed last, the diverse healing properties of ayurvedic medicines are as abundant in their nature as they are valued. According to the ayurvedic principles, there is no single drug remedy for diabetes. Rather, there are many anti-diabetic drugs that are as capable of effectively reducing blood glucose levels as allopathic drugs through the use of different mechanisms (Sridharan 2010; Shetty 2010). Some of these include: 1. ‘Anti-diabetic alkaloids’, or the final products of the nitrogen metabolism in plants, and ‘Plant insulin-p-insulin’, a growth factor in plants resembling human insulin, 2. The revitalization of the pancreatic Beta cells, 3. Herbo-minerals capable of increasing insulin secretion, 4. Medications, which abolish chronic vata humour, and 5. Herbo-minerals with anti-obesity and lipid abnormality correcting properties that are useful in diabetes. Unlike many allopathic drugs, these herbal anti-diabetics do not have adverse effects on vital body organs such as the pancreas, liver, kidneys and eyes. Likewise, when using these anti-diabetics, there is no fear of fatal hypoglycemia, which is common with most allopathic medicines (D. Joshi 2005; Langford 1995).

Dr. Narula and Dr. Deepak Joshi summarized the purposes of ayurvedic medicines in four categories: 1. Prevention of the full-fledged diabetes in patients suffering with prameha, 2. Normalization of the blood sugar, 3. Rejuvenation of...
the body systems, and 4. Prevention and treatment of the complication of diabetes. In his explanations, Dr. Narula reemphasized the idea that “diabetes is a disease that adversely affects all of the body systems. If the blood sugar is not controlled for a prolonged time, it will weaken the eyes, muscles, nerves, kidneys, etc.” To treat these secondary effects of diabetes, herbal medicines are very effective. In our interview, Dr. Deepak Joshi explained, “several herbs exist, like Gokhura and Kashni that are able to cure the kidney problems commonly seen in diabetic patients.” Dr. Narula explained that the ayurvedic medicines are made up of many types, including herbs, minerals, herbal minerals, and even metals ashes. They also come in many different forms, including single and compound forms. Dr. Deepak Joshi expanded on this, explaining that in regards to herbal medicines, one single herb does not have the power alone to normalize the *doshas*. Rather, at least two to three herbs must be used from multiple classes. Herbs, which are used to treat diabetes, include: “*shilajit*, turmeric, *neem*, *coccinea indica*, *amalaki*, *triphala*, bitter gourd, rose apple, leaves of *Bilva*, cinnamon, *gymnema*, *fenugreek*, bay leaf and aloe vera” (Sridharan 2011:3).

**IV. Discussion**

*Research Findings in Context of Scholarly Literature*

The descriptions, classifications, and treatments by the interviewed allopathic and ayurvedic physicians were largely consistent with published sources on Ayurveda and Allopathy.

Whereas regional variations are a large factor for India across many dimensions of life, there was a lot of consistency for both Ayurveda and Allopathy regarding diabetes. However, this was a mostly urban study, with only one rural doctor being interviewed, so such results are limited. Studies with more rural practitioners may show more variations.

*Ayurvedic and Allopathic Perceptions of DM2*

Ayurvedic and allopathic physicians both agreed and disagreed about certain aspects of DM2. Their varying perceptions on this disease are described here.

Despite the complex and dissimilar ways in which diabetes is described and categorized in ayurvedic texts compared to Allopathy, allopathic and ayurvedic physicians still find common ground in their descriptions of diabetes. For instance, Dr. Rajat (ayurvedic) and Dr. Ghanchi (allopathic) both stated that diabetes was a “multi-organ disease” and consequently should be treated as such. In the same vein, Dr. Narula (ayurvedic) affirmed that diabetes is “not a disease but a syndrome of diseases.” Such statements bring forth the notion that although unmistakably different in their treatment methods, both pathies understand the extent to which diabetes plagues the human body. Additionally,
Dr. Sarvaiya (ayurvedic) explains that in Allopathy, one form of diabetes is a lifestyle disease while the other is a genetic disease. “It is the same for Ayurveda,” she remarks. “In general, if we summarize Ayurveda’s twenty types of diabetes, all of the causes are the same.” Although ayurvedic classifications are far more complex than allopathic ones, Dr. Sarvaiya is able to simplify them, rendering Ayurveda more associable to Allopathy. Dr. Sarvaiya also correlates biomedical and ayurvedic terms in her discussion of Ayurveda. “Kaphas are easy to cure,” she says, “but vatas are very difficult. So we can say vatas are insulin dependent.” By translating these ayurvedic descriptions into biomedical terminology, Dr. Sarvaiya is breaking down the barrier between the two pathies, revealing the harmonies they may share.

Moreover, mutual agreement was also found in the way the practitioners described their diabetic patients. The two broadest and most common physical characteristics were the patient being either obese or lean. The reason behind such a similarity is justified with the majority of diabetic patients in India falling within one of these two categories.

Although different in their diagnosis and characterizations, both systems acknowledge the existence of pre-diabetic patients. Dr. Ghanchi (allopathic) mentions that “most of the time we get full blown diabetes…but when we do get the pre-diabetic symptoms, we prevent diabetes through diet and exercise.” Similarly, Dr. Singh (allopathic) states, “we have many patients who are pre-diabetic and then subsequently get diabetes.” While both doctors admit to seeing pre-diabetic patients, the extent to which they do differs. Dr. Ghanchi emphasizes mostly getting the “full-blown diabetes” whereas Dr. Singh states seeing “many patients who are pre-diabetic.” Moreover, Dr. Shroff (allopathic) claims that pre-diabetic patients don’t come to the hospital nor do they present with pre-diabetic symptoms if they do. Rather, they go to the hospital for other problems such as a cough, diarrhea or loss of weight. These symptoms, although not regarded as pre-diabetic symptoms to Dr. Shroff could present as such to an ayurvedic practitioner, portraying the extent to which the pathies differ from each other.

Given the fact that DM2 is largely a life-style disease, an ayurvedic practitioner might be more attentive to certain details, such as a patient’s diet or levels of stress, than the allopathic doctor in their diagnostic routine. Along similar lines, Dr. Bhaskaran (allopathic) declares that “diabetes is not a disease of many symptom(s).” He further includes that “if you don’t have complications, there aren’t many symptoms of diabetes.” Dr. Narula (ayurvedic) counters this opinion, stating that in a diabetic patient, “many of the signs and symptoms are there.” Although they may have differing perceptions of pre-diabetic symptoms, practitioners agree on the multi-organ nature of diabetes and on the implications of life-style influences.

The diagnosis of a diabetic patient is only the beginning of a long and exhaustive course of treatment, which, as discussed in earlier chapters, differs
immensely between the pathies. While broadly agreeing on certain approaches to diabetic treatment, such as the importance of assessing blood sugar levels, ayurvedic and allopathic doctors differ slightly in the perceived significance of such tasks. For example, unlike most other allopathic doctors, both Dr. Rajat (ayurvedic) and Dr. Deepak Joshi (dual) supported that blood sugar levels should not be the most important clinical symptom upon which treatment is decided. Moreover, Dr. Deepak Joshi (dual) asserted that the real criterion should be how many years the patient has been diabetic, what the precipitated factors of diabetes are, and whether the patient is obese or not. Such varying views exemplify the complexities of integrative practice, which will be discussed in chapter five.

Interestingly enough, the end goal of diabetic treatment also differs slightly amongst doctors of both pathies. As mentioned earlier, Dr. Singh (allopathic) states that “we cannot cure the diabetes. We just control the blood sugar so that the effects or side effects of the diabetes on the various parts are delayed.” In saying this, Dr. Singh is implying that the effects of the diabetes on the body will eventually transpire- that the allopathic treatment is only a temporary solution, meant to delay the progress of the disease rather than stop it completely. Additionally, Dr. Singh asserts that “DM2 is not cured. Cured means when the thing is better and they don’t need medicine”. Dr. Sarvaiya (ayurvedic) on the other hand, holds a different opinion on this matter as she has witnessed the miraculous recovery of her very own patients. As an illustration, she shares the following story of one patient:

*I have one patient, which I have discussed with many people. First he was taking medicine, okay? First he used Allopathy and then he came to me, then he used Ayurveda, but now he is not taking any medicine. He came to me, he’s a retired person, lives nearby, two-three kilometers. He said, ‘Doctor, I am not taking any medicine. I am just walking, but the walking is 10 kilometers. 10 kilometers per day.

Dr. Sarvaiya confirmed that this patient had lost his weight, was no longer taking any medicine, and had a normal blood sugar level. Although an extreme comparison, this example portrays how differently Dr. Singh and Dr. Sarvaiya may perceive the potential treatment outcomes of a diabetic patient as well as the value of the treatment methods themselves. For example, it can be presumed that Dr. Sarvaiya is less likely to prescribe the long-term use of oral hypoglycemic agents compared to Dr. Singh who may see them as the only option.

V. Conclusion

While sharing a few scientific understandings of diabetes, allopathy and ayurveda remained fairly distinct in their descriptions and classifications. The most striking differences between the pathies revolved around Ayurveda and its focus on *dosha* imbalance, its numerous classifications of diabetes— including
those for the pre-diabetic patient—and its use of treatment methods other than medicine to treat the diabetic patient.

Shared perceptions of DM2 among the ayurvedic and allopathic physicians included: DM2 being a multi-organ disease, its genetic and lifestyle causing factors, DM2 patients being categorized as fatty or thin, and the existence of pre-diabetic patients. The perceptions of the physicians also contrasted at certain times. While both acknowledging pre-diabetic patients, disagreements regarding their prevalence and numbers of symptoms were noted. Some of the physicians also had opposing views on whether blood sugar levels should be the most important clinical symptom in deciding treatment. In conclusion, physicians also disputed the notion of whether or not diabetes could be fully cured.

Given the limited number of studies in the scholarly literature that have compared allopathic and ayurvedic treatments and perceptions of DM2, the findings of this study cannot be easily compared to other studies. Accordingly, there is an urge for more research comparing Ayurveda and Allopathy with a focus on diabetes. By using diabetes as a focal point, areas of commonality between the two systems are made more evident. In sharing a common goal, the differences that keep these two systems apart are also what may allow them to be used together in producing a possibly more effective type of treatment.
Chapter 3: Physician Interviewees’ Perceptions of Ayurveda and Allopathy

Knowledge is proud that he has learned so much; Wisdom is humble that he knows no more.

-William Cowper

I. Introduction

Ten minutes or so into our conversation, Dr. Shroff (allopathic) stopped talking and asked if he could draw something instead. Rather than using words to explain the complexities of Ayurveda and Allopathy and how they differ from one another, Dr. Shroff drew me a flower. He attached leaves and roots to the flower, and then wrote the words Ayurveda and modern medicine on opposite sides of the page. Using the flower as his guide, he then explained how Ayurveda and modern medicine have different uses for the flower. Beginning with Ayurveda, he explained,

_They make according to the need. They take a part of the plant and then they make a powder of it. And then they make it as a medicine. But here they say, a plant that builds this flower, who builds these leaves, this plant has a capacity to grow this flower. So, this plant has the capacity to overcome the toxic effect of this flower. So, these other parts (leaves, stem, flower) - when they come in the form of the powder, it comes with active ingredients plus antidotes. Antidotes to combat the side effects which are not in the modern medicine. But the concentration is comparatively less. So, the effect of the medication in Ayurveda is slow but it is long lasting._

Unlike Ayurveda, he expounded that in modern medicine, “they take the pollen from the flower which is effective for a medicinal value. They take out the pollen and make a medicine out of it. So the concentration of it is very high.” I nodded, in awe of the simplicity and delicacy of his explanation.

The concept of how Ayurveda and biomedicine differ from each other is complex; and like all complex ideas, it takes many forms and is perceived in numerous ways. Likewise, the relationship between these two systems can also be described in different ways, such as one that is complementary, alternative, or integrative. The description of the two systems provided by Dr. Shroff can be considered as a complementary description, but it can also be viewed as alternative, where a notion of competition between the two systems is present.

Although Dr. Shroff was the only physician to illustrate his thoughts in the form of a drawing, all doctors shared varying opinions on the ayurvedic and allopathic modes of healing. Similarly to Dr. Shroff, the opinions of other physicians also subtly reflect the complementary, alternative, or integrative traits
of both systems. What remains unclear, however, is whether such knowledge is represented equally on either end. In other words, are both ayurvedic and allopathic practitioners well-matched in their understanding of each other’s practices and methods of healing? In its analysis of physician perception, this chapter provides us with an answer to this question.

II. Similarities and Differences in Perceptions across Practitioner Types

This section describes the common and different perceptions that allopathic and ayurvedic doctors presented in regards to Ayurveda and Allopathy. Based on an analysis of the responses, the shared perceptions have been categorized as portraying either positive or negative impressions of each system.

Ayurveda was praised for its focus on preventative care and treatment of chronic illness, its individualized and holistic treatment, and its medicine having a long-term effect and lack of harmful side effects. On the other hand, physicians of both pathies commented on the slow acting nature of ayurvedic drugs, issues of validity, dearth of research proving efficacy of drugs, lack of protocols in treatment, occurrence of malpractice, high costs and the unequal distribution of ayurvedic medication.

Regarding Allopathy, physicians commended its well-researched and evidence-based methods, its holistic treatment, and its quick effect. Regarding negative attributes of Allopathy, they cited the incomplete treatment of diabetes, which allows the side effects of the disease to continue, the heavy reliance on blood sugar level and lesser emphasis on lifestyle and diet management, the high cost of allopathic medications and their harmful side effects.

Not only do these categories allow the responses to be examined through a finer lens but also from a different angle, one that targets the tensions that exist between these two systems. Such an examination brings us closer to understanding the prominent issues in the co-existence of Ayurveda and biomedicine and how they may affect the integration of the two systems.

Perceptions about Ayurveda

The word “prevent” was frequently used by doctors of both pathies in describing the advantages of Ayurveda. Although critical of Ayurveda for curative purposes, allopathic practitioners of this study did not question the ability of Ayurveda to prevent diabetes. However, nonetheless, allopathic practitioners tended to value Allopathy over Ayurveda, as they valued cure over prevention. Dr. Bhaskaran (allopathic) stated that “the basic ayurvedic approach to life and to health could greatly help prevent diabetes.” Likewise, Dr. Narula (ayurvedic) emphasized that Ayurveda “not only treats the diseases, but also focus[es] on the prevention of the diseases.” He stated that “the first aim of Ayurveda is to maintain the health of a healthy person by giving him some tips about the
hygiene and other things that cure him... and to give him the diet treatment management." “These things,” he concluded, “are based on the prakarī assessment of the person.” This focus on a patient’s prakarī, or their individual constitution, was highlighted by both allopathic and ayurvedic physicians in their discussion of Ayurveda’s holistic and individualized treatment. Dr. Sarvaiya (ayurvedic) stated that the “specialty of Ayurveda [involves] looking at the prakarī, the doshas, and then deciding.” Dr. Rajat (ayurvedic) further portrayed the holistic side of Ayurveda, explaining that in Ayurveda there is a “focus on lifestyle... the treatment does not only involve medicine but physical and mental exercises that are specific to the patient.” Allopathic practitioners shared these perceptions, with Dr. Bhaskaran commenting on the specificity of Ayurveda in regards to the amount of food one should eat, the times they should eat, as well as the importance of daily exercise and a mind-body balance. “All of [these] things are of great value,” he concluded.

These shared perceptions were classified as being positive aspects about ayurvedic medicine. On the other hand, it was found that ayurvedic and allopathic doctors shared negative perceptions regarding ayurvedic treatment methods as well. Dr. Shroff (allopathic) for one, claimed that the ayurvedic exercises were too extensive and that patients “[could not] keep up.” In saying so, he provided the following explanation:

They say you must walk for two hours, but who has two hours time to walk? As I told you, in this country, the economy is very important. That is the thing. The people don’t have the time. They’ll earn the money for the living or they’ll walk. That is why they switch to the allopathic medications.

It is common knowledge that many patients go back and forth between Ayurveda and Allopathy in seeking treatment. However, a common reason for the switch back to Allopathy is the slow acting nature of ayurvedic medications. Returning back to Dr. Shroff’s (allopathic) analogy of a flower, it is understood that the concentration of ingredients used in ayurvedic medicines is considerably lesser due to the plant being used as a whole. This method prevents the medicine from having harmful side effects as the active ingredients are accompanied by their antidotes. Another positive feature of ayurvedic medicine that was mentioned by doctors of both pathies is the long-lasting effect of the medicine. However, because of these beneficial properties, the medicine is much slower to act, creating issues for patients who seek immediate relief. Related to this, Dr. Narula (ayurvedic) described that in emergency situations, the quick treatment needed to save a life could only be found in Allopathy. Moreover, the slow acting nature of ayurvedic medications also causes patients to lose confidence in Ayurveda. As a result, patients may give up prematurely or pay less attention to the lifestyle changes on which a successful ayurvedic treatment depends.

Although not effective in providing acute care, various doctors deemed Ayurveda to be very effective in treating chronic illness. Dr. Narula (ayurvedic)
explained that “Ayurveda is very effective in chronic psychosomatic disorders, like depression, psychosis, insomnia, which are the most common diseases of the modern era.” Dr. Routray (ayurvedic) further outlines this point, professing that “Ayurveda is good for permanent relief and most important for permanent cure.” Dr. Ghanchi (allopathic) made a slightly similar comment, saying that “Ayurveda does well for chronic disease, provided the doctor is well-versed.” Although both doctors agree that Ayurveda serves a positive purpose in treating chronic illness, the second part of Dr. Ghanchi’s statement suggests his doubt in the ability of ayurvedic doctors to be uniformly well versed in their practice of Ayurveda. Such a comment supports the notion held by several allopathic practitioners that Ayurveda is inferior to modern medicine, as its validity is largely determined by the practice of its practitioners. Dr. Narula (ayurvedic) touches on this issue in his discussion of malpractice. As he says,

We are not practicing properly. Physicians, who are trained doctors of this pathy, are not giving proper attention to the ayurvedic medicines. Some medicines are scientifically proved, but we must practice them in the proper dose. We must be wearing certificates of ayurvedic science. We have obtained degrees of ayurvedic science, but in India many ayurvedic doctors are not Ayurveda. They are not properly practicing ayurvedic medicines. They are focusing themselves on allopathic medicines.

Dr. Ghanchi shares this opinion on malpractice, claiming that “more than 80% of the ayurvedic physicians in India are practicing Allopathy.” Upon explaining the consequences of such behavior, he describes that in using allopathic medicines, ayurvedic practitioners are invariably “degrading their knowledge of Ayurveda.” Moreover, many ayurvedic practitioners “do not know the side effects of the allopathic medicine they are giving,” thereby also potentially putting their patients at risk.

Other aspects of the ayurvedic system that contribute to the loss of trust among allopathic physicians and patients were further discussed. Many centered upon the lack of specific protocols and criteria for treatment. In his discussion of this issue as it pertains to the treatment of diabetes, Dr. Rajat (ayurvedic) stated,

If we say the weight, how much weight? In Ayurveda, we will not get. How will we see that it is the diabetes? There is also no specific ratio of weight to height. I can calculate body mass in the modern medicines but in Ayurveda, we do not get that kind of clinical trial or that kind of methodology or diagnosis pattern. Basically, they treat every patient, or diabetic patient, just on symptom or sign. And when we look at the sign through the biochemistry, then it will come to investigation. That process is not in Ayurveda.

Despite being an ayurvedic practitioner himself, Dr. Rajat shares the opinion of many other allopathic practitioners that the ayurvedic method lacks the
structure and consistency of biomedicine. Dr. Bhaskaran (allopathic) complemented the points made by Dr. Rajat, using blood sugar level management as an example. “Ayurveda does not have a very clear sort of thing which would say these are the things which will lower your blood sugar”, he explained. He mentions some of the natural ayurvedic products, such as fenugreek, that have hypoglycemic properties and explains that the issue arises when patients combine biomedical hypoglycemic treatment with ayurvedic medication. Such an integrated treatment can become a problem when the ayurvedic treatment received by the patient is not benchmarked with their blood sugar level. Rather, the criterion for treatment “is just the patients symptomatic and improvement of wellbeing.” Dr. Bhaskaran concludes his argument, stating:

…and when the patient believes they are feeling better, their blood sugar level is 300 and insulin becomes another problem. The proof should be in the blood sugar level and not only other things, like wellbeing.

Although both kinds of doctors speak respectfully about the benefits of ayurvedic treatment, some allopathic practitioners express more reservations about the competency of ayurvedic doctors.

The unequal distribution of ayurvedic medications is another issue within Ayurveda, however, it was only commented on by the ayurvedic physicians of this study. Dr. Sarvaiya (ayurvedic) explained that in some areas of India, some ayurvedic medicines cannot be purchased. “All of the herbs are not in one place,” she says, “especially for diabetes or other chronic illnesses.” Some medicines are only found in the south, and others only in the Himalayas, where they are made. Therefore, the people who are in the rural areas of the Himalayas can only get the medicines that are found and distributed there. Dr. Sarvaiya further explains that, unlike Allopathy, there are very few government dispensaries for ayurvedic medicines. “Their budget (allopathic) is very big and in Ayurveda, it’s less,” she states. She concludes that it is most difficult for the people living in rural areas, as at least in cities good ayurvedic hospitals can be found.

The rising costs of ayurvedic medications are another issue in Ayurveda. Unlike the unequal distribution of ayurvedic drugs, their rising costs were acknowledged by both allopathic and ayurvedic physicians, namely Dr. Sarvaiya (ayurvedic), Dr. Narula (ayurvedic), and Dr. Shroff (allopathic). While agreeing with Dr. Sarvaiya and Dr. Narula that ayurvedic drugs are becoming more expensive, Dr. Shroff (allopathic) presented a different explanation for this phenomenon.

Dr. Sarvaiya (ayurvedic) admitted that although some ayurvedic medicines are costlier, some are also really cheap. Using herself as an example, she explained that the ayurvedic medicine she uses is working on her body and is of very low cost. She further explained that part of the reason medicines are expensive is because of their composition. “Some medicines can have
diamonds, or certain metals, which make them costly.” Dr. Narula (ayurvedic) supported these comments, stating that although “some herbal medicines are very affordable or herbal-mineral medicines are costly.” The preparation of certain medicines, he affirmed, is very costly as some are made from gold.

A different explanation for rising costs is given by Dr. Shroff (allopathic). Unlike Dr. Sarvaiya (ayurvedic) and Dr. Narula (ayurvedic), he describes that the rising costs are a result of an increasing trust amongst the people. He explains that ayurvedic drug companies are now producing medicine “in the form of the modern medicine, like capsules and tablets.” In doing so, the companies are increasing the prices of the drugs. “They are saying that it is costing them more,” Dr. Shroff (allopathic) explains: “but actually it is not, so the profit margin is increasing.” This notion of ayurvedic medicine morphing to more closely resemble allopathic medicines presents an interesting paradox. Despite looking very similar on the exterior, ayurvedic and allopathic medicines remain radically different from one another. One profound difference, mentioned by the allopathic doctors, is that many ayurvedic drugs have not been experimentally tested or proven in the same manner as allopathic drugs.

Correspondingly, the need for more research about ayurvedic drugs was mentioned by both ayurvedic and allopathic physicians, including Dr. Sarvaiya (ayurvedic), Dr. Ghanchi (allopathic), and Dr. Bhaskaran (allopathic).

Dr. Sarvaiya (ayurvedic) agreed that “more research is needed to prove the validity [of Ayurveda].” Dr. Ghanchi (allopathic) furthered this point, stating:

You see, in Ayurveda, from what I know, the research part is absent. So even the ayurvedic physicians, if you ask them, what will this do and at what level, they will not know. Ayurveda has not added anything new in the past five years. They just keep following the same teachings… nothing new has been invented.

Likewise, Dr. Bhaskaran (allopathic) professed, “there is a great scope and need for research but I think there is little movement for this.”

Although it is clear that all three doctors are in agreement that more research is needed in Ayurveda, slight differences between Dr. Sarvaiya’s (ayurvedic) and the allopathic doctors’ comments can be interpreted. In follow-up to her remark about the need for more research, Dr. Sarvaiya states that “people should be aware. If there is more research, then people will believe and say, ‘okay, it works like this.” Dr. Sarvaiya further explains that in order to truly understand Ayurveda, one has to have studied a vast amount. However, even so, everyone cannot understand and even more importantly, “the common people cannot understand.” She concludes by asserting that “for their understanding, there should be researchers and testing.” These points made by Dr. Sarvaiya differ greatly from those of the allopathic doctors. Unlike the
allopathic doctors, Dr. Sarvaiya believes that more research is needed not to validate Ayurveda but to improve the way it is understood by “the common people”- i.e. the biomedical community or those not trained in Ayurveda. Allopathic doctors predominantly mentioned the need for more research and tests within Ayurveda because the tests are, in fact, the only medium through which they can understand Ayurveda. Perhaps the reason that Dr. Ghanchi (allopathic) believes that ayurvedic physicians “will not know what something does and at what level” is because he, along with other allopathic doctors, does not understand the concepts of Ayurveda. Or, perhaps Dr. Ghanchi believes that ayurvedic concepts cannot be understood unless biomedical standards of testing and research are used to explain them.

Perceptions about Allopathy

In discussing the strengths of Allopathy, all practitioners uniformly agreed that Allopathy is well researched and its methods are evidence-based. As Dr. Ghanchi (allopathic) stated, “we have the research so we know what works where… what can be the side effects.” Research was mentioned not only in regards to its role in the development of new drugs, but also in providing a more complete treatment. In our discussion of the attributes of biomedicine, Dr. Shroff (allopathic) detailed, “We have the means to check all of the parameters, like sugar and cretonne levels, etc. We can check if the medicine is effective and if it has any side effects.” By being able to observe all of these various parts of the body, biomedicine is portrayed as all-inclusive in its treatment. In regards to the allopathic treatment of diabetes, Dr. Rajat (ayurvedic) states the following:

The diabetes is a lifestyle disease and is based on the body physiology and biochemistry. Modern medicine always provides the treatment because it sees the implications of diabetes as being holistic. They see it in the kidney, they always examine the heart, the weight and height, and then calculate the overall results. Since diabetes is a multi-organ disease, they always treat the diabetes as such. When [one] is diabetic, they will always do the kidney function test, liver function test, etc. And then [they will] understand all of the complications and describe the treatment.

Dr. Rajat (ayurvedic) was one of the few ayurvedic practitioners to describe biomedical treatment in such a positive and “holistic” manner. In this sense, the word “holistic” is used to explain Allopathy’s efficient way of using the modern technology to probe all important areas of the body that may be affected by the diabetes. In the previous section on Ayurveda, Dr. Rajat had shared other similar viewpoints to the allopathic doctors, primarily concerning Ayurveda’s “lack of structure and protocol”. These shared perceptions could be a result of Dr. Rajat being more informed about both systems compared to other doctors who knew less. Moreover, his ability to provide strengths and weaknesses of each system, in detailed ways, demonstrates his unbiased nature and holistic understanding of the systems.
Furthermore, both allopathic and ayurvedic doctors believed that allopathic medications provide quick results, which can be very beneficial in times of extreme pain or in the need of a lifesaving measure. Summarizing the viewpoints of several other allopathic doctors, Dr. Ghanchi (allopathic) stated, “for a quick fix, nothing works better.” Likewise, upon describing his treatment methods, Dr. Routray (ayurvedic) admitted to using allopathic medicine only for “sudden relief.” While he agreed that allopathic drugs provide the benefits of a quick result, he specified to use them only in a case of need. Dr. Routray further mentioned that “Allopathy is not good for permanent relief,” which explains his desire to use allopathic drugs only on a “quick fix” basis.

Several practitioners of both systems shared the notion of Allopathy being less effective in treating chronic illness. Dr. Ghanchi (allopathic), for instance, mentioned that “chronically, Allopathy [could not] do much about things.” He also explained that treating chronic illness in Allopathy could become very expensive. Dr. Singh (allopathic) further complemented this point, adding that allopathic medicine could be costly—especially the “newer drugs for the diabetes.”

Another weakness of Allopathy is mentioned by allopathic and ayurvedic physicians, depicting its incomplete treatment of diabetes. As Dr. Singh (allopathic) notes:

[The] weakness is that, in spite of the good control, the progression of the diabetes continues. The disease progresses but the diabetes is controlled. For example, if we control the blood sugar of any patient with the allopathic system of medicine, the effect of the diabetes, like neuropathy, will continue. This means that we cannot cure the diabetes, we can just control the blood sugar so that the effects of the diabetes on the various parts [of the body] are delayed. Its not that you can control the sugar and there will be no effect.

This idea of the disease progressing despite good control seems to contradict the previously mentioned concept of Allopathy being depicted as “holistic”. Based on the words of Dr. Singh (allopathic), the treatment of the blood sugar does not prevent the body from experiencing other detrimental side effects of the diabetes. Therefore, although perhaps “holistic” in its comprehensive technological diagnosis, Allopathy may not be so complete in its treatment.

Another weakness of Allopathy that was mentioned primarily by the ayurvedic physicians is the heavy focus of allopathic physicians on controlling blood sugar levels and comparatively lesser emphasis on lifestyle and dietary management. Dr. Rajat (ayurvedic), believes the weakness of modern medicine in treating DM2 to be related to the blood sugar level and its “dependence on the diet.” “So many times in modern medicine [the] diabetic patient die[s] [because of] hypoglycemia,” he explains. This is because the medicine provided is
according to the blood sugar level and the allopathic doctors “forget to tell the patient about their diets.” He additionally explains:

So, they tell you many things: you have to reduce your diet, you have to increase your exercise, and you have to take your medicine. So what happens? When the patients go back home, they start all three things together. They take in night the medicine, morning go for long walk, then come without breakfast and they will go in hypoglycemia and die.

This concept of allopathic doctors not providing adequate guidance for taking the medication they prescribe raises further concerns about the previously mentioned “holistic nature” of Allopathy and whether such a description holds true across all borders. Dr. Rajat (ayurvedic) believes that when the modern physicians direct their patients to any of the anti-diabetic medicines, such as insulin or oral hypoglycemics, they have to give them “proper diet charts.” Moreover, “when they do give the diet chart,” he argues, “they should say, ‘you have to take this amount of the minimum calories.’” In this statement, Dr. Rajat’s underlying ayurvedic status comes into play as the core values of Ayurveda (i.e. the importance of providing detailed lifestyle modifications,) undoubtedly shape his opinions on this matter. Correspondingly, Dr. Jiany (allopathic) makes a point about what can happen if an inadequate dose of medicine is given. He states that if the wrong dose is given, the diabetes will not be controlled and a patient might go into hypoglycemia.

Although effective, biomedical drugs can cause several complications if not taken or prescribed correctly. In the same fashion, even if appropriately administered, biomedical drugs can still cause harmful side effects. Such issues associated with biomedical drugs, particularly those commonly used in treating type II diabetes, were remarked upon by both allopathic and ayurvedic practitioners. First and foremost, Dr. Singh (allopathic) asserted that the side effects caused by the allopathic treatment of diabetes, i.e. controlling of blood sugar levels, were an inevitable part of the process. Moreover, while noting that insulin could be harmful, Dr. Singh also added that hypoglycemia was associated with all of the drugs that decrease the blood sugar. Along with an overdose that could cause hypoglycemia, Dr. Jiany (allopathic) mentioned several side effects that could occur, including: “gastritis disease, allergic reactions, and edema.” Dr. Narula (ayurvedic), on the other hand, comments on two major side effects of allopathic drugs that are common in the treatment of diabetes. The first side effect described is drug dependence:

Suppose you have some problem and are taking medicine. So if you take this medicine one-two months or one-two years, there must come a time when you will be free from the medicine and feel healthy. But no, even when curing the disease and feeling well, you will still feel as though you need the medicine. This is the dependence. Unless you are taking the
medicine, you will still not feel healthy. Even if the signs and symptoms are normal now.

The concept of being “cured” when finally “free[d] from the medicine” is one that is commonly mentioned by ayurvedic practitioners and marks a distinction between Ayurveda and Allopathy, as the word itself is understood differently in each system. Henceforth, it can be inferred that Dr. Narula’s ayurvedic background definitely plays a role in influencing his thoughts on this matter.

The second side effect mentioned by Dr. Narula is drug tolerance:

Today you need 5-10 mg of medicine for type II diabetes, but after some time the dose of this medicine increases. It is not effective after some time. Research is going, we are creating new medicines, but how many medicines can [we] research for [this]? Drug tolerance is building very fast. Have you heard of big bug? This is a very common term and is the problem of the modern science. This is a term that means that the bacteria and conjugative agents for diseases are not responding to antibiotics. You are giving antibiotics to cure some disease or infection but sometimes what happens is that the particular agent is not responding to the medicine. Then what happens? That is the problem. We must use minimum antibiotics.

As can be seen, the side effects of drug dependence and drug tolerance are interconnected. The longer a person is on a certain medication, the more likely their body is to become accustomed to it and require a stronger dose to continue working on a long-term basis. Dr. Deepak Joshi enhances this point, stating that “the biggest problem with allopathic medicine is that day by day, year by year, dose is increasing. [It is] increasing because the patient is not stressed about those things that are extra medicinal. He is made totally dependent on the medicine.” “If the blood glucose increases,” he further explains, “[they] add one more tablet.” Rather than questioning the diet or stress of the patient, the treatment involves more medicine.

As a final point, Dr. Narula (ayurvedic) discusses one common complication that occurs with allopathic medicine. Upon comparing an ayurvedic detox treatment to Allopathy, Dr. Narula suggests that while effectively curbing a disease, allopathic treatment also disturbs the intestinal flora. In the process of killing the bacteria, he explains, allopathic medicine also kills our good flora— the flora that is responsible for proper digestion. He concludes by saying that such side effects are not present in Ayurveda.

IV. Discussion

Overall, there was much overlap between the results of this study and the information presented within the scholarly literature. Topics of correspondence
were the need for Ayurveda to become more scientifically validated and justified, issues of malpractice within Ayurveda, namely the consequential harmful side effects of ayurvedic drugs if not properly prescribed, and the damaging effects of allopathic medications after long-term use.

However, a few areas of dissimilarity were also observed. One area of contrast was mentioned in Langford’s study, where the viewpoint of one ayurvedic doctor contrasted with those of this study. Although the ayurvedic doctors of this study did admit to using allopathic treatment in their practice at times and even spoke positively about it, none proclaimed that they believed it was the better system to treat chronic illness. In fact, unlike the ayurvedic doctor in Langford’s study, many of the ayurvedic and allopathic doctors of my study argued that the ability to treat chronic illness was one of biomedicine’s downfalls.

The second area of contrast was seen with the word “holism” and how its use in this study differed from its description in the complementary and alternative medicine (CAM) literature. One CAM study by Barrett et al. (2003) explains that CAM is more holistic and conventional medicine is more reductionist. Some of the terms used to explain the holistic nature of CAM in Barrett’s study include: “healing, not repair, health maintenance, mind-body unity, prevention, spirituality, uniqueness, continuity, feedback, and open-mindedness” (940-941). Comparatively, when used by some of the physicians of my study, holism was used to reflect positively on Allopathy—describing the system’s all-inclusive diagnostic process through the use of modern technological tools.

Understanding the perceptions of allopathic and ayurvedic physicians in regards to each other is crucial as it, in turn, determines the scope of integration that can occur. However, upon reviewing the existing scholarly literature, very few studies were found to focus on interpreting the varying viewpoints of physicians from different pathies. There were even fewer studies within the context of Ayurveda and biomedicine in North India. Studies that did examine the variances in knowledge or practice of physicians from different pathies were most commonly conducted through the viewpoints of biomedical doctors. Unlike this study, where viewpoints about the other pathy are examined in both ayurvedic and biomedical doctors, many studies only assessed this issue from an allopathic outlook.

Through its dual analysis of both Ayurveda and Allopathy, this study provides a valuable outlook on how physician perceptions can vary and may provide insight into certain issues that have yet to be examined in greater detail within the scholarly literature.

**Research Findings in Context of Scholarly Literature**

Despite the dearth of scholarly literature sharing similar research objectives to this study, a few reports have been found that also explore
physician perceptions of Ayurveda and Allopathy. Among these, both similar and differing viewpoints to those of the physicians in my study are described. Comparably to my findings, the studies of Gawde (2013) and Thatte (1993) mention Ayurveda’s lack of scientific validity as well as the adverse effects of its drugs. Moreover, also similar to my data, the harmful effects of allopathic drugs are described in a study by Menon (2010). Langford (1995), however, describes an ayurvedic doctor whose views about Allopathy oppose those of physicians in my study.

Gawde’s report on the knowledge, attitude, and practices of allopathic resident doctors concerning ayurvedic medicine states that allopathic doctors do not consider Ayurveda therapy to be an evidence-based system. Moreover, despite having fewer side effects, ayurvedic medication can still be harmful if not properly taken. This is further supported in one of the foremost standard textbooks of Ayurveda, known as the Sutrasthana of the Charaka Sarnhita. In this text it is said that “even the best drug becomes a potent poison if used badly” (Thatte 1993:179). In comparison to biomedical drugs, the side effects of ayurvedic remedies are fewer in their occurrence and severity. However, they still appear, especially upon improper direction. Similarly to how certain biomedical drugs, such as non steroidal anti inflammatory drugs (NSAIDs), should not be taken on an empty stomach, Ayurveda provides detailed instructions concerning the dos and don’ts for taking certain medication. Thatte’s study mentions some of these guidelines, including the exact time drug administration should take place, what types of food should be avoided or permitted with the drug, and what types of physical activity should be achieved. If an ayurvedic practitioner does not adequately inform their patients of these things, then the effectiveness of the drug may be jeopardized or the patient may feel the harmful side effects.

Also similar to my data, a study by Menon (2010) describes the adverse side effects of biomedical drugs, after prolonged use. Menon further states that in cases requiring long-term treatment, traditional medicines could be beneficial.

On a different note, a study by Langford (1995) presents the opinion of an ayurvedic doctor that diverges from several of those mentioned by the allopathic and ayurvedic doctors of my study. This ayurvedic doctor, named Dr. Karnik, predicts that in the next few decades, Allopathy will surpass Ayurveda, even in the treatment of chronic illness. Contrary to this, many of the ayurvedic doctors and even a few allopathic doctors of my study had described the strengths of Ayurveda to lie in its treatment of chronic disease. Dr. Karnik, however, counters the standard claims of Ayurveda as being more focused on prevention and Allopathy as being more focused on cure. He supports his argument using WHO (World Health Organization) as an example, explaining that it is the largest program for the prevention of disease (Langford 1995:345).
V. Conclusion

In conclusion, given their broad nature, the shared perceptions of physicians are also mixed with slight differences, varying in their presentation and force. Although differences are to be expected from physicians coming from different systems of healing, they are not wholly shaped by the pathy itself. Whether ayurvedic or allopathic, the perceptions and beliefs of each practitioner are a reflection of the experiences they have had and the circumstances in which they were raised. Although trends do appear, the words of these practitioners can by no means be used to broadly define the beliefs of any one pathy. Rather, the purpose of this analysis is to understand the shared perceptions that exist among the practitioners as well as the extent to which variations are prevalent.

In response to the question posed in the beginning of this chapter, that is—how well-matched are ayurvedic and allopathic practitioners in their understanding of each other’s practices and methods of healing— the findings reveal that the physicians are evenly matched in their perceptions of each other, at least on a surface level. Moreover, it is found that the knowledge of the physicians about the other pathy is partially a reflection of their work environment. This is seen with Dr. Nautiyal, an ayurvedic practitioner in my study who works in a large allopathic hospital and has a lot of knowledge regarding the effects of allopathic medicine, such as drug tolerance and drug dependence. Lastly, upon further analyzing the findings, I realized that as a whole, the allopathic and ayurvedic practitioners had more to say about their own pathy. This reveals that, aside from Dr. Deepak Joshi, who had an equal knowledge of both systems, the ayurvedic and allopathic physicians of this study are well-matched in both their knowledge of the strengths and benefits of the other pathy as well as in their ignorance, as they still know more about their own pathy.

After reviewing these findings, we have an improved understanding of how such varying perceptions may influence the treatment practices of ayurvedic and allopathic physicians. The weaknesses of Ayurveda mentioned by the allopathic physicians, such as its lack of validity, explain their reluctance to use ayurvedic practices or medications. Similarly, the strengths of Allopathy mentioned by the ayurvedic physician, such as its quick effect, explain their readiness to resort to allopathic remedies.

Correspondingly, we are better equipped to face the second research question posed in this thesis, regarding the value of integration and its perceived existence. Finally, given the lack of scholarly studies that assess physician perceptions of Ayurveda and Allopathy, the findings of this study were not commonly supported in the scholarly literature. However, among the scholarly studies that did correlate with this study, more overlap was found to occur rather than differences.
Chapter 4: Integration

The test of a first-rate intelligence is the ability to hold two opposing ideas in mind at the same time and still retain the ability to function.

-F. Scott Fitzgerald

I. Introduction

Repeat a word, any word, one too many times and it will start to lose its meaning. That was the case for this word—the word that shaped this project while also almost tearing it apart.

Put simply, integration can be defined as an act of combining and coordinating separate parts into an integral whole. When used within the context of Ayurveda and Allopathy in North India, however, such a simple definition cannot accurately depict the integrative practices occurring between the two systems. They are far too complex, too variant, to be defined as “a combination of parts.” In fact, most of the time, the “combinations” are unequal, with one system incorporating more than the other, and losing pieces of itself in the process. The fusions of the systems may also occur in varying forms, i.e. through the provider, patient, or institution or as complementary or alternative practices. Adding in a final layer of complexity, the term itself is not commonly used by allopathic and ayurvedic practitioners in North India. As the integrative use of Ayurveda and Allopathy is not yet a standardized and accepted system in North India, many doctors are not aware of it. Moreover, despite the large numbers of allopathic and ayurvedic doctors engaging in integrative practice, integration remains widely misunderstood. Hoping to shed some light on this, the following chapter explains the perceptions of ayurvedic physicians, allopathic physicians, and dually-trained Dr. Deepak Joshi in regards to how integration should exist and what value it may hold in the treatment of DM2. Moreover, the combination of these perceptions and the descriptions of DM2 treatments used by all three types of physicians serve to illustrate the occurrence of both structured and unstructured integrative practice.

II. Defining Integration in the Scholarly Literature

Being so multidimensional, it is almost impossible to understand integration through one perspective. Before diving into the findings of this study about integrated treatment, I will review how integration is defined in the scholarly literature to further clarify and provide background knowledge regarding the terms integration and integrative medicine. Additionally, while integration remains the leading theory of this study, the themes of complementary and alternative practice were also present in several of the doctors’ discourses. Therefore, I will also briefly discuss how complementary and alternative practices are described in the scholarly literature.
The following studies of Boon, Bell, and Maizes reflect a positive outlook on integrative practice. In their definitions of integration, Boon (2004) and Bell (2002) place emphasis on the importance of treating the person holistically and incorporating both conventional and complementary systems of medicine to do so. Boon’s study creates a conceptual framework in which integration is depicted as “an interdisciplinary, non-hierarchical blending of both conventional medicine and complementary health care” (Boon 2004:3). According to Boon, integration “is based on a specific set of core values that include the goals of treating the whole person, assisting the innate healing properties of each person, and promoting health and wellness as well as the prevention of disease” (Boon 2004:3). Bell’s study supports this definition of integration, adding that “integrative medicine represents systems of care that emphasize wellness and healing of the entire person (bio-psycho-socio-spiritual dimensions) as primary goals, drawing on both conventional and complementary and alternative medicine (CAM) approaches in the context of a supportive and effective physician-patient relationship” (Bell 2002:133). While sharing a similar vision to Boon and Bell, Maizes’ (1999) study also emphasizes the need for prioritizing the needs of the patient. In this study, integrative medicine is interpreted as a shift in the “paradigm from sickness to health, [keeping] the patient in the central focus of care, and [multiplying] the number of strategies available to the patient” (148).

On the other hand, the publication of Mann, Gaylord, and Norton (2004) as well as a study by Ernst (2004) describe the hardships that stand in the way of integrative practice. According to Mann, Gaylord, and Norton, the integration of CAM with biomedicine is fraught with several issues that must be addressed before an integrative model can be pursued. These issues include: “simple inertia, financial disincentives, differences in beliefs about healing, lack of access to education about CAM, and limited information on clinical outcomes about complementary and alternative therapies” (9). Moreover, a study by Ernst further explains the philosophical underpinnings of many CAM therapies that counter orthodox medical perspectives, and thus impede attempts at scientific validation with conventional methodologies (159).

Finally, there are also others who take a skeptical view of integrative medicine that is more complex than the above. For example, in some places, Ernst argues that what we need is evidence-based medicine, and the origins of various therapies as long as rigorous scientific testing shows them to be effective. However, once they become a part of the evidence-based canon, they are neither CAM nor biomedicine but simply scientifically validated medicine, so integration becomes beside the point.

In addition to describing how integration is represented in the scholarly literature, it is also important to discuss the schemes of complementary and alternative medicine, given their closeness to integration in this study. Complementary medicine is described as being in parallel tracks to modern
medicine but not necessarily interacting with it. In complementary medicine, the strengths of two systems are used to complement each other and make up for their individual weaknesses. Whereas complementary medicine is used in conjunction with modern medicine, alternative medicine is used in place of it. Moreover, the alternative system is different from modern medicine—coexisting and competing with it (Barrett et al. 2003).

In conclusion, one could argue that after reviewing the opinions of scholarly literature on integration, the term is even more inexplicable. This is because even within the scholarly literature, there are multiple forms of integration. Moreover, the scholarly literature depicts integration as being a blend of conventional and complementary medicine, rendering the distinction between these two schemas even more blurry. However, unlike in the scholarly sources described above, where integration is portrayed in a much broader context, this study grapples with two very specific systems of medicine. Rather than discussing how integration may take form within all CAMs and Allopathy, this study strictly focuses on the traditional system of Ayurveda and the system of Allopathy dealing with DM2 in Northern India. This said, the integration as well as the complementarity and alterativeness that sometimes occurs in this model still remains fairly complex and layered. This study reveals that all three of these schemas transpire through several different mechanisms, in many different forms, meanings, intentions, and are dependent on the general situation (geographical, culture) in which they are found. The use of physician perception is indispensable in this model and serves to elucidate how integrative, and sometimes complementary and alternative practices, are defined or understood in the mind of those who practice them.

III. Understanding Physician Viewpoints on Integration

What people say, what people do, and what they say they do are entirely different things.

-Margaret Mead

The complexity of defining integration directly relates to the intricacy of the social dynamics in which it occurs. A first and important step in unfolding the many layers of this concept involves studying the opinions of its actors. These actors, being the physicians of Ayurveda and Allopathy, share several opinions about integration, with some reflecting positively on it and others indicating a need for progress.

Among these varying viewpoints about integration, the schemas of complementary and alternative medicine may also be uncovered. In fact, even though titled as “integrative”, they may actually be alternative or complementary. If viewed on a spectrum, the schema furthest to the left would be alternative medicine and the schema furthest to the right would be integrative medicine. The schema in the middle, but closer to integration, would be complementary, as it
more closely resembles integrative practice. When analyzed on a finer level, the descriptions of the positive and negative aspects of integration translate to being the strengths and weaknesses of the systems themselves. Therefore, the use of each system in situations where the strengths are utilized becomes a form of complementary practice, rather than integrative. Likewise, the negative descriptions of integration, which are actually descriptions of the weaknesses of each system, can be understood as physicians viewing Ayurveda and Allopathy as alternative systems.

Moreover, along with their opinions about integration, the physicians also share their views on how integrative practice should occur, detailing the certain conditions that would make integrative practice “acceptable.” In this case as well, many of the conditions where “integration” should occur, are actually a description of complementary medicine. The one condition that does not fit this situation, however, is the state of a physician being “dually-trained” and having an equal knowledge of both systems. In this case, integration is the only schema that fits this case.

Finally, two main types of data are drawn upon in this chapter: the ways physicians explain integration should occur and the ways it actually occurs. As can be implied from Mead’s words, sometimes what physicians say generically about integration are somewhat different from their detailed descriptions of what they do. Moreover, as the above scholarly literature has laid out, there are numerous forms and dimensions of integration, among which themes of complementary and alternative medicine are also present. In analyzing my data, I strive to identify the types that were common in these doctors’ discourses.

**Physician Perceptions of the Value of Integration and How It Should Occur**

Physicians of this study had both positive and negative views about integration. Broadly, compared to the allopathic physicians, the ayurvedic physicians and dually-trained Dr. Deepak Joshi appeared more optimistic in their comments about integration. Moreover, when asked to explain ways by which integrative practice could be acceptable, both ayurvedic and allopathic physicians were able to consider some possible circumstances. The physicians professed that integration should occur in the following cases: chronic illnesses, mild, non-severe diabetics, or emergency situations. In addition, the use of clinical parameters as well as an equal knowledge and training in both Ayurveda and Allopathy were discussed by ayurvedic and allopathic physicians as being further requirements for integration. Lastly, ayurvedic physicians discussed the need for mutual respect and proportionate resources between both systems to improve integrative practices.

Regarding the positive views about integration, Dr. Narula (ayurvedic) and Dr. Deepak Joshi (dual) both agreed that given the shortcomings of both systems, an integrated use could be valuable. Dr. Deepak Joshi (dual) detailed
the downsides of both Ayurveda and Allopathy. For Ayurveda, he described certain situations in which it was of no help, such as in the case of an acute acidosis-acidotic coma where an allopathic treatment, such as insulin, was needed. For Allopathy, he highlighted the increasing rates of medicinal dosage. He concluded saying that one could not label something as useless or all-powerful. Rather, a judicious use of both systems was what was best for the whole person. Dr. Narula supported this view, expressing that integration could be “helpful for the people.”

Unlike the ayurvedic doctors and dually-trained Dr. Deepak Joshi, the allopathic doctors shared negative views about integration. Dr. Singh (allopathic) and Dr. Bhaskaran (allopathic) said that in order to prove the value of integration, more research about Ayurveda was needed. Likewise, Dr. Ghanchi (allopathic) expressed his lack of understanding about Ayurveda. “I have no idea for the combined use of Ayurveda,” said Dr. Singh, “but my perception of integration of Ayurveda and Allopathy is no.” Like many other allopathic practitioners, Dr. Singh stressed the need for further research of Ayurveda before integration could be feasible. He explained that studies were needed to prove which medicines, ayurvedic or allopathic, “worked better.” He defined the word “better” as the patient being cured and the diabetes, complications, and economy all being controlled. Dr. Singh further argued that “this type of research [must be done] in a large number of people so that we can have significant data and one definite opinion.” Likewise, Dr. Bhaskaran believed that if more research were put into proving the efficacy of ayurvedic medicine, integration could be rendered more beneficial. Lastly, Dr. Ghanchi professed never to refer his patients to Ayurveda. “If I am not finding it logical,” he explained, “then how can I refer my patients there?” To conclude, there were a few allopathic practitioners whose statements opposed those of the others. For example, while discussing the system of integration in light of its strengths and flaws, Dr. Shroff (allopathic) professed integration to be “much better” than each pathy on its own.

As portrayed in the descriptions above, not all interviewed physicians were in favor of integration. In fact, the majority of allopathic physicians as well as a few ayurvedic physicians were less accepting of integration. Dr. Asawa (ayurvedic), for instance, believed that Ayurveda and Allopathy should remain separate.

Both allopathic and ayurvedic physicians specified that the use of integrative treatment should be based upon the condition or circumstance of the patient. Dr. Sarvaiya (ayurvedic) admitted that integration was not successful in treating all chronic illnesses. “Integration is good,” she explained, “but it depends on the conditions.” Dr. Jiany (allopathic) noted that as long as the diabetes was mild, it was okay if the patient wanted to use ayurvedic treatment. However, if the diabetes was severe, then they should use allopathic medicine. Dr. Ghanchi (allopathic) agreed with Dr. Jiany, affirming that integration works well for chronic disease but cannot be used for quick results. While corresponding with these
views, Dr. Narula (ayurvedic) and Dr. Sarvaiya (ayurvedic) called into consideration moments when ayurvedic doctors have no choice but to use the allopathic medicines. They stressed that especially in the rural areas, there are times when ayurvedic doctors need to use the allopathic emergency medicines. However, life-threatening instances aside, Dr. Narula (ayurvedic) concluded that if he were sitting in Dehradun, where there are many experts of Allopathy available, and if he were unable to treat a patient with the ayurvedic medicines, he must refer the patient to the allopathic doctor rather than treat him with allopathic medicine himself. Similarly, although not opposed to ayurvedic doctors using allopathic medicine in emergent situations, Dr. Sarvaiya stated, “but when the patient is not serious and can be treated by ayurvedic medicine, why would you want to disturb his metabolic and/or mental system with allopathic medicine?” Such views demonstrate that both allopathic and ayurvedic physicians believe integrated treatment should only occur in certain situations.

In addition to these specific cases, Dr. Shroff (allopathic) and Dr. Deepak Joshi (dual) further mention the necessity of following the clinical parameters during integrated treatment. If used in conjunction with Allopathy, Dr. Shroff (allopathic) expressed that Ayurveda ought to follow the clinical paradigm of biomedicine.

Allopathic and ayurvedic physicians likewise explained that to provide an integrative treatment that is both beneficial and safe, the doctor must have an equal understanding of both pathies. However, in the assessment of the ways integration actually occurs, it was found that the integrative practice was common in both systems despite a lack of proper training in or knowledge of both pathies. This illustrates that while they often go together, the general opinions of physicians about integration are not always an accurate representation of the integration that actually occurs. Furthermore, although the lack of expertise or awareness about the other pathy may not prohibit practitioners from engaging in integrative practice, it does play a role in how they view integration. Dr. Singh (allopathic), for instance, has very little knowledge of the ayurvedic system and consequently has “no idea for the combined use of Ayurveda.” On the other hand, doctors with dual training and equal understanding of both systems, such as Dr. Deepak Joshi, are able to understand how the limitations and strengths of both pathies can be used to provide integrative treatment.

This said, both allopathic and ayurvedic physicians believed that integration should only occur when a physician is trained in both systems. In relation to this, Dr. Deepak Joshi (dual) advised that a doctor should know both pathies, which he wants to integrate by heart. Likewise, Dr. Ghanchi (allopathic) asserted that only somebody who is trained in Allopathy will know the advantages and weaknesses of Allopathy. Hence, he believes that referral should occur when ayurvedic doctors feel that they cannot properly control the disease. Dr. Ghanchi further stated that “if somebody wants to practice good medicine, he should stick to what he has learned…what he is trained in. If you
mix both of them without proper training,” he says, “you are not good at either of them.” This holds true with Dr. Deepak Joshi’s opinion—that without sound knowledge of both systems, proper integrative treatment cannot take place. Correspondingly, Dr. Narula believes that:

*The allopathic doctor must be trained in ayurvedic medicines. If the allopathic doctor was prescribing ayurvedic medicine, he would just read the label on the medicine and know only what the label says... that's no good. He must know about all of the ayurvedic principles that he can. And it is only possible when he is being trained in the medical college where he [received his degrees]. It must be in their syllabus and that course, you can say, is an integrated course.*

Consistent with this, Dr. Ghanchi (allopathic) agrees that ayurvedic practitioners should be learning more about Allopathy. Overall, it can be concluded that the practitioners of both systems believe that there is a great need for more education.

To conclude, unlike most allopathic physicians, ayurvedic physicians mutually agreed that regardless of integrative use, Ayurveda and Allopathy should be viewed on equal levels. Dr. Asawa and Dr. Narula both believe in the equality of the two pathies. Illustrating this point, Dr. Asawa stated, “each system should be provided with equal resources to excel.” Dr. Narula (ayurvedic) likewise professed, “it is not good if some things we learn and [other] things [they] learn. It must be a common course...on the same level.” Moreover, many ayurvedic doctors believe that a barrier standing in the way of integration is the lack of resources allocated to Ayurveda by the Indian government. With less money, fewer resources, and less overall support, a balanced and useful integration of Ayurveda and Allopathy becomes difficult.

**V. The Occurrence of Unstructured and Structured Integration**

In the scholarly literature on CAM, integrative, complementary, and alternative paradigms are often portrayed as quite distinct. However, in practice, their boundaries often become blurry and one form morphs into another. Based on the perceptions of my physicians about integration in addition to the descriptions of their DM2 treatment, I have categorized the forms of integration I observed as being either structured or unstructured, previously described as an integration that is more or less conscious, consistent, and systematized. The majority of the integrative practices that are described by the ayurvedic and allopathic physicians of this study have been categorized as unstructured forms of integration. They include the integrative practices occurring on the part of the physicians as well as their patients. On the other hand, the structured forms of integration include the integrated treatment of Dr. Deepak Joshi as well as the integration occurring in institutions such as hospitals, colleges, and the various levels of public health facilities. On the continuum, unstructured integration is
closer to complementary than structured integration. Sometimes in some cases, although not always, it even involves a move towards using Ayurveda as an alternative. Structured integration, on the other hand, is at the far end, representing the most systematic form of integration.

How Unstructured Integration is Occurring

Forms of unstructured integration occurring in this study are described as physician-based and patient-based integration. Aside from Dr. Deepak Joshi, no other physicians of this study had dual training in both Ayurveda and Allopathy. Moreover, the integrative practices described by the ayurvedic and allopathic physicians of this study were irregular and dependent on certain conditions. Likewise, the patient-based integration that was described by the physicians of this study was also random and had no regulatory measures in place.

I have defined these two types of integration based on the data of this study. These definitions do not include all possible manifestations of physician-based or patient-based integration but they serve as a way to organize the results of this study. I defined physician-based integration as a physician who either uses the treatment methods, tools, or terminology of the other pathy, prescribes the medication of the other pathy, and/or refers their patient to the other pathy. Moreover, I defined patient-based integration as a patient either seeking the treatment of both pathies at the same time or switching from one pathy to the other, with or without the approval or awareness of their physician(s).

1. Unstructured Physician-Based Integration

While the physicians most commonly mentioned the occurrence of physician-based integration, it was also perceived as the most precarious or beneficial form of integration, depending on the way it occurred. Almost all physicians agreed that without equal knowledge and training in both pathies, a physician could not provide efficacious integrative treatment. Rather, the integration would be plagued with malpractice and further devalued as a system.

Ultimately, it was found that the ayurvedic physicians of this study had a greater tendency of referring their patients to Allopathy as well as occasionally prescribing allopathic medicine in conjunction with ayurvedic medicines. These results strongly differed from the allopathic doctors of this study who, for the most part, claimed never to refer nor prescribe ayurvedic medicine.

In the sections below, the integrative methods of ayurvedic physicians are explained, followed by the views of both ayurvedic and allopathic physicians regarding other physicians who integrate.
Unstructured Integration by Ayurvedic Physicians

The only doctors to discuss their use of integrative treatment were the ayurvedic doctors. Dr. Sarvaiya (ayurvedic) admitted to using both ayurvedic and allopathic techniques in her diabetic treatment. She explained that if a patient came to her with very high blood sugar and sugar in the urine, she knew that the kidney was being affected and that the patient was in a serious condition. Her course of action would be to continue the allopathic treatment as well as add in ayurvedic treatment. She would continuously monitor the blood sugar levels until they became consistent and then transition the patient to ayurvedic treatment. Depending on the state of the patient, Dr. Sarvaiya would discontinue the allopathic treatment after one to two weeks or one to two months of integrated treatment. Dr. Sarvaiya affirmed that if the blood sugar was very high, she believed that the patient should never stop their allopathic treatment. If the patient were not using Allopathy, then she would refer them to an allopathic physician but recommend using Ayurveda as well. Similarly to Dr. Sarvaiya, Dr. Narula (ayurvedic) also commented on referring his patients to Allopathy when needed. Dr. Sarvaiya mentioned the number of diabetic and hypertensive patients that she previously had who initially only used Allopathy but then transitioned into integrated treatment and finally switched to using just Ayurveda. She remarked that if diabetics’ “[took] allopathic medicine alone, their blood sugar was not under control.” However, “if along with the Allopathy they were taking Ayurveda,” the control was much greater. In this type of physician-based integration, the practitioner is not prescribing medicine from the other pathy but rather referring their patient as well as using their own medicine to complement and improve the treatment that patient may already be receiving. The ultimate goal is to discontinue the treatment from the other system entirely. However, in order to do so, integrated treatment of both systems is essential.

Dr. Routray (ayurvedic) also commented on engaging in integrated practice of both systems. Unlike Dr. Sarvaiya (ayurvedic) and Dr. Narula (ayurvedic), he admitted to prescribing allopathic and ayurvedic medicine at the same time. In doing so, he explained the following:

"You know it is like allopathic is not good for permanent relief. Ayurveda is good for permanent relief. If we [treat] somebody who is suffering from a disease, we will start [by giving] allopathic medicine only for sudden relief, not permanent relief. Some disease[s] [are] very dangerous but Ayurveda is most important for permanent cure. No need to operate… cure permanently.

While disclosing his use of allopathic medicine, Dr. Routray (ayurvedic) also made a point to note the strengths and weaknesses of both pathies. He reinforced Ayurveda’s strength in providing permanent relief as well as the effectiveness of Allopathy in providing acute relief. Such viewpoints may clarify
the reasons ayurvedic doctors such as this Dr. Routray utilize integrative practice, especially in rural areas where Allopathy is not easily accessible.

**Physician Views on Unstructured Physician-Based Integration**

Both ayurvedic and allopathic physicians shared their views about other physicians integrating both systems. While reaffirming the fact that in his 25 years of practice he had never prescribed allopathic medicine, Dr. Narula (ayurvedic) confirmed that other ayurvedic doctors were prescribing allopathic medicine. This statement was shared by Dr. Ghanchi (allopathic) who reinforced the notion that ayurvedic doctors were using Allopathy for the “quick fix.” As Dr. Ghanchi explained, if someone were going to see an ayurvedic doctor, it must have been because they were not satisfied with Allopathy. And so, by continuing to prescribe allopathic medicines, the ayurvedic doctors were not helping the cause.

Some of the ayurvedic doctors, such as Dr. Narula, commented on the integrative practice occurring on the allopathic side. In his discussion of integration, Dr. Narula confirmed that allopathic doctors were “prescribing very frequently nowadays.” In explanation he declared that this was because “they [knew] the strength of Ayurveda... that there [were] no side effects.” There is a quick recovery in many diseases where Allopathy totally fails but Ayurveda succeeds. The consumer awareness is also there,” he explained. If any doctor, ayurvedic or allopathic, treats the patient and the treatment harms them in any way, the patient can complain and be compensated. Dr. Narula believes that it is for this reason that many allopathic doctors prescribe ayurvedic drugs, as they know that the risk of receiving harm from Ayurveda is much lower. In other words, they are aware of the limitations of Allopathy and the advantages of Ayurveda. Dr. Shroff (allopathic) further adds that despite not being allowed to use ayurvedic medicine, the allopathic doctors are still using it because “they have seen it and have the trust.”

2. Unstructured Patient-Based Integration

Although a very prevalent type of integration in actuality, patient-based integration received little mention by the doctors of this study. While saying less about this type of integration, the majority of the physicians did acknowledge integration to occur on the part of their patients. Moreover, it was found that ayurvedic physicians were more open to and positive about patient-based integration than allopathic physicians. The negative opinions of allopathic physicians were traced back to their opinions on the perceived flaws of Ayurveda, e.g.- lack of blood sugar assessment.

Although ultimately it is the practitioner who is responsible for assigning the treatment, the patient has the power of choosing the system, and in many cases, they choose both Ayurveda and biomedicine. As Dr. Bhaskaran
(allopathic) noted, “In India, people migrate between two systems. There are persons who stop the kind of medicines we prescribe and go to the ayurvedic practitioner or yogi who prescribe them something else.” Dr. Sarvaiya (ayurvedic) presented a similar opinion, stating that often people will try to mix the ayurvedic natural products that have hypoglycemic activity with the allopathic medication.”

In explaining a reason for why patients may shift from allopathic to ayurvedic medicine, Dr. Singh (allopathic) stated that in current society people have a lot of stigmas in their attitudes against allopathic medicine. They feel that if they take allopathic medicine they will feel the side effects or they “will be dependent on the medicine.” Moreover, Dr. Narula (ayurvedic) affirms that the trends of patients switching to Ayurveda are increasing:

They are coming. Especially in our hospital, the patients want to get rid of the allopathic medicines. The arthritic patients and [patients with] other diseases… they come to us for their treatment. I’m glad to say that we are treating many patients [to whom] Allopathy had said would have to get surgery. Especially in the knee/hip replacement and spinal surgery.

Here, Dr. Narula makes the point that it is the patients who are deciding which type of treatment they wish to receive. Such a decision is based on their knowledge of the limitations and advantages of both systems. In choosing to switch from one to the other or utilizing both at the same time, the patients are creating their own form of integrated treatment.

**Structured Integration and How It Is Occurring**

Both Dr. Deepak Joshi’s private practice as well as institution-based integration serve to represent the forms of structured integration that are occurring in this study. Both of these forms of integration are categorized as structured because they provide a consistent and controlled use of both systems. Dr. Deepak Joshi’s integrated treatment of DM2 will first be described. A description of the institution-based integration that was discussed by the physicians in this study will follow.

1. Structured Physician-Based Integration

Dr. Deepak Joshi was raised by a father suffering from diabetes and a mother who treated his father with ayurvedic and household remedies, along with allopathic medications. He explained that despite having acquired diabetes at the age of 32, his father was still alive now, more than 50 years later. Dr. Deepak Joshi acquired his M.D. from King George’s Medical College in Lucknow in 1988. A few years into his practice, he began reading the *Diabetic Manual—for the Doctor and Patient*, by the esteemed Elliott P. Joslin. He found that in this text, Joslin stressed too much extra medicinal effort. At that time, he explained, there
were only two types of allopathic medicine for the controlling of diabetes. He recalled feeling dissatisfied with these options stating:

*I must search [for] something else to heal these people. The [allopathic] medicines [are being used] again and again while their dose is increasing, even though they are not decreasing the blood sugar. [Allopathy] only [has] two medicines... but they [keep] changing their names, changing their quantities and all... after having so much of education... And on the other hand, I have seen it in my house, how my mother treated my father...*

Inspired by his mother, Dr. Deepak Joshi began searching for another way. He became engrossed with the literature of every other therapy being practiced: Ayurveda, Unani, Chinese therapy, acupuncture, homeopathy, naturopathy, Tibetan medicine, etc. Upon reading *The Vedas* and seeing the names of certain herbs and diseases, he was astonished to see the amount of information about diabetes that was present despite dating back 3,000 years. With even greater inspiration, Dr. Deepak Joshi continued his intense study of these therapies, focusing on Ayurveda. Along the way, he consulted with several Unani and ayurvedic practitioners, further enriching his understanding and practice of the systems. Dr. Deepak Joshi’s unrelenting faith and desire to provide a better treatment for diabetic patients has led to the development of the Kanti Diabetic Centre in Rishikesh, a private clinic where he has created his very own anti-diabetic drug formulae and now currently works with a team of allopathic and ayurvedic physicians to treat diabetic patients.¹

Dr. Deepak Joshi’s method of treating diabetes is unparalleled in any of the other regimens described by the other doctors of this study. The combination of his profound knowledge of Ayurveda and background training in Allopathy have allowed him to devise a treatment plan for diabetic patients that is effective and safe. To understand his treatment method as a whole, Dr. Deepak Joshi’s use of Allopathy and Ayurveda is detailed.

Dr. Deepak Joshi first explains his use of allopathic medication with diabetic patients. Essentially, he believes that in the initial stages of treatment a very mild amount of allopathic drugs should be used, if any at all. In describing this treatment method, Dr. Deepak Joshi tells me about a trend he has noticed during his many years of treating diabetic patients. Often, many of his patients will come to him with blood sugars around 500. He asks them what their blood sugar level was two months prior, and they will answer that it was around 160-170. “How did it increase to 501?” he questions. The patients are unable to answer. Fortunately, Dr. Deepak Joshi has an idea. He knows that insulin production falls within a curve. This curve demonstrates that, within a certain amount of years, insulin production is reduced by a certain amount. Therefore,

¹ http://www.kanti.onbuild.com/dr-joshi.html
the reason a patient’s blood sugar level might suddenly increase in a short amount of time cannot be related to a decrease in their insulin levels. For this reason, he will withhold from treating the patient with insulin. On the other hand, other factors that could be the cause of an increase in blood sugar are: a urinary tract infection, severe mental stress, lack of exercise, or a high caloric diet. Dr. Deepak Joshi mentions that Indian people consume a lot of oil and “do not know how many calories are in the fat.” Moreover, they do not know that ultimately, these calories will be converted into glucose.

Having ruled out the need for insulin, Dr. Deepak Joshi explains to me his ensuing thought process:

So what will I do if I see this patient? I will first listen to her patiently [and] reassure her that nothing is going to happen to her. I see these patients daily… [She] will be alright. Then I look [to see] whether she is having [an] infection at all. I [ask] questions [about] fever and all that. Then I will ask questions about [the] history of which medicines [she is] taking… if [she is] taking same medicine for two to three years [she] may [have] develop[ed] resistance for it. Maybe I will change the group. This is apart from my ayurvedic preparations. That is separate. I am talking of allopathic now. So how I will tackle? I will tackle very mildly for her. I will not increase the medicine or say [she] require[s] insulin or this or that. Nothing. I will not do this.

Dr. Deepak Joshi reiterates his desire against using insulin or prescribing more allopathic medicine to this patient. Rather, he will “try to give the patient medicines that act on other things besides the pancreas.” Furthermore, Dr. Deepak Joshi may use preparations of Ayurveda that are made of soluble fibers and aid in slowing down the digestion. He insists on the minimum use of allopathic medicine and heavy reliance on ayurvedic medicinal and herbal preparations. Dr. Deepak Joshi states that “if you think that 2 mg of something is required, the good scientists say that you should use only ½ mg initially.” Wait to see the results, he advises, before adding more allopathic medicine. “Change the diet, exercise, thinking patterns… whatever you want you can change but only use very little of allopathic medicine.” He acknowledges that while some patients might require the use of only allopathic medicine, other patients might not require it at all. In deciding the course of treatment for a diabetic patient, he declares that contrary to popular belief, the level of blood sugar should not be the criterion. Rather, the real criteria should be: “how many years [the patient has been] diabetic, what the precipitated factors of diabetes are, [and] whether [the patient] is obese or not.”

After outlining his use of allopathic medications in the treatment of diabetic patients, Dr. Deepak Joshi describes his use of ayurvedic treatment. In his practice, Dr. Deepak Joshi works with an ayurvedic physician. He states that although he has more experience than the ayurvedic physician, he prefers to
have him check the *doshas* of the patient. He does this “to be on the safer side” as he is an allopathic doctor and may sometimes need to consult with the ayurvedic practitioner. Dr. Deepak Joshi’s private practice also includes a pharmacy with medicines that he and his colleagues developed. These medicines underwent several clinical trials and were approved by other hospitals and the state. There are four groups of diabetic medicine in the pharmacy. As Dr. Deepak Joshi explains, having multiple groups of medication is necessary in ayurvedic treatment because in each patient more than one combination is used. Sometimes one combination will not work and so another combination will be used. Finding the right combination that suits the patient is not simple and requires time and experience on the part of the physician.

It is observed that Dr. Deepak Joshi uses the parameters of Allopathy to guide his ayurvedic treatment. Moreover, a large part of his ayurvedic treatment involves the use of ayurvedic herbs to balance out the *doshas* and ultimately, restore the health of the patient. Describing his integrated treatment in further detail, Dr. Deepak Joshi states:

*We should think of adding some medicine with Ayurveda to allopathic. Let’s suppose some patient is coming with [an] infection. So, ayurvedic medicine is not going to increase the insulin production within two or so days. The doshas take time and the patient is in very bad condition. How will he [eat] food and exercise and all [of] these things? You may advise him to use insulin. In this case, integration is very helpful.*

Similarly to Dr. Shroff (allopathic), Dr. Deepak Joshi believes that the parameters of controlling diabetes from the modern medical system should be used. However, he also believes that they should be used in combination with the treatment from the ayurvedic system. As he says, “use ayurvedic herbs but check yourself according to the modern technology. If it is perfectly working, then there is no better method than this.” In conclusion, Dr. Deepak Joshi asserts that the ayurvedic herbal medicines would never prove harmful and therefore, given the right circumstances, would be the best course of treatment for the diabetic patient. Such views are a result of his training and comprehensive understanding of both systems of healing.

Consistent with the views of the other ayurvedic and allopathic practitioners of this study, Dr. Deepak Joshi upholds that above all else, knowledge is the most important criterion in successful integration. He specifies that “a person must gain book knowledge first and then practical knowledge.” Moreover, if an ayurvedic physician wants to treat a diabetic patient with Allopathy, he must learn the entire biomedical physiology of diabetes. Likewise, if an allopathic practitioner wishes to integrate, he should also know by heart what the doshas are and the true purpose of ayurvedic treatment. If an honest approach is taken, i.e. proper documentation of the amount of medicine used and the exact results obtained, with ayurvedic medicine, then there can be no harm.
After 20-30 years of experience with his integrated practice, Dr. Deepak Joshi is confident that his approach has saved many patients from harmful complications, such as renal failure. “If someone has the courage to [learn] both the pathies… to be a master of both pathies”, he tells me, “then [they] can definitely be helpful to the mankind.” Dr. Deepak Joshi was the only interviewed physician to use the word “courage” in the context of integrative treatment. In conjunction to this, he also told me that I would not be able to find another physician like him. Not only is courage needed to understand two opposing sets of principles, as Dr. Deepak Joshi has done, but also it is needed to use them together, as such a process remains extremely uncommon in Northern India.

2. Structured Institution-Based Integration

The physicians of this study did not frequently mention institution-based integration, even less so by the allopathic doctors. However, when mentioned, it was commonly perceived to occur within the ayurvedic system. Some examples of institutional systems partaking in integrative practices were ayurvedic colleges and allopathic hospitals. Based on the results of this study, I have defined institution-based integration as the incorporation of both Ayurveda and Allopathy into the curriculum of a university, as a hospital that includes the departments of both systems, or as a governmental policy that either supports or discourages the practice of integration.

This study found that compared to allopathic colleges, the ayurvedic schools were more likely to include an integrated course, in which certain fundamentals of Allopathy were taught to the ayurvedic practitioners. Dr. Narula (allopathic) explained that the ability of an ayurvedic physician to practice or prescribe allopathic medicine was “a matter of the state” and could be allowed by taking an integrated course. He mentioned that such courses were being provided in some ayurvedic colleges. On the other hand, Dr. Singh (allopathic) stated that the allopathic schools were not adding Ayurveda but that the ayurvedic colleges were adding Allopathy to their curriculum.

A similar disparity was described in allopathic hospitals. This study found that allopathic hospitals were more likely to have greater numbers of allopathic doctors than ayurvedic doctors and more resources. Despite being established in an allopathic hospital, an AYUSH (Ayurveda, Yoga, Unani, Siddha, and Homeopathy) unit lacks the quality and amount of resources that the rest of the allopathic units have to offer. As Dr. Narula (ayurvedic) explained, “if there is an allopathic hospital, like Doon hospital, it is also integrated, you know? But the percentage of integration is not equal.” For example, if there are 100 allopathic doctors, there will only be two to four ayurvedic doctors.

In conclusion, as complex as the system of integration may be in its understanding, it is new in its formation. As Dr. Shroff stated, “integration is not
yet a system in India, except for in a few institutions.” Although integrated courses are not yet widespread in most of the northern institutions, proposals in favor of integration have been made by the Indian government in efforts to support AYUSH departments. Dr. Narula (ayurvedic) supported this statement, saying that “in India, there are policy makers who have [suggested] that Allopathy and Ayurveda must be integrated.” In light of this, the policy “all pathies under one roof” has been implemented in many of the larger allopathic hospitals in the northern state of Uttarakhand. As a member of the AYUSH unit at Doon hospital, Dr. Narula (ayurvedic) believes that it is the government’s aim to provide the patient with the choice—once they come to the hospital—of treatment they wish to take.

VI. Discussion

Based on my review of scholarly literature, integrative, complementary, and alternative practices tend to be portrayed as somewhat separate paradigms. Even though considered to be two distinctive practices, complementary and alternative practices are often lumped together and studied at the same time. While there are few studies that describe integrative treatments of diabetes in India, there are many studies that evaluate the different CAM treatments for DM2 in India. In a few of these studies, ayurvedic medicine is used in supplementing the biomedical treatment of diabetes, with a focus on the many different types of local plants and plant products that can lower blood glucose levels (Chacko 2003:1087). There are also many studies investigating how prevalent CAM is for diabetic treatment in India. In one study, the user rate of CAM in India is found to be 67.8%. Moreover, the most common reason (86.8%) for CAM use is reported as a desire for “early and maximum benefit” (Mehrotra et al. 2004:243). Given the widespread use of CAM in India, there are many studies that assess the clinical evidence supporting CAM interventions for improving glycemic control in DM2. Finally, there are also CAM studies who believe that the use of CAM might foster an integrative, participatory model of diabetes care that depends on provider knowledge of evidence-based therapies and patient admission to CAM use (DiNardo et al. 2012:749).

While the scholarly literature on CAM use in diabetic treatment is vast, few studies have explored integrative methods of treating DM2 in India. As integration remains the focal point of this thesis, the scholarly literature that does discuss integration in India, although outside the context of diabetic treatment, will be explored.

Following the same pattern that the data was presented in, this discussion explores areas of overlap and dissimilarity within the scholarly literature for the two following topics: how integration should occur and how integration actually occurs. However, unlike in my data, where the blurred distinction of the three schemas is acknowledged, the scholarly literature below only focuses on describing integrative practice.
How Integration Should Occur

Similarities in Scholarly Literature

Both the doctors of my study and those of the scholarly literature mentioned views on how integration should occur. Areas of resemblance between the scholarly literature and my data included: a need for physicians with equal training in each system; educating physicians on the advantages and limitations of each system; and Ayurveda adhering to the clinical paradigm of biomedicine.

Studies by Menon and Gawde describe the need for more instruction of both physicians and the community about Ayurveda and Allopathy. A study by Langford discusses the necessity for Ayurveda to follow the same clinical parameters as Allopathy. In conclusion, the question of whether it is possible to view Ayurveda through a scientific lens is explored. The studies of Bawane, Hankey, and Pal and used for this purpose.

In Menon’s study, the outlooks of the Ashtavaidya physicians in Kerala, India are examined. In this study, the Ashtavaidya physicians discuss the need of instructing the community about the basics of ayurvedic treatment. These physicians argue that a patient’s compliance is contingent upon their basic understanding of the circumstances in which traditional medicine, such as Ayurveda, and modern biomedicine can be effective. Moreover, they assert that patients “need to be educated about the risks and advantages of each system, like speed and efficacy versus issues of long-term side effects” (Menon 2010:249). In order for this to happen, the physicians treating these patients must be aware of the advantages and disadvantages of each system. Supporting this, Menon states that “physicians who understand the potential of both modern biomedicine and traditional therapies should assist patients to choose the most appropriate therapy” (Menon 2010:249). Although this form of integrated treatment is preferred, it requires the physician to be equally knowledgeable of both systems. Such physicians are hard to find, especially in northern India where the system of integration remains underdeveloped. Although acting at a local level, Dr. Joshi Deepak’s private practice seems to embody the paradigm of integrative medicine that the Ashtavaidya physicians are calling for.

Similarly to Menon’s study, a study by Gawde explains how influential a physician’s knowledge about the other pathy is in their use of integration. To improve the integrative practices of allopathic physicians, mechanisms to increase their knowledge of Ayurveda must be implemented. Gawde proposes that “the success of the new, ‘integrative’, approach [lies] in its capability to identify the respective values, beliefs, fundamentals, practices, strengths, and weaknesses of all the systems” (Gawde 2013:175). Using China as an example, Gawde describes how medical students are required to take courses in both
modern and traditional medicine and use their knowledge in practice. Because of this, Chinese physicians are able to recognize the pros and cons of both medical systems and decide the most effective integrated course of treatment.

It is common truth that the attitudes and beliefs of physicians have a strong influence on the way they practice medicine. Correspondingly, the extent to which integration occurs is largely subject to the attitudes of allopathic physicians. For these reasons, Gawde’s study presents several suggestions to improve the “knowledge, attitude, and practice” of allopathic doctors toward Ayurveda. First, as the subject of pharmacology has been added to the BAMS (Bachelor of Ayurvedic Medicine and Surgery), the same should be included in the 2nd year MBBS (Bachelor of Medicine, Bachelor of Surgery) syllabus of allopathic practitioners. Moreover, in internship, allopathic doctors should have an orientation program where practical guidelines for using ayurvedic therapy are given. A final suggestion provided in Gawde’s study is the arrangement of routine CMEs (Continuing Medical Education), where “in a disease-specific platform experts in Ayurveda should be called to speak on the same domain.” In large, the overall benefit of the patient is dependent on the “optimal balance and evidence-based use of both systems” (Gawde 2013:180). In order to achieve this goal, far more research studying integration is required.

In a study by Langford, the inner workings of Ayurveda are explored through the perspectives of three distinctive ayurvedic practitioners and the required use of clinical parameters in Ayurveda is mentioned. In this study, one of the ayurvedic practitioners makes the case that the success of integration relies on ayurvedic practitioners embracing the experimental method. Ayurvedic principles “remain to be proven through experimentation and precise empirical measurement” (Langford 1995:347). Langford’s study also raises the question of whether it is possible to understand Ayurveda through the same scientific lens of biomedicine. In our study, Dr. Deepak Joshi proves that it is possible, arguing that it is his scientific knowledge that has allowed him to develop deep faith in the ayurvedic system. As a result of his conviction, he has shaped his treatment around the ayurvedic principles, while still using the modern medical tools to check the clinical parameters and treat extreme cases.

A big barrier in the integration of Ayurveda and Allopathy seems to be the lack of understanding and trust on the part of allopathic practitioners in ayurvedic principles and consequently, ayurvedic treatment. The need for more research to validate Ayurveda was mentioned by many of the physicians in our study. However, none of the physicians in this study discussed the possibility of researching ways in which ayurvedic theories could be translated into biomedical terms. While such research would still be used to legitimize Ayurveda, it could also show that the ayurvedic teachings do not need further scientific research to be proven effective. It is not the ayurvedic teachings that need to evolve, but the way in which the physicians who have not been appropriately trained in the ayurvedic system interpret them. Although perhaps unbeknownst to the doctors
of this study, efforts have been made to decode Ayurveda on a purely scientific platform. The studies of Bawane, Hankey, and Pal explain Ayurveda using the theories of quantum physics, contemporary biology and physical chemistry, and bio energy.

Depicted as being the “highest form of science available to mankind”, a study by Bawane found the laws of quantum physics to provide a clearer understanding of the ayurvedic processes of healing (Bawane 2012:245). Broadly stated, Bawane’s study showed that:

*Each and every particle in the universe is in a state of constant movement in the form of vibrations occurring at a particular frequency. Similarly in the body, these vibrations occur. Each and every tissue in the body has its own set of frequencies, which helps it differentiate itself from the other tissues in the body structurally and functionally. Any imbalance in this results in the change of state of the 3 major categories of reactions found in the cell—anabolism, catabolism and transformation that ultimately results in formation of diseases. Treating these imbalances of frequency in the correct way by increasing or decreasing any of the 3 processes and tapping into the body by various routes to make this happen is the basic principle of Ayurveda (Bawane 2012:245).*

Similarly to Bawane’s study, a study by Hankey also probed the ayurvedic principles through a scientific lens. In his study, Hankey used theories of contemporary biology and physical chemistry to explain the three *doshas* and their functioning. Among other ideas in this study, Hankey explained that “Ayurveda’s doshas can be identified as regulatory control factors for fundamental physiologic processes in living systems that maintain their identity throughout biologic history” (Hankey 2011:573). In addition, it was found that the “description of varying states of health and disease given in ayurvedic etiology is related to the format of phase transitions in irreversible thermodynamics” (Hankey 2001:567). Relating to medicine, the notion that phase diagrams can be used to describe the states of health could lead to new discoveries in the classification of pathologies acknowledged by both biomedicine and other systems of complementary medicine. Moreover, such propositions could also lead to newer approaches in therapy for certain conditions.

A last example through which Ayurveda is scientifically justified is presented in Pal’s study that investigates Ayurveda’s Tridosha theory. In this study, the “current notions of bio energy” are correlated with those indicated by the three *doshas*: *vaya*, *pitta*, and *kapha* (Pal 1991:154). Pal broadly categorizes bio energy into three components: (1) Force equivalent to function relating to Central Nervous System, corresponding to *vaya*, categorized as “v”; (2) Force equivalent to functions relating to metabolism, corresponding to *pitta*, categorized as “p”; and (3) Force equivalent to functions relating to hormones, corresponding to *kapha*, categorized as “k”. Pal further explains that, in order for life to maintain
its “rhythmic existence” without any change, these three forces must operate in a state of equilibrium. A “light deviation” from this equilibrium, with the potential of regaining balance, could lead to “illness or disease.” On the other hand, an “extreme or drastic deviation” from the equilibrium without the ability to retrieve balance, could lead to “extinction or death” (Pal 1991:155). Like Bawane and Hankey, Pal professes the need for more research to advance and illuminate his findings.

If further supported and proven to be true, the findings of all of these studies could greatly enrich the understanding of the processes of life, health, and disease. Moreover, the more comparative and integrative model analyses that are performed, the closer we will be to successfully integrating the systems of Ayurveda and biomedicine.

**Differences in Scholarly Literature**

Unlike in the scholarly literature, several physicians of this study described their belief in a conditional use of integration, dependent on the severity of the patient or location of the practitioner. Moreover, none of the physicians mentioned the prevalence of scholarly studies that scientifically justify Ayurveda, as the Bawane and Hankey studies do in the discussion.

**The Occurrence of Integrative Practices**

**Similarities in Scholarly Literature**

In regards to the topic of how integration is occurring, examples of patient-based, institution-based, and physician-based integration in the scholarly literature were similar to those of this study. However, as the classifications of unstructured and structured integration are less common in the scholarly literature, the integrative practices described here are not categorized under those titles. Rather, they are described under the categories of patient-based, institution-based, and physician-based integration. Likewise, the underlying themes of complementary and alternative medicine, that may be present in descriptions of integration, are not mentioned in the scholarly literature. However, although not explicitly verbalized, they may still be observed. With all of this in mind, the findings of my data and other studies will be compared in each of these three categories (patient-based, institution-based, and physician-based integration). The most common points of similarity among these three types of integration are: the prevalence of patient’s migrating from pathy to pathy or using the treatment of both, the predominance of ayurvedic colleges with integrated curriculums compared to biomedical colleges; the lack of integrated colleges in Northern India compared to the South; the high frequency of ayurvedic practitioners participating in integrative practices; and the variability that was described in the ayurvedic integrative practices.
Although the terms unstructured and structured are not used in the scholarly literature, it can still be implied that all patient-based forms of integration described in the following scholarly studies are unstructured, given their likenesses to my data. On the other hand, the forms of physician-based and institution-based integration described in the scholarly literature can be interpreted as a blend of structured and unstructured forms of integration. Though none of the doctors mentioned in the scholarly literature are dually trained in both systems, like Dr. Deepak Joshi, some of them do provide a consistent and pre-meditated integrative treatment. Moreover, compared to the ayurvedic physicians of my study, the ayurvedic physicians in the scholarly literature have more knowledge about Allopathy and are more active in their incorporation of biomedical tools and terminology in the treatment of their patients. In addition, the integrative practices on the part of allopathic physicians mentioned in the scholarly literature are described as unlawful and can therefore be interpreted as unstructured forms. In the same vein, some of the types of institution-based integration explained in the scholarly literature involve illegitimate integrated measures and can also be interpreted as unstructured. However, the majority of institution-based integration that is described in the scholarly literature is, in fact, structured.

1. Patient-based Integration

The doctors of my study and those of the scholarly literature mentioned the occurrence of patient-based integration. Similarly to my study, there was less information in the scholarly literature about this type of integration. Although more common, the prevalence of patient-based integration is harder to quantify, as it may go unnoticed by physicians a great majority of the time. This would explain why it is less frequently mentioned in the scholarly sources studying integrative practices. However, when mentioned, sources described patient-based integration as occurring when patients switch from one pathy to another, or concurrently seek the treatment of both.

The faith a patient has in the treatment they are using is also mentioned in the scholarly literature. When a patient loses faith in ayurvedic medicine, two different situations may occur. In one scenario, the patient is taking ayurvedic medicine and decides to switch to Allopathy. In the other scenario, the patient decides to supplement their ayurvedic treatment with Allopathy. The latter can potentially result in causing much more harm to the patient, as not all ayurvedic drugs are compatible with those of Allopathy. A study by Langford (1995) presents the opinion of an ayurvedic doctor in regards to the importance of patient faith. In Langford’s study, ayurvedic doctor, Dr. Shukla, explains that ayurvedic treatment of patients who take allopathic drugs “involves more trial-and-error since the specific effects (including toxicity) of these drugs are often unknown” (Langford 1995:353). Dr. Shukla is not trained in Allopathy and therefore does not have the ability to treat patients who are using allopathic drugs since he is not familiar with their “specific effects.” This example
demonstrates the point made by the ayurvedic and allopathic physicians of my study, that physicians must have equal knowledge and training in both pathies to efficaciously and safely provide integrated treatment. Moreover, given the challenge of treating patients who go back and forth between Allopathy and Ayurveda, Dr. Shukla explains his need to “test” his patients for their “faith in Ayurveda” (Langford 1995:353). If a patient does not pass his “test”, he will counsel his patient against ayurvedic treatment because “it will take more time and he doesn’t believe the patient will abide to it given their lifestyle” (Langford 1995:354). This reasoning is important and holds much truth as the efficacy of Ayurvedic treatment depends largely on a patient’s willingness and commitment.

2. Institution-based Integration

The occurrence of institution-based integration is also mentioned in the scholarly literature. Similarly to my data, the literature also describes institution-based integration to be occurring primarily on the part of Ayurveda. As explained in Nisula’s (2009) study, integrated measures are taking place in ayurvedic colleges in the south of India, where the policy of integration is far more developed compared to northern India. Such findings correlate with my data, as physicians in my study also touched on the greater prevalence of ayurvedic colleges with integrated curriculums as well as the shortage of integrated colleges in the north compared to the south. According to Nisula, with courses in biomedicine becoming integrated in ayurvedic curriculum, college-trained ayurvedic students are learning the principles of biomedicine and growing accustomed to biomedical concepts and instruments. As a result, the ancient ayurvedic topics of physiology and nosology are being replaced with those of biomedicine (Nisula 2009).

3. Physician-based Integration

Similarly to my data, the scholarly studies describe integrated practices to be occurring primarily on the part of the ayurvedic practitioners. The occurrence of integrative practice among ayurvedic practitioners is mentioned in the studies of Verma (2007), Nisula (2006), Ernst (2004), and Langford (1995).

In Verma’s study, the prevalence of allopathic drug prescription in Ayurveda is described. On the other hand, the studies of Nisula, Ernst, and Langford serve to portray the variability that occurs in ayurvedic integrative practice. As a whole, all of these studies represent the strong correlation of my data and scholarly literature.

In Verma’s study, the prescribing pattern of an allopathic and ayurvedic hospital is compared. The results of this study show that the prescriptions in the allopathic hospital contained “88% allopathic and 12% ayurvedic drugs” (Verma 2007:52). On the other hand, “58% of the prescriptions” in the ayurvedic hospital were found to be allopathic drugs prescribed by ayurvedic practitioners (Verma
Similarly to my data, Verma reveals that ayurvedic practitioners are frequently engaging in integrative practice. Furthermore, while supporting the notion that ayurvedic doctors more commonly prescribe allopathic drugs compared to allopathic doctors who prescribe ayurvedic drugs, Verma’s study also indicates the popularity of cross-path practice among both qualified allopathic and ayurvedic practitioners.

The varying forms of ayurvedic integrative practice are discussed in the studies of Nisula, Ernst, and Langford. Nisula’s study describes the use of biomedical tools, such as stethoscopes, in the clinics of ayurvedic physicians in Mysore, India. A study by Edwards describes an ayurvedic doctor from Nepal who is an advocate of integrated medicine. He uses “Allopathy to save the life, [and] Ayurveda to prolong the life,” while also expressing his belief that everything he does is based off Ayurveda, as it is the “knowledge of life” (Edwards 2009:295). The variability of integrative practice occurring among ayurvedic physicians is further discussed in Langford’s study, through the descriptions of three different doctors (Dr. Karnik, Vd. Sharma, and Dr. Shukla). While Dr. Karnik affirmed his frequent use of modern diagnostic tools, Vd. Sharma warned that modern diagnostic tools would not always provide a correct portrayal of a patient’s condition. He additionally stated that “he [would] ‘accept what the patient says’ over the results of modern tests” (Langford 1995:337). Furthermore, in prescribing allopathic medicine, Vd. Sharma explained his consideration of the climate and its affect on treatment. For example, while antibiotics can be used in a moist climate, they may not be necessary in a drier climate. In explanation, Langford stated the following:

Antibiotics are understood, like all medications, not only according to their specific effect but according to more general properties that participate in a vast organization of rasa, translated as taste, savor, or juice, and guna, translated as quality…. treatment, therefore, is very much a matter of orchestrating or directing a flow of savors and qualities through the cosmic and somatic terrains. (Langford 1995:338).

In this explanation, the blend of Ayurveda and Allopathy is clearly visible. While profiting from the efficacy of allopathic drugs, Vd. Sharma’s treatment retains the values of Ayurveda. These ayurvedic values serve the purpose of ensuring that the allopathic drugs are given in the most optimal conditions and therefore can be rendered most effective and impose the least harm. The third doctor in Langford’s study, Dr. Shukla, also relies heavily on modern diagnostic tests. However, he also prioritizes his conversation with his patients. In addition to his holistic diagnostic approach, Dr. Shukla comfortably speaks the languages of both biomedicine and Ayurveda. Similarly to how Dr. Sarvaiya (ayurvedic) had translated certain ayurvedic classifications of diabetes into biomedical classifications, Dr. Shukla translates ayurvedic disorders into allopathic disease categories. His ability to do this demonstrates his true understanding of both
systems and henceforth, his faculty to integrate in a way that is most beneficial to his patients.

The variability of ayurvedic integrated practice that is demonstrated in the studies of Nisula, Ernst, and Langford was similarly depicted by the ayurvedic physicians of my study. More specifically, the viewpoints of Vd. Sharma and Dr. Shukla strongly resembled those of Dr. Deepak Joshi (dual), as all three doctors commented on their combined use of allopathic and ayurvedic healing methods.

**Differences in Scholarly Literature**

Differences between the scholarly findings and my data were noted in both physician-based and institution-based integration. Major differences that were apparent in the scholarly literature but not in my study included high rates of allopathic practitioners using ayurvedic treatment as well as changes occurring in ayurvedic hospitals and pharmaceuticals.

While the majority of allopathic physicians in my study denied using ayurvedic treatment, the scholarly literature shows different results. Studies by Gawde (2013) and Cameron (2010) demonstrate the frequency of allopathic integrative practice. As explained in Gawde’s study, the rates of allopathic residents prescribing ayurvedic drugs are so high that there is a need for the government to create more stringent laws to prevent this from happening. In the same vein, a study by Cameron comments on the paradox that occurs, when allopathic practitioners criticize ayurvedic practitioners for prescribing allopathic medications, when they themselves prescribe ayurvedic drugs. Cameron further maintains that “many biomedical doctors do, indeed, use and prescribe ayurvedic medicine for their families and their patients, including high-level administrators in the Ministry of Health” (Cameron 2010:57).

Moreover, the types of institution-based integration occurring within ayurvedic hospitals as well as ayurvedic pharmaceutical companies described in the scholarly literature were not mentioned in my data. A study by Edwards describes the integrative practices that are occurring in an ayurvedic hospital in Nepal, whereas studies by Nisula, Menon, and Bode explain the changes occurring in the ayurvedic pharmaceutical company as a result of institution-based integration.

Edwards’ (2009) study on a Naradevi hospital in Nepal mentions the use of biomedical tools and terminology in ayurvedic practice. In his review of the ayurvedic hospital, Edwards comments on the speed of the consultations, use of biomedical diagnostic tests, presence of stethoscopes and white coats on every physician’s and intern’s neck, lack of traditional ayurvedic diagnostic rituals (i.e. pulse reading or tongue examination), and lack of ayurvedic terminology in naming diseases, except on occasion when no other biomedical diseases fit the criteria (Edwards 2009). The overarching point is made that while not totally
forgotten at the hospital, “ayurvedic understandings are largely overlooked in favor of biomedical ones.” Rather, “like an old, rusty tool, they lie and wait for the moment when they may be found useful again” (Edwards 2009:292).

On the other hand, Nisula’s (2010) study elucidates the integration occurring in the health market, where the ayurvedic industry is conforming to the market strategies of multinational and national pharmaceutical companies in order to remain competitive. The studies of Menon (2010) and Bode (2006) further explain that because of the slow-acting nature of ayurvedic drugs, ayurvedic medicine must change to fit the biomedical norms in order to remain competitive. According to Menon’s study, on the Ashtavaidya (ayurvedic) physicians of Kerala, such changes are a result of the increasing push for Ayurveda to conform to the norms of modern biomedicine (Menon 2010). While already facing less credibility in the eyes of its opponent, ayurvedic medicine is in danger of losing the faith of its clientele, given the slow acting nature of its products. Menon’s study supports this point, stating that “in general, traditional ayurvedic therapies, because of the types of procedures and formulations used, require more time to manifest their beneficial effects” (Menon 2010:249).

These physicians also share their opinions on biomedicine. They state that “purified single molecule drugs used in biomedicine are effective within a shorter period of time, and for certain illnesses biomedicine is the only effective therapy” (Menon 2010:249). Unlike biomedical drugs, where a quick result is usually attained, traditional ayurvedic drugs necessitate far more patience on the part of the patient. Similarly to Menon, Bode explains how time consuming and uncomfortable it can be to take traditional formulas. To make up for this, ayurvedic manufacturers construct their “best selling brands in modern dosage forms such as coated tablets, blister packed capsules, and syrups.” Bode’s study further explains that such “high tech products” have substituted the traditional forms of ayurvedic medicine, such as “bitter decoctions (kashaya)” or “crude powders (churna)” (Bode 2006:230). In the efforts of staying on par with biomedicine and “ensuring compatibility with modern consumers”, ayurvedic medicines have been transformed into “convenient and palatable commodities suiting the fast life-styles of today” (Bode 2006:230). Once transformed, ayurvedic brands have become a hybrid of the two systems, being traditional and modern at the same time.

VII. Conclusion

Both ayurvedic and allopathic physicians in this study shared positive and negative views about integration. Ultimately, it was found that only the dually-trained Dr. Deepak Joshi was enthusiastic about integrative practice. Among the other physicians, the ayurvedic physicians were more likely to integrate given their more positive appreciation while acknowledging the shortcomings of each system. Comparatively, the allopathic physicians were more focused on issues of validity within ayurvedic practice, inhibiting their desire to integrate. While no
other studies in the scholarly literature discussed integration in the context of diabetic treatment, areas of overlap between my data and other scholarly studies pertaining to patient-based, institution-based, and physician-based integration were still found. Furthermore, the categories of unstructured and structured integration can be used to interpret the described forms of integrative practice in the scholarly literature.
Chapter 5: Final Conclusions

I. Findings

The main findings of this study are divided into four categories: (1) how DM2 is described, classified, and treated by ayurvedic physicians, allopathic physicians, and dually-trained Dr. Deepak Joshi; (2) how these physicians compare in their perceptions of Ayurveda and Allopathy; (3) how these physicians compare in their viewpoints on integration; and (4) the types of integrative practice that occur within structured and unstructured integration. The findings of the first two categories are represented in the tables below, whereas the findings of the third and fourth category are portrayed as overall trends that were observed.

How DM2 is Described, Classified, and Treated

<table>
<thead>
<tr>
<th>Type 2 Diabetes Mellitus (DM2)</th>
<th>Description</th>
<th>Classifications</th>
<th>Treatment</th>
</tr>
</thead>
</table>
| **Ayurveda**                   | *Prameha* (pre-diabetes), which can lead to *madhumeha* (diabetes mellitus), occurs when all three *doshas* become imbalanced. A high caloric diet will impair the *kapha* and *pitta doshas*, corrupt the body tissues, and impair the *vata dosha* causing the digestive fire of the body (*Agni*) to be expelled in the urine. | 1) *Prameha* is classified into 20 different types, each resulting from the interactions of the three *doshas* and 10 *dushyas*. All of these types are caused by either heredity factors or a harmful lifestyle including unhealthy eating habits and mental thinking.  
2) *Prameha* is also classified as congenital or acquired.  
3) *Prameha* and *madhumeha* are also classified into body categories (thin and lean or obese).  
4) *Madhumeha* is also classified as curable, incurable, or relying on lifelong treatment. | -Lifestyle and diet changes must happen first. Increase amount of exercise, meditation, and yoga.  
-Sanshodhana (a purification treatment involving *Panchakarma* therapy) *Sanshaman* therapy (use of medicines), and *snehan* (oilation) therapy.  
-Ayurvedic medications. |
| **Allopathy**                  | Chronic disease with high levels of sugar in the blood. Sugar cannot be used because either the cells do not respond to insulin normally, the pancreas does not make enough insulin, or both. | Four main types of diabetes mellitus: 1. DM1, 2. DM2, 3. Other specific types of DM, and 4. Gestational DM.  
DM2 is caused by a combination of genetic and nongenetic factors, such as increasing age, high caloric intake, overweight, sedentary lifestyle, and low birth weight, that result in insulin resistance and insulin deficiency. | -Oral hypoglycemic drugs initially, then the use of stronger oral drugs, and then insulin if no improvement.  
-Discontinue high carbohydrate, high caloric diet.  
-Maintain a regular exercise regime. |
Physician Perceptions of Allopathy and Ayurveda  
(Complementary/Alternative schemas may be observed)

| Similarities and Slight Differences* in Physician Perceptions |
|----------------|----------------|
| **Strengths** | **Weaknesses** |
| Ayurveda       |                   |
| -Focus on preventative care and treatment of chronic illness. | - Slow acting nature of drugs. |
| -Individualized and holistic treatment. | - Issues of validity. |
| -Ayurvedic medicine having a long-term effect and lack of harmful side effects. | - Lack of research proving efficacy of drugs. |
| Allopathy      |                   |
| -Well researched and evidence-based methods. | -Heavy reliance on blood sugar level. |
| -Research leading to development of new drugs. | -High medical costs of medication. |
| -“Holistic” treatment. | -Harmful side effects of medication. |
| -Acute treatment. | -Incomplete treatment of diabetes, allowing side effects of disease to continue. |

*Slight differences are described in the footnotes.

1 Dr. Ghanchi (allopathic) states, “Ayurveda does well for chronic disease, provided the doctor is well-versed.” Such a comment represents his distrust of ayurvedic practitioners and their treatment practices, even in the context of chronic illness.

2 Unlike many of the allopathic doctors, Dr. Sarvaiya (ayurvedic) believes that more research is needed not for the purpose of validating Ayurveda but to improve the way it is understood by those with no ayurvedic training.

3 Unlike the other ayurvedic doctors who also comment on the rising costs of ayurvedic drugs, Dr. Shroff (allopathic) explains that ayurvedic drugs are becoming more expensive because they are taking the form of allopathic drugs, such as capsules or tablets.

4 Although not mentioned by other allopathic physicians, Dr. Singh (allopathic) states that the allopathic treatment of the blood sugar does not prevent the body from experiencing other detrimental side effects of the diabetes. Therefore, although perhaps holistic in its diagnosis, Allopathy may not be so complete in its treatment.

5 Dr. Rajat (ayurvedic) explains that many allopathic doctors are not providing their patients with adequate guidance for taking the medication they prescribe. They are not adequately explaining to their patients how their diet and exercise routines will affect their medications. This contradicts the previously mentioned “holistic nature” of Allopathy.
**How Physicians Compared in their Viewpoints on Integration**

It was found that the majority of the doctors had little knowledge about how integration is actually viewed by the Indian Ministry of Health and Family Welfare. The strong governmental support of AYUSH that is mentioned in the beginning of this study was not commented on by any physicians. This portrays not only a lack of knowledge regarding integration but also a lack of interest about the other system.

Despite having created categories for how integration occurs (structured and unstructured), the majority of the physicians of my study had little knowledge about integration and many were not in favor of it. Upon analyzing the data on a finer level, it was revealed that many of the discussions about integration were in fact discussions about complementary or alternative medicine. The descriptions of these three schemes in the CAM literature seemed to blur together in this study, rendering integration even more complex and difficult to understand, as its description sometimes morphed into being complementary or alternative.

Although more likely to integrate, the ayurvedic physicians presented several conditions that they believed were more fitting for integrative practice. Allopathic physicians listed similar opinions, agreeing that clinical parameters were needed in integration to regulate the use of Ayurveda. The value of integration was highlighted in emergent situations, such as in rural areas where ayurvedic practitioners had no choice other than to use the allopathic remedies. Although described as being integrative, many of these conditions were in fact observed as also being complementary.

Furthermore, while at first it was thought that the negative perceptions physicians had about integration were exclusively a result of their lack of knowledge and training in both systems, another explanation may be that these physicians are not describing an integrated relationship of the systems but rather, seeing the systems as alternative to each other. This would explain their reluctance to use both systems at the same time and lack of knowledge about doing so. The need for more education about Ayurveda and Allopathy was also mentioned by the physicians and is supported in the policies of the Indian government. To conclude, by analyzing physician perspectives regarding integration we have a better understanding of why two forms of integration exist, as well as why integration is so difficult to understand and study. Only those physicians who have been trained in both systems and have dual knowledge can provide the kind of structured integrative practice we observe to occur in Dr. Deepak Joshi’s private clinic, also being the kind that cannot easily be confused with complementary or alternative schemes.
The Structured and Unstructured Occurrence of Integration

Within these two forms of integration several trends were observed. It was found that structured integration involved a comprehensive understanding of both systems as well as a presence of resources of both systems within institutions. On an even finer level, it was deduced that while at times morphing together, the structured integration that Dr. Deepak Joshi provides remains fundamentally different from the practices observed within complementary and alternative schemas. Within unstructured integration, the patient-based integration was described as being less evident, given its individualized occurrence, and uncontrolled. While many physicians in this study did not mention patient-based integration, it is a very common form of integration that can result in harm to the patient, especially if their physician is not aware of it. Likewise, the unstructured physician-based integration that occurs is also hazardous. Since physicians are not yet mandated by the law to take integrated courses in order to prescribe drugs from other medical systems, they are putting their patients at risk. By prescribing medications that they have not been trained to prescribe, the likelihood of malpractice increases substantially. Moreover, both physician-based and patient-based unstructured integration incorporate themes of complementary medicine. One of the main reasons that physicians and patients decide to use the other system is because they are aware of its unique strengths. They will therefore use it to complement the other system and “fill in” its gaps in a haphazard and unstructured way.

II. Implications

Scholarship Implications

This study uses the schemas of integrative, complementary, and alternative medicine to draw parallels among its findings and understand integration on a finer level of analysis. It was revealed that the themes of integrative and complementary medicine tend to morph together, whereas alternative medicine remains distinct. The blurry distinction between integrative and complementary medicine also explains the complexity of unstructured integration. Overall, there is a lack of information in the scholarly literature regarding the parallels of integrative and complementary practice and it is this lack of information that makes it difficult to understand what the term integrative practice truly means.

Aside from these schemas, the way that integration is described in the scholarly literature is also different. Unlike this study, where integration is described as being both structured and unstructured, a great deal of the scholarly literature about integration examines it through the context of a standardized system, although such as system is not yet the case in India. Though laws have been passed allowing physicians to prescribe medications from other systems of medicine, a controlled and regulated use of integrative practice is rare. In fact, in
certain ways, the laws allowing cross-pathy practice to occur have created even more chaos. There are even more ayurvedic practitioners prescribing allopathic medications now, even though they lack the training to do so. The government allowance of cross-pathy practice has sparked a great deal of controversy among allopathic physicians who strongly believe that ayurvedic physicians should not be allowed to prescribe allopathic drugs.

The viewpoints of the physicians in my study find common ground with the scholarly literature, both agreeing that the integration of ayurveda and allopathy requires a basic understanding of their fundamental ideas along with their advantages and limitations. And yet, in the majority of the integrative practices that are discussed in this study, these conditions are not met. Resultantly, the integration that does occur is potentially hazardous, as physicians are treating their patients with drugs that they are not fully knowledgeable about. This contrasts with the envisioned beneficial outcomes of a systematized integration described in the scholarly literature, such as providing affordable and accessible health care.

Findings of this study reveal that the predominant form of integration that is occurring, i.e. unstructured integration, is fraught with many issues and is perceived negatively by many physicians. Scholarly implications of this study include a need for a closer analysis and quantification of the ways that unstructured integration is occurring, as many of the integrative practices, particularly on the part of patients, slip under the radar. In order for the systematized integration that is described in the scholarly literature to ever become feasible, the tumultuous integration that is currently transpiring needs to be addressed.

Practical Implications

In light of the potentially harmful effects of unstructured integration and the valuable outcomes of structured integration, implications include a need for more dually trained physicians. In order for this to happen, more integrated courses within both ayurvedic and allopathic colleges are needed. Not only would these courses expose both ayurvedic and allopathic medical students to the principles of each system but would also create an understanding of the advantages and disadvantages of each, wherein the value of integrative practice would be established. Integrated courses in the allopathic colleges could also inform the students of those ayurvedic treatments and drugs that have been scientifically validated. Moreover, while teaching about the distinct principles of each system, these integrated courses could also incorporate areas of commonality between the systems or where translation could be feasible. Additionally, to prevent the misuse of cross-pathy practice and occurrence of physician malpractice, stricter regulations should be instated by the governments of each state to prevent physicians who have not been dually-trained from practicing. The requirement of
dually-trained certifications among all health care centers could also be mandated.

The adoption of these measures could result in a systematized integrated use of both systems. While this would resolve many issues of malpractice and harm that had stemmed from physicians not being adequately trained in both systems, it may also have an irreversible effect on the system of Ayurveda. Changes in Ayurveda, observed in the production of pharmaceuticals and treatment provided by ayurvedic practitioners, have already occurred. Such changes are largely due to the long term co-existence of the two systems as well as the dominance of Allopathy in India. In order to remain competitive with Allopathy, not only are ayurvedic physicians resorting to using the modern medical tools and terminology in their practice but ayurvedic pharmaceutical companies are constructing ayurvedic drugs in modern forms, such as coated tablets. These changes are blurring the line that distinguishes allopathic from ayurvedic treatment, making cross-pathy practice even more feasible. Moreover, in the dawn of a systematized integrative practice, a new form of Ayurveda is emerging, one that only involves medications that have been proven valid by modern science, that has been rendered translatable into modern medical terminology, and that requires the use of the modern medical tools. Relating to this, ayurvedic physician, Dr. Karnik, from Langford’s (1995) study, asserts the following:

*It is impossible to follow the Ayurvedic precepts of life in the contemporary world... When [asked] if any fundamental principles of Ayurveda can be followed, Dr. Karnik discusses the changed environment, the prevalence of pollution, the non-circadian rhythm of modern schedule...* (Langford 1995:344).

As portrayed in Dr. Karnik’s comment, it is not just the integration of Ayurveda and Allopathy that is causing Ayurveda to change but also the integration of western culture and overall influence of globalization. In summary, Dr. Karnik makes a final comment, a comment that accurately illustrates the influence Allopathy has had on Ayurveda. Langford asks Dr. Karnik if dosage should differ according to *prakarti*, a question invoking a powerful ayurvedic principal. Dr. Karnik smiles and responds with a parable:

*If he is having 15 guests over for dinner he asks his cook to make a meal. The cook will make a meal suitable for all 15 guests despite their differences. ‘There is something like common food. There is something like average. Differences are very minute.’*

In response to this, Langford tells Dr. Karnik “that many vaidyas have told [her] that the dosage definitely must be different according to prakarti.” Dr. Karnik smiles again and responds to Langford, “My common person [the cook], he has common sense.”
From this parable, it can be interpreted that Dr. Karnik believes that certain allopathic practices have more “common sense” than those of Ayurveda. In other words, they are simpler and yet more effective than ayurvedic practices. Similarly to how the cook decides to make the same meal for all 15 guests, allopathic practitioners frequently prescribe the same drugs to multiple patients. The “common food,” in this case, becomes equivalent to the “common medicine.” It is easier for the allopathic physician to prescribe similar medications to many people, just as it is easier for the cook to make one big meal for all of his guests, instead of making a different meal for each person. Dr. Karnik’s parable represents the shift that has taken place, as increasing numbers of ayurvedic practitioners are adopting the allopathic methods and leaving their ayurvedic values behind, similar to concerns about Chinese Medicine’s changes in interaction with biomedicine (Shea 2006). Although such trends can be interpreted as the beginnings of an integrated system in India, they also represent the perhaps inevitable transformation of Ayurveda. Similar to integration, the complementary paradigm also has its downsides as it can undermine Ayurveda’s legitimacy in curing and not just preventing illness. Moreover, when viewed as an alternative system, Ayurveda is also demeaned because biomedicine is more powerful and in control of what is deemed as legitimate. In other words, in simply being compared to biomedicine, Ayurveda is at risk of marginalization.

III. Limitations

Several limitations to this study need to be acknowledged, particularly those pertaining to the study of integrated practice. In part, the challenge of studying integration was due to the complexity of the term and its meaning as well as integration not yet being a standardized system in India. Moreover, the regional contextualization of integrative practice also affected the results of this study, as the occurrence of integrative practice was perceived to be less prominent in northern India compared to the south. Additionally, as this study did not involve large numbers of integrative practices, it was not able to inquire how integrative practices might have changed over time, especially in light of the rising influence and dominance of biomedicine in India. Furthermore, as this was only an interview-based study, it is possible that participant observations might have shown more allopathic practitioners using ayurvedic treatment, even though they did not want to emphasize it. Moreover, as the scholarly literature reveals that some allopathic practitioners do use Ayurveda, the question then becomes whether the physicians of my study truly did not use Ayurveda at all, or if they just denied doing so.

The poor rapport that was observed between allopathic and ayurvedic physicians made the task of studying integration even more difficult, as physicians were less enthusiastic about discussing the other system as well as an integrated use of it. Likewise, the limited information physicians offered about the treatments or principles of the other pathy, also made the study of integration
difficult. Dr. Deepak Joshi was the only physician of the study to have a dual training and consequently full understanding of the treatments and principles of both Ayurveda and Allopathy. As his was the only structured form of integrated treatment in this study, a comparison of other structured forms of integration was not possible.

Furthermore, the potential for miscommunication and misinterpretation is also acknowledged in this study. As is the case in all research with cultural differences, the possibility of miscommunication with the interviewees must be considered. Although all interviews were conducted in English, given that English was not the native tongue of all of the interviewees, there is the chance that some miscommunication occurred during the discussions with the physicians. Moreover, there is also the chance that some of the opinions of the physicians regarding issues discussed in this study were also misinterpreted. Certain speech acts, such as tone of voice or facial expression, of the physicians were at times very subtle and may have been missed or incorrectly perceived. Furthermore, there were other instances where the reason behind a physician correlating aspects of Ayurveda and Allopathy was unclear. In other words, it was not always evident whether the associating information was being given for the purposes of translation or legitimacy.

In conclusion, a restraint of time in Uttarakhand served as another limitation. Since I had only one month to conduct interviews with the physicians, I did not have enough time to conduct more than 11 interviews. Moreover, this was also the reason that only one rural doctor was studied. Although this study had not set out to compare the practices of rural and urban doctors, the lack of variety among the physicians may have accounted for the lack of integrated practices seen to occur.

IV. Recommendations for Future Research

Due to the small sample size of this study, a more extensive study could be conducted for a better understanding of the differences in perceptions and treatment methods of DM2, collecting interviews from a greater number of allopathic and ayurvedic doctors. Similarly, a bigger sample size could result in finding more dually-trained physicians.

Another point of interest would be to investigate whether biomedicine has artificial thresholds for diseases that are too high. More specifically, to investigate prameha (pre-diabetes) in Ayurveda as a threshold for curative intervention in medicine. Also, given Ayurveda’s effectiveness in prevention, more research could also be done investigating Ayurveda’s value in treating pre-diabetes.

It would also be interesting to investigate more thoroughly the varying perceptions of physicians from both systems in regards to the effectiveness of integration in treating DM2. Additionally, it would be beneficial for a future study
to compare the perceptions of dually skilled doctors towards integration and their integrative practices.

Further research might also explore how physicians see the implications of integrated medical practice for treatment efficacy, accessibility, affordability, and equity for patients. Another possible area of future research would be to investigate the perceived upsides of integration (e.g., extending the legitimacy of Ayurveda through association with biomedicine), as well as the reported downsides, such as the watering down or using out of context of either treatment modality, poly-pharmacy problems with double prescription and unanticipated drug-herb interactions, or threats to the legitimacy of Ayurvedic medicine by becoming overshadowed by its “partner” biomedicine.

Future studies should also inquire about the integration occurring in the Indian diaspora and how it may relate to the integration occurring in India. Is it more prevalent, systematic, or stigmatized by allopathic physicians in other countries? The integrative practices occurring in different regional contexts of India should also be compared for the purposes of explaining why integration may be more adopted or prevalent in certain areas of the country and less so in others. Likewise, studies comparing the integrated practices of physicians in rural areas compared to urban areas should also be explored. Finally, to provide a different perspective on how integrated practices may occur or be valued in India, studies might consider using a different disease or medical issue as their focal point. A further analysis of how, when, where, and why complementary and alternative medicine takes form is also recommended, especially in light of the strong parallels found to exist between complementary and integrative practice in this study.

Lastly, given the influence of physician perception about the other system on their ability or desire to integrate, studies should continue to evaluate the perceptions of physicians on Ayurveda and Allopathy in the context of integrative practice, as well as within complementary and alternative practice.
Appendices

Appendix A- Allopathic practitioner interview questions

1. How long have you been practicing Allopathy?
2. Did you receive any ayurvedic training as part of an integrated course in school?
3. Why did you decide to pursue Allopathy?
4. What is your opinion on Ayurveda in the treatment of DM2?
5. Do you ever refer your patients to Ayurveda? When and why?
6. Do you ever prescribe ayurvedic medicine? When and why?
7. Are you currently treating any Type II diabetic pts?
8. If so, what types of treatments are they receiving?
9. Do you see a lot of patients using injectable insulin?
   a. Do these patients wish to discontinue using injectable insulin?
10. What diagnostic measures do you use?
11. Are your patients using ayurvedic medicine or receiving ayurvedic treatment?
12. Did they ever receive ayurvedic treatments in the past?
13. Why are they using Allopathy now?
14. Are your patients trying to discontinue their use of allopathic medicine?
15. What are the most common diabetic complications that patients seek treatment for? Are there any complications that allopathy is unable to effectively treat?
16. Do you think Ayurveda is better at treating chronic illnesses (such as DM2)?
17. What are the strengths/weaknesses of Allopathy? Of Ayurveda?
18. What do you think needs to be done to make Ayurveda more widespread?
   a. More research?
   b. More standardization?
19. Do validity threats exist?
20. Can biomedicine be used to validate Ayurveda? How so?
21. Is Ayurveda a more accessible/affordable means of treatment for DM2?
22. What is your perception of the integration of Ayurveda and Allopathy? How and when should integration be occurring? Why should integration occur? Is integration beneficial for both systems of medicine? Why?

Appendix B- Interview questions for Ayurvedic doctors

1. How long have you been practicing Ayurveda?
2. Did you receive any allopathic training as part of an integrated course in school?
3. Why did you decide to pursue Ayurveda? What is your opinion on Allopathy in the treatment of DM2?
4. Do you ever refer your patients to Allopathy? When and why?
5. Do you ever prescribe allopathic medicine? When and why?
6. Are you currently treating any Type II diabetic pts?
   a. If so, what types of treatments are they receiving?
7. What diagnostic measures do you use?
8. Are they using allopathic medicine?
9. Did they ever receive allopathic treatments in the past?
10. Why are they using Ayurveda now?
11. Are your patients trying to discontinue their use of allopathic medicine (if in use)?
12. What are the most common diabetic complications that patients seek Ayurveda for? Does Ayurveda provide a treatment that allopathy is unable to provide?
13. Do you think Ayurveda is better at treating chronic illnesses (such as DM2)?
14. What are the strengths/weaknesses of Ayurveda?
15. What do you think needs to be done to make Ayurveda more widespread? More research? More standardization? Do validity threats exist?
16. What are the strengths/weaknesses of Allopathy?
17. Could biomedicine be used to validate Ayurveda? How so?
18. Is Ayurveda a more accessible/affordable means of treatment for DM2?
19. What is your perception of the integration of Ayurveda and Allopathy? How and when should integration be occurring? Why should integration occur? Is integration beneficial for both systems of medicine? Why?

**Appendix C- Interview questions for Dr. Deepak Joshi (Dually-skilled)**

1. Are you equally trained in both Ayurveda and Allopathy? Where were you trained for each?
2. Why did you decide to become dually skilled?
3. Are you currently treating any Type II diabetic pts? If so, what types of treatments are they receiving?
4. How do you decide which treatments (allopathic versus ayurvedic) to use?
5. What types of investigation do you prescribe when you start ayurvedic or allopathic treatment?
6. What types of diagnostic techniques do you use?
7. Why types of integrated treatments do you provide?
8. Do you see a lot of patients using injectable insulin? Do these patients wish to discontinue using injectable insulin?
9. What are the most common diabetic complications that patients seek treatment for?
10. What are the strengths/weaknesses of Allopathy and Ayurveda? What do you think needs to be done to make both more effective in treating DM2?
11. How do Ayurveda and Allopathy work together to form the best treatment for DM2?
12. What is your perception of the integration of Ayurveda and Allopathy? How and when should integration be occurring? Why should integration occur? Is integration beneficial for both systems of medicine? Why?
13. Is DM2 particular in its compatibility for integrative treatment (if occurring)?
## Appendix D: Tables

### Table 1

**Classification of Prameha According to Dosha Predominance (20 types)**

<table>
<thead>
<tr>
<th>Name of prameha</th>
<th>Synonym in allopathy</th>
<th>Identification by urine characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Kaphaj prameha</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Udakmeha</td>
<td>Diabetes incipidus</td>
<td>Urine is cool, clear, water like sp. gravity, odourless, and frequent.</td>
</tr>
<tr>
<td>2. Ikshumeha</td>
<td>Alimentary glycosuria</td>
<td>Urine is cool, sweet, turbid, sticky, like sugarcane juice, and in excess.</td>
</tr>
<tr>
<td>4. Surameha</td>
<td>Acetonuria</td>
<td>Colour and smell of urine is like alcohol or acetone.</td>
</tr>
<tr>
<td>5. Pishatameha</td>
<td>Chyleuria</td>
<td>Urine is white in colour like rice water.</td>
</tr>
<tr>
<td>6. Shukrameha</td>
<td>Spermaturia</td>
<td>Semen like or sperm mixed urine.</td>
</tr>
<tr>
<td>7. Sitakameha</td>
<td>Lithuria</td>
<td>Minute sand like particles are present in urine.</td>
</tr>
<tr>
<td>8. Sheetmeha</td>
<td>Renal glycosuria</td>
<td>Urine is sweet and very cool suggesting low body temperature.</td>
</tr>
<tr>
<td>9. Shanermeha</td>
<td></td>
<td>Patient frequently passes small amount of urine slowly and without force.</td>
</tr>
<tr>
<td>10. Alalameha</td>
<td>Albuminuria</td>
<td>Urine is thread like and having picchil (sticky) consistency.</td>
</tr>
<tr>
<td><strong>Pittaj prameha</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11. Pisharmeha</td>
<td>Alkalinuria</td>
<td>Smell, colour, flavour, and touch of urine is like that of an alkali mixed in water.</td>
</tr>
<tr>
<td>12. Kalmeha</td>
<td>Indicanuria</td>
<td>Urine is like black ink in colour and warm.</td>
</tr>
<tr>
<td>13. Neelmeha</td>
<td>Indicanuria</td>
<td>Urine is blue in colour and acidic.</td>
</tr>
<tr>
<td>15. Majisthameha</td>
<td>Hemoglobinuria</td>
<td>Urine is smoky, blood coloured, and also smells like mango.</td>
</tr>
<tr>
<td>16. Raatmeha</td>
<td>Haematuria</td>
<td>Urine is red, warm, mango smelling, and also contain salts.</td>
</tr>
<tr>
<td><strong>Vataj prameha</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>17. Vasameha</td>
<td>Lipuria</td>
<td>Urine contains fats along with its colour, consistency, and smell.</td>
</tr>
<tr>
<td>18. Majjameha</td>
<td>Albuminuria</td>
<td>Urine contains albumin and bone marrow like substance. (Sarpimeha 'Sushruta')</td>
</tr>
<tr>
<td>(Sarpimeha 'Sushruta')</td>
<td></td>
<td></td>
</tr>
<tr>
<td>20. Ojomeha</td>
<td>Diabetes mellitus</td>
<td>Urine is sweet, pungent, yellowish, rough having high specific gravity.</td>
</tr>
</tbody>
</table>

*Note: According to Rishi Charaka, the glucose in urine of the patients of 'Ikshumeha' and 'Sheetmeha' is temporary and on decreasing sugar containing items in one's food, the disorder is completely cured. He stresses that 'ikshumeha and sheetmeha' are due to deformities in kapha dosha (humour) predominately and not the vata dosha.*

---

Table 2

Classification of Prameha on the Basis of Prognosis

<table>
<thead>
<tr>
<th>Dosh Predominance</th>
<th>Sadhya (Curable)</th>
<th>Yapya (Controllable)</th>
<th>Asadhyya (Difficult to manage)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Body Constitution</td>
<td>Kaphaja</td>
<td>Pittaja</td>
<td>Vataja</td>
</tr>
<tr>
<td>According to Physique</td>
<td>Obese</td>
<td>Acquired</td>
<td>Asthenic</td>
</tr>
<tr>
<td>Etiology</td>
<td>Acquired</td>
<td>Acquired</td>
<td>Hereditary (type 1 diabetes)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Acquired (advanced, insulin-dependent stage of type 2 diabetes)</td>
</tr>
<tr>
<td>Stage of Disease Process</td>
<td>Early/without complications</td>
<td>Acute, young adults</td>
<td>Chronic/advanced/ with complications</td>
</tr>
<tr>
<td>Clinical Manifestations</td>
<td>Mild hyperglycemia due to disturbed carbohydrate and fatty acid metabolism</td>
<td>Moderate hyperglycemia due to hyperadrenalism</td>
<td>Severe hyperglycemia due to hypoinsulinemia</td>
</tr>
</tbody>
</table>

Bibliography

Ahuja, MMS.  

American Diabetes Association (ADA)  
2009  Diagnosis and Classification of Diabetes Mellitus. Diabetes Care  

Barrett B, Marchand L, Scheder J, et al.  
2003 Themes of Holism, Empowerment, Access, and Legitimacy Define  
Complementary, Alternative, and Integrative Medicine in Relation to  
Conventional Biomedicine. The Journal of Alternative and Complementary  

Bawane VC, Gandhi MM.  
2012  Clinical Application of Quantum Physics in Ayurveda. International  

Bell IR, Caspi O, Schwartz Gary ER, et al.  
2002 Integrative Medicine and Systemic Outcomes Research; Issues in the  
Emergence of a New Model for Primary Health Care. American Medical  
Association 162(Jan 28):133-140.

Bernard, HR.  

Bode, M.  
2006  Taking Traditional Knowledge to the Market: The Comoditization of  

Boon H, Verhoef M, O’Hare D, Findlay B.  
2004  From Parallel Practice Integrative Health Care: A Conceptual Framework.  

Cameron, M.  
2010  Feminization and Marginalization? Women Ayurvedic Doctors and  
Modernizing Health Care in Nepal. US National Library of Medicine, National  
Institutes of Health (1):42-63.
Central Bureau of Health Intelligence: Ministry of Health and Family Welfare  
2013 National Health Profile.  

Chacko, E.  
2003 Culture and Therapy: Complementary Strategies for the Treatment of Type-2 Diabetes in an Urban Setting in Kerala, India. Social Science and Medicine 56(5):1087-1098.

Chaudhary P, Demitrost D, Salam R.  

Deolalikar, A.  
2012 A National Shame: Hunger and Malnutrition in India. Ideas for India.  

Department of AYUSH Ministry of Health & Family Welfare  
2014 National AYUSH Mission.  

Department of Health & Family Welfare  
2011 Annual Report to the People on Health.  

DiNardo M, Gibson JM, et al.  

Division of Statistics: Ministry of Health and Family Welfare  
2012 Rural Health Statistics in India.  

Edwards, JH.  

Ernst, E.  
Ernst E, Cohen MH, Stone J  

Gawde SR, Shetty YC, Pawar DB.  

Gogtay NJ, Bhatt HA, Dalvi SS, Kshirsagar NA.  

Gupta, V.  

Halliburton, M.  

Hankey, A.  

Harris, MI.  

International Diabetes Federation  

Jones JS, Watt S.  

Joshi D, Joshi N.  
Kaveeshwar SA, Jon C.

Khan, SK.

Kumar, Dr. A.

Kumar CSK, Namboodiri KK.

Langford, J.

Lebovitz, HE.

Leguizamon, CJM.

Maizes V, Caspi O.

Maxwell, JA.
Mehrotra R, Bajaj S, Kumar D.

Menon I, Spudich A.

Merriam-Webster

Mohan V, Anbalagan, VP.

Nisula, T.
2006 In the Presence of Biomedicine: Ayurveda, Medical Integration and Health Seeking in Mysore, South India. Anthropology & Medicine 13(3):207-224.

Pal, M.

Roy, V.


Shetty AJ, Bhandarkar R, Kotian S.
Shea, JL  

Simons, LA.  

Singer M, Baer H.  

Sridharan K, Mohan R, Ramaratnam S.  

Strauss C, Quinn N.  

Thatte UM, Rege NN, Phatak SD, Dahanukar SA.  

Tracy, SJ.  
2013 Qualitative Research Methods. Chichester, West Sussex, UK: Blackwell Publishing.

Tuli, F.  

Verma U, et al.  

Wells, J.C.K.  