

2018

# Interculturality in Health: The Infant Mortality Rate of Bolivia

Allen G. Crosthwait

*University of Mississippi. Sally McDonnell Barksdale Honors College*

Follow this and additional works at: [https://egrove.olemiss.edu/hon\\_thesis](https://egrove.olemiss.edu/hon_thesis)



Part of the [Anthropology Commons](#)

---

## Recommended Citation

Crosthwait, Allen G., "Interculturality in Health: The Infant Mortality Rate of Bolivia" (2018). *Honors Theses*. 43.  
[https://egrove.olemiss.edu/hon\\_thesis/43](https://egrove.olemiss.edu/hon_thesis/43)

This Undergraduate Thesis is brought to you for free and open access by the Honors College (Sally McDonnell Barksdale Honors College) at eGrove. It has been accepted for inclusion in Honors Theses by an authorized administrator of eGrove. For more information, please contact [egrove@olemiss.edu](mailto:egrove@olemiss.edu).

INTERCULTURALITY IN HEALTH:  
THE INFANT MORTALITY RATE OF BOLIVIA

2018

By  
Allen Gray Crosthwait

A thesis presented in partial fulfillment of the requirements for completion  
Of the Bachelor of Arts degree in Spanish  
Sally McDonnell Barksdale Honors College  
The University of Mississippi

University, MS

Approved:

---

Advisor: Dr. Kate Centellas

---

Reader: Dr. John Green

---

Reader: Dr. Luanne Buchanan

© Allen Gray Crosthwait  
2018 ALL RIGHTS RESERVED

## **Acknowledgements**

I would like to thank all those who have accompanied me on this journey. First, I would like to thank Drs. Kate and Miguel Centellas for sparking my interest in the landscape of Bolivian healthcare while I studied under them for the Bolivian Field School of 2017. Moreover, I would like to extend additional and infinite appreciation to Dr. Kate Centellas for being my advisor on this project. This would not have been feasible without her mentorship and (immense) patience. Of course, I am also appreciative of my other readers on this project, Dr. John Green and Dr. Luanne Buchanan. Their interest and valued feedback in my work proved to be pivotal in completing this project. Finally, I would like to thank all my friends, family and other loved ones for their love, patience and dedication to my academic career. This thesis would not have been possible without any one of you.

## **Abstract**

The Bolivian government implemented an intercultural reform in 2006 in an attempt to improve the quality of health for its indigenous citizens throughout the country. One of the biggest focuses thereof was to improve the infant mortality rate, as it has historically far surpassed the rates of other Latin American nations. Though superficial data presented by the government seem to suggest that the intercultural reform has been an unprecedented success, very little extensive research has been done on the topic. My work gauges the merits of the intercultural reform and assesses which areas particularly have been successful. To do so, a mixed methods approach is used. Having traveled to Bolivian clinics and talked to health professionals and mothers, the first half of my work focuses on my ethnographic analysis of my fieldwork while in La Paz and Oruro coupled with content analysis of governmental health brochures and social media accounts. In the second half of my investigation, I analyze datasets presented by the government and non-governmental organizations to contrast the two and ascertain where reality may lie. Though I have discovered that the intercultural reform has doubtlessly had a tremendous impact on the lives of many indigenous children and mother, there persist many municipalities in dire need of assistance, despite the cheery allegations of the Bolivian government.

# Table of Contents

|   |     |
|---|-----|
| <b>ACKNOWLEDGEMENTS</b> .....                                 | iii |
| <b>ABSTRACT</b> .....   | iv  |
| <b>LIST OF TABLES</b> .....                                   | vi  |
| <b>TABLE OF ACRONYMS</b> .....                                | vii |
| <b>INTRODUCTION</b>   |     |
| Background and Research Question.....                         | 1   |
| Argument .....  | 2   |
| Methodology.....  | 3   |
| Chapter Layout.....   | 6   |
| <br>  |     |
| <b>CHAPTER ONE: HEALTHCARE AND SOCIETY IN BOLIVIA</b>         |     |
| 1.1 National Statistics and Organization.....                 | 7   |
| 1.2 Indigeneity in Bolivia.....                               | 8   |
| 1.3 The Infant Mortality Rate of Bolivia.....                 | 13  |
| <br>  |     |
| <b>CHAPTER TWO: THEORETICAL FRAMEWORK OF INFANT MORTALITY</b> |     |
| 2.1 Introduction to Global Health.....                        | 16  |
| 2.2 Interculturality and Indigeneity in Healthcare.....       | 17  |
| 2.3 Socioeconomic Implications on Healthcare.....             | 21  |
| 2.4 Comparison with Peru and Tuberculosis Rate.....           | 23  |
| <br>  |     |
| <b>CHAPTER THREE: ETHNOGRAPHIC PERSPECTIVE</b>                |     |
| 3.1 Background for My Fieldwork.....                          | 26  |
| 3.2 The Rural Perspective.....                                | 27  |
| 3.3 The Urban Perspective.....                                | 30  |
| 3.4 The State of Infant Mortality throughout the Nation.....  | 32  |
| <br>  |     |
| <b>CHAPTER FOUR: STATISTICAL ANALYSIS</b>                     |     |
| 4.1 Introduction to Statistical Analysis.....                 | 36  |
| 4.2 What is Going on with the Data?.....                      | 38  |
| 4.3 Discussion of Findings.....                               | 46  |
| <br>  |     |
| <b>CONCLUSION</b> .....                                       | 48  |
| <br>  |     |
| <b>BIBLIOGRAPHY</b> .....                                     | 52  |

## LIST OF TABLES

|   |    |
|---|----|
| <b>Table 2-1: Tuberculosis Incidences 2016</b> .....                      | 24 |
| <b>Figure 4-1: IMR (per 1,000 births) since 1960 per World Bank</b> ..... | 37 |
| <b>Figure 4-2: IMR by Average Non-Indigeneity</b> .....                   | 40 |
| <b>Figure 4-3: IMR By Average Poverty Rates</b> .....                     | 42 |
| <b>Figure 4-4: IMR by Education Years</b> .....                           | 43 |
| <b>Figure 4-5: IMR by Prenatal Care Coverage</b> .....                    | 45 |

## **Table of Acronyms**

|               |  |
|---------------|--|
| <b>INE</b>    | Instituto Nacional de Estadísticas (National Institute of Statistics)                |
| <b>IMR</b>    | Infant Mortality Rate  |
| <b>NGO</b>    | Non-Governmental Organization  |
| <b>SAFCI</b>  | Salud Familiar Comunitaria Intercultural (Intercultural Family and Community Health) |
| <b>SUMI</b>   | Seguro Universal Maternal Infantil (Universal Insurance for Mother and Child)        |
| <b>UNWGIP</b> | United Nations Working Group for Indigenous Peoples                                  |
| <b>UNDP</b>   | United Nations Development Programme   |
| <b>WHO</b>    | World Health Organization  |



# Introduction

## Background

Upon telling people around the metropolitan areas of La Paz and Santa Cruz that I was researching the rate of infant mortality in Bolivia, many of them, some of which were doctors and healthcare professionals, told me frankly or indirectly that I was wasting my time. Not by any means did they believe their country was a utopia without flaws (in fact, I frequently got suggestions for what national issue I *should* be focusing my investigative efforts to instead), but rather they were blissfully ignorant that the effects of infant mortality were very much present for rural indigenous communities that seem years displaced from these cities. However, I can see this is still an issue that matters from my experience with the passionate healthcare professionals that face the very real implications of this crisis every day. I watched our guide from Save the Children, Daphne Sorenson, jubilantly play with the healthy children in the clinic in Oruro. I was shocked to receive a 1,130-word email response from a doctor I had not met when I sent her two questions asking about her experience combatting the infant mortality rate. These are people who understand that infant mortality will continue to be a problem in Bolivia until the rate reaches zero.

I became invested in this topic while participating in the Bolivian Field School of Drs. Centellas in La Paz. While analyzing and working by active participation with sociology and anthropology in this nation, Bolivian healthcare became fascinating for me. I truly resonated with the topic of interculturality in healthcare, as I was delighted to see a nation that attempted to solve its gravest issues by taking the initiative to listen to

and better represent its marginalized peoples that are affected the worst. I became personally invested in this research not just for the future implications for a nation I immediately became enthralled with and mystified by, but also for my home state of Mississippi, which burdens the worst rate of infant mortality in the United States. As Bolivia seems to be rectifying its dismal rate of infant mortality, the same measure seems to be worsening in the United States, particularly Mississippi, the rural areas of which can remarkably resemble those of Bolivia due to similar histories of colonization and discrimination. Admittedly, an initiative that attempts that respect the desires of its marginalized peoples rather than patronizingly prescribing what the group in power believes to be best for it is a topic that is somewhat foreign to me. By understanding this phenomenon in Bolivia, I have the utmost hope that I can utilize the knowledge I have gleaned along the way to understand sociology's role in health as a future physician.

### **Argument**

My thesis concentrates on and examines the Bolivia's intercultural reform's impact on the rate of maternal infant mortality. In this manner, my research attempts to ascertain what kind of influence has the more culturally broader and accessible initiative had in reducing the rate of infant mortality in a country infamous for having a dismal rate. The interculturalism implemented by the government strives to put more power and comfort in the hands of both indigenous patients and medical personnel by officially putting it on the same level as the modern biomedical practice in the country. As I approach these fairly recent events in Bolivia, my encompassing research question is as follows: has this initiative of interculturalism in healthcare been beneficial in lowering the rate of maternal infant mortality in Bolivia. Subsequently if so, how has the intercultural

reform induced change in actuality? That is, what are the factors induced by this initiative that are working well for the Bolivian government in lowering the maternal infant mortality rate? I initially hypothesized that the Bolivian intercultural reform has succeeded in reducing the maternal infant mortality rate because a healthcare initiative better representing the desires and traditions of Bolivia's indigenous peoples certainly appears to create a certain level of trust between Bolivian healthcare and indigenous groups. Perhaps more importantly, this initiative has focused on education in community settings for mothers. However, as I was to discover, the issue of infant mortality in Bolivia goes much further than this sociological reform could reach.

From speaking with those intimately knowledgeable about the healthcare situation in Bolivia, I propose that the three greatest factors that elicit an unfavorable infant mortality rate in the nation are poor infrastructure, lack of medical personnel in areas of need, and misconceptions from indigenous women about biomedical healthcare. Clearly, the intercultural reform only targets one of these three factors. Needless to say, the intercultural reform was a breath of fresh air in a country that historically suffered an imbalance of power between the white dominant group and the indigenous minority. However, as my findings will present, an intercultural reform simply does not go deep enough to fix the grave institutional problems of Bolivia. Regretfully, the country seems to be concealing the truth of the situation for sake of appearance. Due to this data misrepresentation, I will not be able to elaborate statistically that the intercultural reform has been able to greatly impact the landscape of the infant mortality in the nation. Certainly, I believe it has, due to my ethnographic perspectives to be discussed. Despite its inability to fix all of Bolivia's intricate problems, an intercultural reform still is

important in post-colonial societies with imbalances of power. For the true merits of the intercultural reform in Bolivia to be discussed, however, the country would need to be more upfront about its other failures, which does not appear as though it will happen.

## **Methodology**

This thesis was conducted in a mixed-methods approach. While in Bolivia, I was able to visit with many healthcare professionals and inquire into their experiences with the IMR throughout the nation. Moreover, I went to two clinics in exceedingly different geographical and socioeconomic conditions and drew from my experiences there in order to establish what I posit is occurring at a national level. Being able to talk with mothers of varying ethnic and socioeconomic conditions proved vital in guiding my research. In order to supplement my ethnographic perspectives, which mainly focus on the Bolivian sentiment of the issue and the clinics I visited firsthand, I conducted follow-up interviews with the organizations and people that explained the landscape of infant mortality in Bolivia while I was there. The continued interaction with those that are intimately familiar with women's healthcare in Bolivia lent me perspective to orient my research.

Moreover, my research requires previous work in academic journals, books and reviews to allow me to understand the history and evolution of healthcare in Bolivia and allow me a method to conceptualize terms that are pertinent to my work. While there, I was able to acquire many national investigative works from the college I attended, Universidad Católica Boliviana, which mainly focused on community involvement in this phenomenon along with other investigative works into this health indicator of infant mortality that looked at this health indicator through the lens of social, economic and educational inequality. I additionally looked at how the government is framing this

phenomenon, be it on social media or through government run news articles. Contrasting the governmental perspective with that of other groups, such as NGO's or anti-governmental media, tends to show where the gray area of this health phenomenon may lie. Of course, the aforementioned literature regarding infant mortality allows me to operationalize the variables and theoretical framework specific to this issue. More broadly, I will use works on global and indigenous health trends such as that of Farmer and of Gracey and King. Moreover, I will discuss models that Mosley and Chen along with Merry and Wood proposed in ascertaining the indices of the IMR and other socioeconomic indicators in "developing" nations. Doing so will allow me to provide the outlook of the phenomenon, especially compared to the trends in data that I present.

Besides qualitative data, the understanding of this healthcare phenomenon will be broadened by quantitative data, mainly in the form of descriptive statistics. To this end, I use different data spreadsheets compiled by the government, from the census and a household survey distributed across the nation, to compare how this seems to have been manipulated to be presented in a better light. However, even if the data is artificially deflated, the trends between different socioeconomic indicators and infant mortality can still be analyzed. I take a comparative look at the similarities and differences between the statistics provided by the government, particularly in the 2012 census. As this particular census asked more specific questions regarding socioeconomic status, education, and hospital coverage, I took this data in comparison to the prevalence of the infant mortality rate throughout Bolivia's municipalities. I do this by taking linear regressions using socioeconomic determinants as the independent variable and the rates of infant mortality as the dependent variable. By this, I find that the trends in these data points often

contradict the government's claims and theoretical framework regarding the issue. To further contextualize Bolivian data to that of other nations, I use World Bank data to compare the rates of Bolivia to similar nations in terms of either infant mortality rates or geography.

### **Chapter Layout**

My thesis will follow the order roughly outlined in the methodology section. I will first provide context for the historical basis of indigeneity and health in Bolivia. Here, I will explain how the IMR has manifested itself previously. Then, I will proceed to expand on variables such as indigeneity and interculturalization to be able to apply these terms to the broader scope of events in Bolivia. Moreover, I will also look through existing literature on the topic of the IMR in developing nations and the indicators thereof. I will contrast the rates of infant mortality in Bolivia to that of Peru while also taking a look at rates of tuberculosis to present a phenomenon that appears to show that the health data in Bolivia may be spurious. I will then proceed to my ethnographic field work, explaining the landscape I saw and using the aforementioned literature to substantiate my claims. I will finally discuss statistical calculations I performed and how I use them to posit that the government has misrepresented data.

# **Chapter One: Healthcare and Society in Bolivia**

## **1.1 National Statistics and Organization**

Bolivia is an immense nation that spans numerous ethnic and indigenous lines. As of March 4<sup>th</sup>, 2018, the Bolivian National Institute of Statistics claimed that the population amounted to 11,254,800 citizens (Instituto Nacional de Estadística). Within the nation, there are nine departments which comprise the main subdivisions of the country which have limited autonomy under the national constitution. These departments are La Paz, Pando, Santa Cruz, Oruro, Potosí, Beni, Tarija, Cochabamba, and Chuquisaca. Furthermore, these departments are then broken down into provinces which are then broken down into municipalities, the smallest subdivision of the nation (La República de Bolivia). Of the population, while 60.7% of the respondents of a survey marked themselves mestizo (ethnic roots from both white European and some native indigenous group), interestingly enough, the percentage of those who attested that they felt part of some indigenous group was lower at 44% (Bolivia - CIA Factbook). Regardless, based on this data, Bolivia has the largest quantity and percentage of total population of indigenous peoples in Latin America amounting to approximately 6.5 million indigenous members of the population (World Bank - Bolivia). However, the term indigenous can become rather tricky, as the Bolivian constitution officially recognizes thirty-six indigenous “nations” along with their corresponding languages. Precisely this recognition explains the official name of the country, the “Plurinational State of Bolivia” which was added to the constitution in 2009 (La República de Bolivia). Needless to say, in governmental legislation and policy, the definitions of the terms

plurinational and indigenous carry utmost importance, as the country needs all-encompassing laws that maintain equality among the many groups. Unfortunately, the term indigenous proves to be too enigmatic an idea to be summarized by a few words in legislation.

## **1.2 Indigeneity in Health and Healthcare Reforms**

Despite the complexity of defining the term, there are many reasonable definitions of indigeneity, especially coming from non-governmental organizations. The United Nations Working Group for Indigenous Peoples (UN WGIP) essentially defined indigenous peoples as living descendants of a group of people that saw a new ethnic or cultural group overtake the land and have preserved their customs precisely because of the isolation from the new populations of the country. From this power shift, according to the UN WGIP, emerges a power structure in which the indigenous group is placed under a governmental structure promotes values that differ from their own. One can easily see how this would play a major role in the historical and political implications of indigenous peoples, as they generally wield little to no power or voice to a government and politically stronger ethnicity, the legitimacy of which they question in their ancestral homes. Of course, such a political dynamic would carry over into other domains such as healthcare. This in turn elicits a negative consequence in indigenous rates of infant mortality throughout the nation. In later years, the UN WGIP subsequently added another term for indigeneity which stated that any person who self-identifies as indigenous and is, in turn, accepted by the respective indigenous community can be classified as indigenous. Reflecting upon this point offers interesting consequences considering that the percentage of those who self-identified as indigenous actually *decreased* in the aftermath of



Bolivia's intercultural reforms in legislation. Although this finding will be investigated more intricately in the latter sections of this thesis, this certainly may suggest that the percentage of those who chose to self-identify as indigenous has some sort of reciprocal correlation to how pluralistic the government attempts to be in alleviating institutional discriminations and prejudices. In that manner, an indigenous group is usually defined by a state to be subsistence to the dominant group, per the World Bank definition discussed in Chapter Two. Regardless, it is important to note that this could simply be due to the glaring difference in the way that the two most recent censuses framed the questions of indigeneity; namely, the 2001 census did not include the option of mestizo, defined by Merriam-Webster as a person with mixed ethnicity, particularly from a Spaniard and an American Indian (Mestizo). Regardless of the underlying force(s) behind this phenomenon, this implication must be taken seriously in analyzing any subsequent data relating to indigeneity, as it may diminish the true effects of the intercultural reform, which primarily targets both the indigenous and the mestizo.

With Bolivia's first indigenous president, Evo Morales, came a wave of intercultural reforms, starting in 2006, throughout the country that sought to better every aspect of indigenous life by attempting to reconcile the previously existing institutional culture which alienated indigenous peoples with the values and beliefs of those groups (Ramírez Hita). A revised Bolivian constitution mandates that every citizen have equal access to health care, regardless their location or ethnic background. In such a manner, these initiatives take aim to decolonize the nation, returning power and land to indigenous communities (La República de Bolivia). Included in these additions of the constitution was an intercultural reform in healthcare which sought to achieve this de-marginalization

of indigenous groups by providing access to traditional medicine throughout the country's clinics. For the first time, the Bolivian constitution defined healthcare as an individual right, not a market, and incorporated traditional medicinal practices in Bolivia's health system. This fact is of great importance as indigenous groups tend to be socially and economically taken advantage of, and the healthcare sector is not expected to be different, per the implications discussed in Chapter Two. In doing so, this reform seeks to provide the indigenous population an environment that is both more equitable in access and implementation and comfortable in providing intercultural health measures. An example of the aftermath of these intercultural reforms is the SAFCI, which outlines the steps that the healthcare sector must take in order to integrate traditional health methods as well as the implemented biomedical health.

Introduced in legislation around 2006, the *Salud Familiar Comunitaria Intercultural* (SAFCI) stood to highlight the intercultural steps the healthcare sector must take. The objective model of this legislation is to eliminate social exclusion to access of healthcare by focusing on (1) participation and social control, (2) delivering healthcare while considering the individual, family and community of those affected, and (3) “accepting, respecting, valuing and integrating”<sup>1</sup> both biomedical practices as well as traditional medicine from the indigenous peoples (Decreto Supremo N° 29601). For the SAFCI, interculturality is defined as the attempt to strike a balance wherever possible between traditional Andean doctors and academically trained physicians, giving each the same scope of possibility to use his or her expertise to present solutions to problems in healthcare. Conversely, the SAFCI maintains that each individual inherently possesses

---

<sup>1</sup> In Spanish, “aceptar, respetar, valorar y articular”

the right to choose which type of healthcare that he or she wants. In this manner, the government has attempted to better represent the traditions and beliefs of the indigenous peoples in the world of Bolivian healthcare. Theoretically, the SAFCI aims to strike a concordance between traditional practices with the strictly biomedical sciences across the nation. The SAFCI is of great importance for this indigenous government, because this is the decree which puts into action these endeavors. Of course, the institution that was the beneficiary of this legislation was that of traditional medicine throughout the country.

The Law of Traditional and Ancestral Medicine of Bolivia<sup>2</sup> was released in 2013 in order to expand the previous work of the SAFCI. This initiative explicitly states that it is the responsibility of the state to not only give it equal recognition in respect to biomedical medicine, but to also promote it as a means of reviving its ancestry (Ley 459). This legislation not only legitimizes the practice of traditional medicine across the nation such as clearly defining various professions and steps to take to be considered one of these doctors. Moreover, the government lends certification to these individuals, conferring upon them the legal right to practice and be considered on equal terms as physicians of biomedical training. According to the Ministry of Health, by 2016 there were 4,475 practicing traditional doctors across the nation. (“Registro de Médicos Tradicionales”). The Ministry of Health seeks not only to number these doctors, but also to work intimately with them, giving them information about the patients that visit whichever clinic that the traditional doctor may be affiliated with (Bolivia: Parteras, guías espirituales, naturistas). Along with medicinal services, traditional doctors are considered

---

<sup>2</sup> In Spanish, “Ley de Medicina Tradicional Ancestral Boliviana.”

by the government to be a source of wisdom and spiritual guidance for the general population of Bolivia.

Besides traditional medicine, the government has launched economic incentives for mother. Launched in 2002, the Universal Coverage for Mother and Infant (SUMI)<sup>3</sup>, sought to bring universal coverage with no cost to the mothers of Bolivia during the birthing process up to five years of age (Ley 2426). Later with revamped attempt of placing emphasis on interculturality, the government implemented another economic incentive, Bono Juana Azurday (also Bono Madre Niño Niña), in 2009 for mothers to come to clinics during what it defined as four prenatal checks, the delivery process, a check during postpartum, and two checks each month until the child is two years old (Decreto Supremo N° 0066). If a mother attends each check, the total amount of money that she could obtain is 1,820 Bolivianos. The government mandates that this benefit is intended for all mothers including women without medical insurance, women in prison, or mothers with a child younger than two years old. This economic incentive is offered to mothers in order to both reduce the rate of maternal infant mortality and chronic malnutrition of children younger than the age of two throughout the country. To receive this stimulus, mothers must attend the aforementioned sessions along with listening to the advice of their doctors and attending sessions created to raise education among the mothers. Often, these sessions are designed to be a group activity, creating a system of support for the mothers during which they can learn trades for self-sustenance or cheap, easy meals to cook, for example. To receive the benefits, the mothers must also bring their children to the clinics for the necessary vaccinations. Naturally, these

---

<sup>3</sup> Seguro Universal Materno Infantil

aforementioned programs are primarily targeted at indigenous women, who remain marginalized in many aspects in Bolivian life.

### **1.3 The Infant Mortality Rate of Bolivia**

As I have noted, Bolivia has the highest percentage of an indigenous population in South America. Noting that higher levels of societal discrimination exist for indigenous populations (Gracey and King), of course, higher rates of infant mortality follow populations more densely containing indigenous groups, even in more urban environments in Bolivia such as Oruro, Potosí, Cochabamba, or Chuquisaca. Of course, there are other factors that might predict a higher level of infant mortality, defined as the rate of deaths within the first year of out of 1,000 births for infants, including the language the mother speaks and her level of education. According to the Instituto, the language with the highest corresponding risk of being affected by the infant mortality rate is Quechua, which is also the largest indigenous group in Bolivia (Bolivia - CIA Factbook). The provinces that generally contain the highest levels of infant mortality are to the south-west of the country, with isolated islands in various provinces in the tropical north. Conversely, the lowest rates in the country tend to cluster in the west. Moreover, Bolivia is an example of a nation with a dire “brain drain,”<sup>4</sup> where professionally trained personnel generally chose to either go abroad or work in urban environments where they can earn higher levels of compensation (Bolivia busca que los jovenes). Though these two will be discussed intermittently throughout the thesis, this work is concerned primarily with the effect stemming from the relationship between modern and traditional medicine.

---

<sup>4</sup> In Spanish, “Fugo de cerebro”

The Instituto Nacional de Estadística defines the infant mortality rate (IMR) as a social issue, noticing the stark differences among groups. According to the INE, infant mortality rates in rural communities are 56% higher than in urban environments. Even before Evo Morales's intercultural reforms of 2006, the INE made it exceedingly clear in 2003 that they believe in order to lower the rate of infant mortality the country needs to lower the gap of social demographical inequalities (Bolivia: Niveles, Tendencias y Diferenciales de la Mortalidad Infantil). Besides geography, the INE highlights other factors with high correlations to mothers at risk during childbirth are the level of education she has received and the language she speaks. Obviously, these two factors generally go hand-in-hand with the current location of the mother, but one must note that the language the mother speaks will often be directly related with the customs, values and traditions that are typical in its respective community. For this reason, considering which indigenous dynamics could play a factor in regards to healthcare, particularly the association with traditional medicinal practices, will help this analysis.

Though the IMR remains one of Bolivia's biggest issues for its government to face, one must consider that the rate has decreased substantially over time. Modern medicine has drastically cut the infant mortality rate in the Western Hemisphere since the 1950's. Today, Bolivia has the lowest rate of its recorded history with its rate being 30 deaths of infants per 1,000 live births in 2016 (Bolivia - World Bank). Since 1999, the nation has cut its rate in approximately half, so the country has experienced success in lowering the infant mortality rate over time. Being on a downward trend overall, the IMR has decreased since 2009 as well, by about 6.4%. However, the effects of the intercultural reform cannot truly be examined on a linear graph, as it is consistently decreasing. This

being said, a downward slope of the infant mortality rate as a function of time may not constitute a reason for governmental officials in Bolivia to celebrate: the rate of infant mortality is at least 166% higher than similar nations to Bolivia that share colonization and cultural similarities in South America. (Guyana actually has a rather comparable IMR to Bolivia; however, due to differences in historical and cultural dynamics, this country will not be considered as a similar nation to isolate the unique factors at-large in Bolivia that have a negative effect on the IMR.) I will compare Bolivia to Peru, a neighboring nation with similar indigenous groups and a shared altiplano<sup>5</sup> region. Doing so could prove to be key in understanding the unique factor(s) in Bolivia that induce a higher rate of infant mortality, as the countries have common factors in shared geocultural norms. This comparison will be made in the following chapter.

---

<sup>5</sup> The “altiplano” is a high tableland in west South America where the Andes are located.

## **Chapter Two: Theoretical Framework**

*“The problem of [infant mortality] is no less poignant today than it was 25 years ago when the ‘child survival revolution’ was launched.”* – The State of the World’s Children 2008

### **2.1 Introduction to Global Health**

The maternal infant mortality rate, like nearly every sociomedical phenomenon, is governed by a series of underlying factors in society and biology that contribute to its effect. The infant mortality measures the number of deaths of a specific population, usually out of 1,000 births, of infants born up to one year of age. Using the theoretical framework surrounding this issue, I will explain the processes in Bolivia as a function of these hopefully characteristic and understandable trends. Two of the more common measures in predicting high levels of the IMR are low maternal education and low income levels. A group of social scientists conducted a study of 152 families, confirming that maternal education, family income levels, and wealth of a nation to be strong determinants for quality of healthcare (Schell). Across nations, the trends between a high IMR and low maternal education rates are considered to be causal in determining higher levels in infant mortality (Farmer). Income levels have also been studied extensively within Bolivia in regards to be a strong indicator for health (Pobreza y Salud en Bolivia), while These two factors have traditionally been considered the two best indicators of a high infant mortality rate. Of course, women’s education and income levels can often go hand in hand, as less affluent communities tend to have less resources



for educational purposes. The ranges of these two factors tend to be more pronounced in developing nations.

## **2.2 Interculturality and Indigeneity in Healthcare**

I will use *Salud e Interculturalidad en América Latina* in order to establish framework to discuss the complex issue of interculturality. According to Xavier Albó, interculturality, by itself, is considered to be a juxtaposition of the values, norms and customs of one specific ethnic group to that of another. On a narrower level within Latin America, the term also can be used as a comparison of Western and indigenous values, clearly the term that the Bolivian government uses in defining the term. In regards to healthcare within a Latin American context, the term is used repeatedly to refer to the attempt to strike a balance between these two ethnic groups. Albó posited that such a measure is important in a post-colonial society in which, to indigenous peoples and their values, a healthcare setting void of familiarity of a specific family or community doctor seems alien and cold. This in turn lead to a cultural blockage, especially considering the fact that most physicians within Bolivia tend to only speak Spanish and no indigenous languages. For such a reason, even before the intercultural reform was initiated in Bolivia, Albó proposed such an intercultural reform to alleviate some of these tensions within a medical setting (Albó). Of course, many others discussed the potential of interculturality.

Jacqueline Michaux also wrote before the intercultural reform occurred, noting that the problems that interculturalism stood to circumvent were “political, economic, medicinal, cognitive, symbolic and imaginary, psychological, historical and legal.”<sup>6</sup> She

---

<sup>6</sup> In Spanish, “políticas, económicas, médicas, cognitivas, simbólicas e imaginarias, psicológicas, históricas y legales.”

proposed that interculturalism could break down these barriers to a more just society by reversing the integrated effects of colonization. In regards to healthcare, she maintains that Western and traditional Andean medical practices have an opposing effect. This is due to conflicting philosophies within the different disciplines, as one is fundamentally based in science while the other in spirituality. As different as these two philosophies are, she insists the necessity of having individual components of these two healthcare systems in place. In doing so, she invokes the mental component of healthcare, noting that biomedicine traditionally focuses on the physical component. However, she points to the Aymara people have seen external aggressions in regards to spirituality and sociology that have negatively affected their psyches in healthcare (Michaux). Having established the importance of interculturalism in healthcare, I will provide an example where such a measure could have these positive intended effects.

One of the earliest implementations of interculturalism in Bolivian healthcare occurred in 2001 in the rural Potosí, one of the poorest department of Bolivia. Like Albó, Roberto Campos Navarro lamented the inability of medical schools to foster a culture that promoted the preservation and respect for indigenous values for their students. Campos Navarro detailed in *Salud e Interculturalidad en América Latina* how a postgrad degree, Willaqkuno, focused in the discipline of interculturalism and sought to teach physicians and other healthcare professionals measures of these early concepts. More than 70 professionals participated in this attempt to break cultural barriers within this rural, traditional department. At the conclusion of the study, the successes of the study were that healthcare professionals saw their competencies in interculturalism rise tremendously and that local citizens of various villages were taught how to teach these

measures of interculturality, instructing other generations. The author remarked that such a paradigm like Willaqquna could serve as a guide for other villages across South America with large indigenous populations (Campos Navarro). Of course, this example shows interculturality in its earliest of stages, before it was implemented into law. This example was given to show that this topic of interculturality has actually been talked about for quite some time within Latin America and is not novel to the Evo Morales presidency.

The concept and national framing of indigeneity was discussed in the previous chapter. However, understanding the trends of indigeneity can, of course, provide some insight as to what role it may be ascribed in healthcare in Bolivia. Expanding on the aspects of indigeneity I mentioned from the UN WGIP, it is important to remark upon their general roles in society, and subsequently societal health. For this, I will couple the prior historically focused definition with World Bank's socially based definition. Of course, these two share much of the defining characteristics in common, but also these groups of peoples feel an ancestral tie to the lands and natural resources, the control of which is often devested from them by the colonizing power. Moreover, coupled with aforementioned self-identification and language usage, these indigenous groups tend to regress in a non-dominant role, usually conducting their own affairs within the group solely (Indigenous Peoples). This puts indigenous groups at risk even today to be subjugated to laws which they had no voice in creating.

Gracey and King assert that the deeply rooted effects of colonization affect the landscape of indigenous health even to this day, more than two hundred years after the colonization occurred. The disruption of political and ecological balances that occurred

within the colonized world, such as the invasion of foreign microorganisms or the subjugation of entire groups has created marginalized indigenous peoples that persists in feeling shredded from the social fabric that their ancestors once created and enjoyed. Instead, they frequently received resettlement programs, sending them to unproductive and undesirable land, out of the scope of national politics or production. Such has created a realm of poverty and insufficient education from which these peoples had little chance for escape (Gracey). Considering many of these colonizational trends were similar, the outcomes for global health of these marginalized peoples, also manifest themselves in a similar manner.

Unfortunately, the nearly 400 million indigenous peoples worldwide see a much lower standard of health than the rest of the world. Due to similar patterns of colonization and industrialization of such countries, many of these health indicators for indigenous peoples can be quite similar to one another worldwide. This is due to a lack of resources and attention provided to indigenous peoples. Even more so, as indigenous peoples move from transitional to modern lifestyles, they are at higher risk of contracting “lifestyle diseases” such as obesity, cardiovascular disease and diabetes. In general, indigenous communities report greater instances of maternal infant mortality and morbidity, malnutrition, shorter life expectancies, among many other grave health crises (Gracey). Considering that this thesis attempts to validate the effects of the Bolivian intercultural reforms, which predominantly target indigenous peoples, the effects on these variables that manifest in indigenous communities will be of great importance to note.

### **2.3 Socioeconomic Implications on Healthcare**

As mentioned, maternal education is of great import to the survival of a child. In a study looking at cases in ten developing countries, Caldwell and McDonald posited that maternal education is more important than both income levels and access to health facilities. Because of this reason, they conclude that the IMR throughout the world has decreased, not only because of technological and economical advances but also because of sociological changes throughout nations in which children were raised in their pivotal first few years of life with more educated parents. Surprisingly, these researches claimed that after controlling for maternal education, the differences between rural and urban communities were negligible (Caldwell). Cleland and van Ginnekan agreed on this measure, but to a lesser extent, noting that educational advantages are intrinsically tied to better economical situations (Cleland). For this purpose, the discussion of what a developing nation entails is important in understanding the rates of infant mortality.

The World Economic Situation and Prospects divides nations into three categories. Based on statistical analysis, nations are considered to be developed economies, economies in transition, and lastly developing nations (UN). Bolivia, considered a “developing” nation, falls into this last group, which is characterized by having a low Human Development Index, a less industrialized base, and, generally, a much higher rate of growth than more developed nations. Such developing nations tend to have lower life expectancy, less education and lower literacy rate, lower income and higher fertility rates. Bolivia would be expected to see trends as nations similar to its economy’s plight of developing. Particularly for marginalized indigenous groups, the lack of healthcare can bear strongly on communities. In 1986, Mosley and Chen sought to

provide a new framework for understanding the characteristics of child mortality in such nations. (It is to be noted that child mortality differs from infant mortality in that child mortality analyzes deaths in children up to age five, while infant mortality, as noted, analyzes deaths of infants up to one year of age.) While social scientists look at the socioeconomic trends (maternal education and income levels, predominantly), medical researchers examine the physical manifestations of the disease and the extent to which it is deadly, rather the morbidity of the phenomenon. In other words, while social scientists question what factors cause this health trend, medical researchers examine the physical attributes of the diseases, such as malnutrition or infections, not focusing on the social factors. Mosley and Chen sought to reconcile these two philosophies to have a measure to more accurately assess and predict infant mortality trends in developing nations.

The variables in this system, though separated proximate and socioeconomic determinants, are all interconnected through some means. For the proximate determinants, the variables that are considered are maternal factors, environmental contamination, nutrient deficiency, injury, and personal illness control. Such proximate determinants are of quintessential importance as they can be measured directly in populations. This proves to be helpful in observing the inner workings of various mechanisms at play in the rate of infant mortality. Conversely, the socioeconomic factors, which can be viewed as independent variables, are further categorized in three separate level: individual-level, which analyzes individual productivity with traditions, norms and attitudes; household-level, which looks at income and wealth; and community-level, which of course considers ecological setting, political economy, and health system. Interestingly enough, this model, unlike many social models, does not treat mortality as

the only dependent variable. Measuring death rates proves useful in providing a readily available statistic to be interpreted. However, as these events are rather found in isolation by studying large samples of populations. On the other hand, medical researches look at the health levels of the survivors on a much smaller sample size. Using these two different philosophies in research, Mosley and Chen proposed using the combination of mortality rates along with rates of “malnutrition,” a concept that will be explored in more depth in the following paragraph. By merging what may seem like disparate variables, the Mosley-Chen model for analyzing infant mortality tends to reveal a more complete picture of the health trend. This system revolutionized the way that the infant mortality rate should be viewed in developing nations as “it suggests that child mortality should be studied more as a chronic disease process with multifactorial origins than as an acute, single cause phenomenon.” As such, infant mortality in Bolivia will be treated as a chronic disease process. Unfortunately, I will be unable to apply all these metrics that these two researchers proposed due to data unavailability. I will, however, follow this paradigm in looking at socioeconomic determinants as dependent variables for the rates of infant mortality in Bolivia.

#### **2.4 Comparison with Peru and Tuberculosis Rates**

As mentioned earlier, I posit that Bolivia’s government has deliberately misrepresented its healthcare data in an attempt to present itself in a better light. To substantiate these claim, I will mention a brief similar occurrence within the country that seems to result in a lack of reported cases, that of Tuberculosis and HIV. The phenomenon between these two diseases has been well documented. Tuberculosis not only is the most opportunistic infection of those who are positive for AIDS/HIV, but it is

also the leading cause of death of the same population. This results from the loss of cell-mediated immunity that HIV invokes which allows *Mycobacterium tuberculosis* an easier infection. This in turn elicits a higher index of extrapulmonary tuberculosis infection, atypical radiographic manifestations, and paucibacillary disease for those already for HIV. This occurs at a much more profound rate for developing nations (Luetkemeyer). I will compare Bolivia's rates of tuberculosis with that of Peru's. Considering they are geographically, culturally, and economically similar, particularly in the shared altiplano region, one would suspect that these two nations share similar rates of concurrent tuberculosis and HIV infections. However, that is not the case.

Table 2-1: Tuberculosis Incidences 2016<sup>7</sup>

|         | Number Total | Rate per<br>100,000 | Number Total<br>with HIV | Rate with HIV<br>per 100,000 |
|---------|--------------|---------------------|--------------------------|------------------------------|
| Bolivia | 12,000       | 114                 | 500                      | 4.6                          |
| Peru    | 37,000       | 117                 | 2,200                    | 6.8                          |

Using data from the World Tuberculosis Report of 2017 conducted by the WHO, I will contrast these countries' rates. As one can tell from the table, though Bolivia reported more nearly reported the same rate of tuberculosis as Peru, the nation still reported a lower rate of HIV positive patients. Though that might seem as though it were a positive occurrence for the nation, unfortunately, the numbers simply do not add up. The high rates of concurrence of HIV and tuberculosis would make it inane to believe

<sup>7</sup> Source: Tuberculosis Report 2017



that officials in Bolivia simply do not screen for HIV while treating cases of tuberculosis. Of course, the rural communities may not always have tests within reach, but they certainly should as the tests are quick to administer, cheap, and reliable. Therefore, the country is either hiding data in regards to tuberculosis and HIV provenances, or they are greatly forsaking the health of its citizens. I will discuss in the next two chapters anecdotally and statistically why I believe that the government is intentionally distorting data.

## Chapter Three: Ethnographic Perspective

### 3.1 Background for my Fieldwork

Once I had decided the topic for my thesis, my convictions wavered whether infant mortality was the greatest health issue that Bolivia was facing, as nearly everyone gave me some opinion about it. I realized that I was in one of La Paz's more affluent residential areas, but the masking effect could still be rather misleading for me. Making heads or tails out of the data against what I was hearing and seeing, I sat on my bed to do a blog post, then it hit me. If Bolivia is anything like Mississippi (it astoundingly is), then the degree of awareness of problems that the minorities may face can be rather low for the dominant group, be it intentionally or not. The problems of the minority groups are either projected back onto them or forgotten entirely. Precisely for this reason was why I became so interested in an intercultural reform. The fact that this reform targets the cultural traditions and desires, rather than modifying it or destroying it completely as a means to an end, makes the set of reforms in Bolivia of utmost importance and curiosity for me. At the behest of my paceño<sup>8</sup> friends and family, I ultimately decided to take an investigative look into it.

Throughout the research, I was frequently told by physicians, NGO workers and others familiar in Bolivian healthcare that the three greatest factors that elicit a high IMR in Bolivia are the poor infrastructure and long distances from remote villages to clinics,

---

<sup>8</sup> Paceño/a is the demonym that refers to a habitant or native of La Paz

general lack of personnel, and negative views of indigenous mothers of Western medicine. Notably, the intercultural reform actively only targets to remedy one of these three factors. In Chapter Two I discussed that interculturality is a social phenomenon that people have been discussing since the late 1990's and early 2000's around South America. Is interculturality strong enough to mask the other two problems regarding the Bolivian IMR while only alleviating one? One would certainly think not; however, the government has been boasting of its intercultural success.

### **3.2 The Rural Perspective**

Being in Bolivia, I saw firsthand how the intercultural reform was manifesting throughout the public healthcare system. One of the more informative experiences I had occurred in the Rafael Pabón clinic in Oruro, a densely indigenous populated city located in the central-western part of the country in the Andes. The Aymaran culture still radiates in this city, famous for its Carnival with an indigenous flair on the Christian celebration. However, the city is often disparaged by other Bolivians. Convinced I would have nothing to see especially of their healthcare system, many paceños I told scoffed at the thought that I was willingly going to this place, telling me all that I would see would be dirt and trash. They personally offered to take me to some clinics that they would rather me see instead of going all the way to Oruro. Rather subconsciously or not, I feel as their pleas were a patriotic effort of keeping my insights confined to that of a tourist's rather than an investigator's, as they knew that Oruro certainly suffered one of the more dismal rates of infant mortality in the nation. Although probably innocuous, as they probably wanted a foreigner to have a rosy view of the nation they love rather than purposefully conceal the stories of an overwhelmingly indigenous city, the more I was told not to go,

the more I knew that there would be something important for me to find in the dusty Oruro.

The Rafael Pabón clinic, a secondary level clinic that offered an array of services, proved to be bustling the still early morning that we arrived. As the clinic had an adept team for women health, a good portion of the waiting room was covered, primarily by mothers and their children. I was there with my Field School to talk to these women about their experiences precisely. Around the clinic, government fliers adorned the walls in the dimly lit room. The building was surprisingly bigger than I first amounted it to be, as the Dr. Martinez, the administrative physician, kindly took us up the stairs into a conference room. In there, the mothers sat while their young children happily skipped along. Some of the women varied in terms of expressed indigeneity, as some were fully clad in traditional *polleras*<sup>9</sup> while some dressed more modernly. However, all had come to this clinic for the same purpose. They were the beneficiaries of SAFCI and many of them had had their children birthed in one of the available intercultural methods. The women were gracious enough to speak to us about our experiences in birthing and raising a child in one of Bolivia's traditionally more despondent regions for doing so.

Being able to speak to these mothers proved to be a telling experience in this research. The sense of community that they had seemed to be the greatest factor for them having an enjoyable experience in being a mother. Out of the three women I talked with, all of them mentioned how important the community was for them personally and as a mother. These sessions are not only for instructing women in things like creating cheap, healthy meals and finding sustainable careers; these communities “empower” them, in the

---

<sup>9</sup> A *pollera* is a skirt worn by a *chola*, discussed later in the footnotes of this chapter.

words of one lady, and for a mother fighting poverty and societal norms that can certainly make all the difference. One mother that I talked to has been benefitting from learning how to make chocolate which she in turn sells to help support her family. Per another, the community cares for one another, be it advice from one mother to another or love and support in more serious issues. As she described, strong group of women working together not only helps each other but also entices other friends of theirs to attend the same clinic during pregnancy. This is certainly a paradigm that seems to work, as one mother even told me that this clinic was farther than another she could have easily have gone to. In a country where women, particularly from indigenous communities, can be repressed by male chauvinism, putting the power of being a competent and self-sufficient mother in the hands of the women can have tremendous results.

The multicultural approach that the clinic takes also eases worries and doubts for the women, many of whom can feel extremely out of place in a rigidly medical setting. Replicating a delivery process like they may have at home ensures that these women feel more comfortable entrusting their babies in the clinic. It is no surprise that the general director of traditional medicine in the Bolivian ministry of health, Dr. Vivian Camacho, stated that the act of intercultural birth returned the “humanization” effect of child birth to these women (Mi Salud). Obviously most important is that this replicates the process of giving birth at home, while being in a much safer, more sterile environment to do so, per the discussion of the importance of traditional medicine and familiarity in Chapter Two. The Rafael Pabón clinic goes above and beyond the multicultural health reform, as it has four different traditional delivery methods. I was certainly surprised to see how cozy the room was and what little details, equipment being wooden, maté on hand, and wool

sheeted beds, they honed in on to make a difference for their patients. These little differences may seem arbitrary, but in immensely traditional town like Oruro this type of cultural sensitivity can make huge strides in decreasing the infant mortality rate.

Dr. Martinez also described another key in getting the mothers to the clinics is getting their traditional doctors on board with the biomedical practitioners. Though tension was high between these two types of doctors, campaigns such as roundtable conversations between the two and the government's multicultural reform have alleviated this relationship. One traditional Andean doctor I talked to believes that, at least around Oruro, the two types of medical care-givers work "cordially" today. To have the support of the Andean doctors is paramount for many reasons. One must remember that these are very experienced caregivers that usually, as I have noticed talking to multiple traditional doctors, have had their knowledge imparted from their own families over a time of many generations. More so, they are certified by the government, as one lady excitedly showed me. Obviously, the legitimization process of these doctors discussed in Chapter Two was an important step in putting more power in the hands of the traditional doctors.

### **3.3 The Urban Perspective**

After my visit to Oruro, I immediately thought I knew the formula to lowering the IMR in Bolivia: *Interculturality + Community = Success!* However, a trip to a more modernized clinic in the heart of the metropolitan La Paz stood to contradict this simple formula. By coincidence, my house mother's sister was the administrative head of this municipality-funded clinic. (She also was the former head of the department of women's health in Bolivia.) Her philosophy was a far cry from looking to interculturality for help in women's health. Each room was adorned with the newest equipment sent straight from

Japan. (Coincidentally or not, Japan saw drastic improvement since 1967 and now has the lowest infant mortality rate in the world at 2 deaths per 1,000 births) (Worldbank – Infant Mortality Rates). Though each clinic is technically required to have intercultural birthing methods, this clinic only provided the standard Western biomedical birthing delivery. Be that as it may, she was rather confident in her approaches and even offered to give me all the latest data her clinic had accrued in her personal CD that she used. The data, of course, backed her for her area in La Paz.

As my bivariate function withered in the midst of the reality of a laughably more complex sociomedical issue, I certainly wondered how this clinic, offering not the slightest hint of interculturality, was able to appeal to the indigenous women I saw in its lobby tending to children or patiently reading the provided government brochures. Although they had to come for the SAFCI initiative periodically, there didn't seem to be an initiative to create a community for the mothers quite like there was in Oruro. I realized that I was making a rather elementary error in assuming that, while the interculturality reform appeals to indigenous women, that range of indigeneity is a rather broad range. In the more urban La Paz, indigeneity certainly could take on a more urbanized form in this bustling area. Despite the lack of intercultural birthing methods, the clinic, on a second look, still abounded with initiatives that stemmed from the intercultural reform. Infographics on the walls were ubiquitously located and women were encouraged to take brochures with them home. One graphic on the wall that caught my attention was one that warned women of common dangers during the pregnancy process that included bleeding or loss of liquid from the vagina, swelling of extremities, lack of movement from the baby, fainting, continuous vomiting, headaches and fevers. Of

course, the central message of the poster urged women to immediately go to the clinic to alleviate these grave symptoms. The woman in the cartoon suffering these maladies was adorned in traditional *chola*<sup>10</sup> garb.

### **3.4 The State of Infant Mortality throughout the Nation**

My experience in Oruro had convinced me that if a clinic does not have intercultural birthing methods, it will not succeed in persuading indigenous women to give birth there, as they would opt to remain home with their traditional doctors and midwives. If not interculturality, what force in Bolivia could be driving the rate of infant mortality to be lower in places like this populous district of La Paz, where the clinic boasted state of the art Japanese biomedical equipment yet no intercultural birthing methods? Of course, one must consider that in major metropolitan areas such as La Paz, aversion to biomedical practices will not be as prevalent for an Aymaran population that is adjusted to the urbane environment. However, by a quick glance of the statistics after the implementation of SAFCI, one can easily see that even the metropolitan areas have benefited since the intercultural reforms of 2006. Despite the shiny new equipment I saw, the rates of lowering infant mortality seemed statistically like those rural regions that had embraced the intercultural birthing methods. Was interculturality just a bystander for some invisible force that was already at work in Bolivia lowering the infant mortality rate?

The issue of my analysis stemmed from my initial inability to separate the very noticeable physical attributes of interculturality to the subtler, abstract manners in which it proliferated throughout the countryside. In other words, I had hastily reduced the

---

<sup>10</sup> A *chola* is an indigenous woman, Aymara or Quechua, in Bolivia noted for wearing a unique attire which generally consists of a skirt, shawl, petticoat and bowler hat (Dear).



concept of interculturality to only the birthing methods that I had seen in Oruro, not realizing that this concept is also readily applicable to a limitless number of scenarios. As it would be silly to believe that a reform would take on the same shape in New York City as it does Mississippi, so too the effects of the intercultural reform may vary with location. Of course, providing these birthing methods is a crucial step in the right direction for this reform, but the other equally important measures also emerge from this reform, including community building, economic stimulation, respect from medical professionals among many more. Arguably, the most important activator for change is the education of the mother. Certainly, I would say that the government would agree with this assessment as well, as the commitment to education was ubiquitous in each medical setting I found myself in. All of these initiatives, from giving the mother the option of how to deliver her baby, to creating a community for her to thrive in, to teaching her how to lead a sustainable life on her *own* merits, to simply teaching her the basics of what to expect during pregnancy, stand to reverse the power structure in the face of machismo, racism, traditional medicine prejudice, and other conflicting factors, to return the power of child raising where it belongs: in the hands of the mother.

In this manner, one can easily see that there are infinitely more factors at work than my initial bivariate function would indicate. Instead of counting which communities had what number of intercultural birthing methods and juxtaposing it to the reported level of infant mortality in this region, one may be better served to gauge the level of equality that the mother has in the region and the cooperativity between Western and traditional medicine. Though initiatives are working in areas such as the Oruro area that I saw, there are surely others, in Potosí or even other parts of Oruro, for example, that do not offer

such opportunities of equality or education for the mother. I have heard reports where some men, prompted by suspicion or primordial desire of control, strictly forbid the women to go to any clinic. Other communities have inordinate gaps in levels of education between the men and women. Even others, ethnocentrism exists in the form that the *mezclado* or white hegemony do not wish to conform to the measures of interculturality. Communities such as these, unfortunately, are the ones in which the autonomy of the mother is minimized and, expectedly, have the higher indices of maternal infant mortality rates.

To conclude, I will offer the plans of action of the government detailed in the state sponsored health magazine *Mi Salud* to lower the rates of maternal infant mortality and expand upon them. They are as follows: 1) Work alongside the community to reach excluded populations, 2) Place obstetric and neonatal care in reach of the majority, 3) Transform the establishments of health to provide service with quality, friendliness, and respect for diversity, 4) Guarantee the dispensability, access and rational use of medicine, 5) Innovate the infrastructure and technology in terms of healthcare service, 6) Periodically evaluate to monitor advancements and to reach decisions. With measure six being a reflective one, the other five are probably not only arranged in levels of potential merit but also in order of decreasing practicality. The brain drain of talented Bolivian physicians to metropolitan areas or other countries offers a formidable issue as far as reaching obstetric care to Bolivia's most remote civilizations. Having driven miles upon the bumpy Bolivian roads, I can avow that the internal infrastructure offers yet another challenge. In fact, the closest some communities can get to a regular physician is one that attends his patients via a video conference. However, the one thing that can be done is

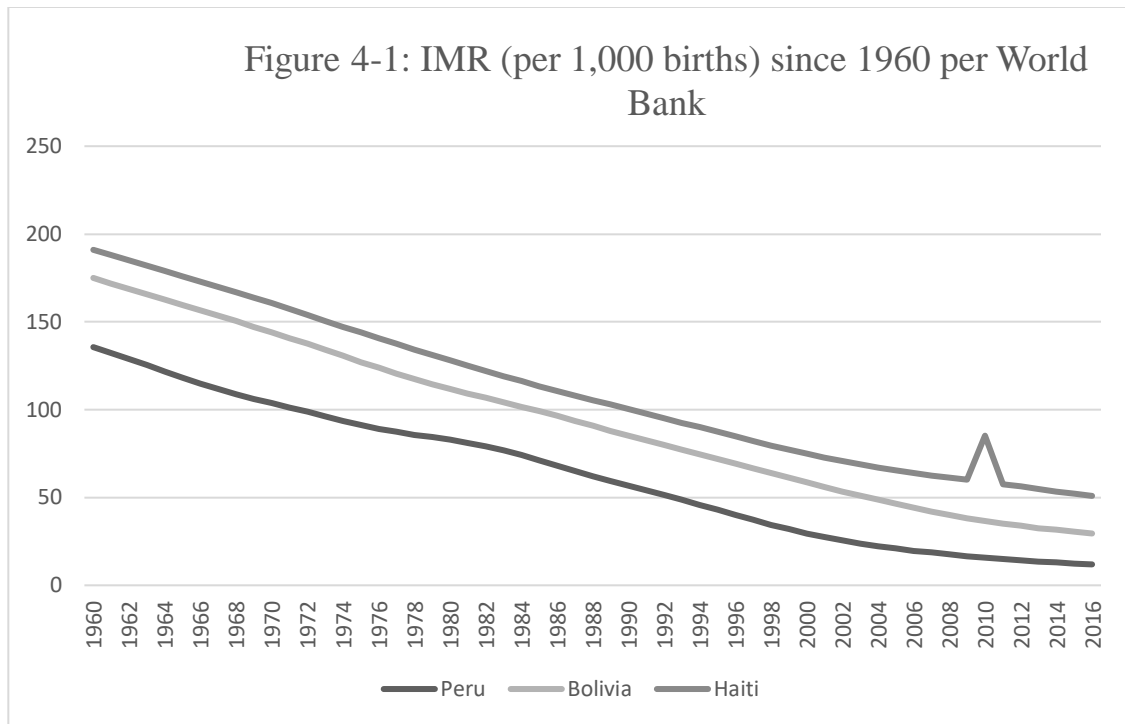
increase the cooperation with communities and between the gap of Western and traditional medicine. Working with communities to educate and empower women will prove to be the key to reach the far-flung communities where, unfortunately, a true biomedical infrastructure is years away. If a health official could go periodically to such communities, working with its traditional doctors, and present the information that the mothers need. Of course, a domiciliary birth is less than optimal, but as I saw in a poster in Oruro, the government does have plans in place for the risks of such a birth to be minimized.

The intercultural reform has succeeded in that it has reached multiple levels of how a mother might be marginalized during the child birthing process. With a concerted effort to respectfully administer care and information to the mothers, the Bolivian government has found a method that should be commended. However, not all is perfect in the landscape of Bolivian healthcare. There are still two very important factors, dismal infrastructure and a brain drainage of medical personnel, that have been left completely untouched. Unfortunately, seeing these great successes within communities may lead one to think that all has been wonderful in regards to Bolivian healthcare and the IMR. Unfortunately, there is no way to tell where the truth of the situation may be, but one would surmise it would not be as cheery as the government would lead one to believe.

## **Chapter Four: Statistical Analysis**

### **4.1 Introduction to Statistical Analysis**

For the first time, Bolivia introduced questions and data regarding socioeconomic indicators in its census of 2012. Obviously, this information would provide useful for contrasting what sociological trends play a role in infant mortality in the nation, which has greatly suffered from a grisly rate. Bolivia has far lagged behind its Latin American counterparts to have levels of IMR that appear to be closer to Haiti or West African nations. In my theoretical framework, I have contrasted the landscape of Bolivian healthcare to that of Peru, which reveals a large gap between the two similar countries. If the government is concealing the true extent of the bleakness of the situation, then one could expect the levels to be even further behind Peru and closer to the aforementioned West African nations and Haiti. If this were the case, I would suspect that the intercultural reform, though still greatly beneficial to various communities, simply does not deliver the solution that Bolivia needs. As such, it would be obvious that the true solution would lie in alleviating the deep institutional problems in Bolivia's healthcare system.



The implication for the government not presenting accurate data on the subject of national infant mortality could be disastrous for Bolivia, a nation overtly quick to celebrate itself for the supposed success of the intercultural reforms. The analysis done in this chapter does not undermine the merits of the intercultural reform itself, however. Certainly, the intercultural reform has done much to narrow the gap between classes to create a more equitable healthcare system. Furthermore, there could be some sort of a lagged effect, as a population will take time to show a significant change in health outcomes. However, the institutional problems in Bolivian healthcare certainly seem to be much too deeply set for just an intercultural reform. This being said, researchers have been discussing the implications of a intercultural health system even before Bolivia launched their own version (Salud e Interculturalidad). Therefore, it would seem that interculturality, though beneficial to many people, cannot go deep enough to fix deeply set institutional discrepancies in healthcare. If so, the Bolivian government should

certainly focus on spending more time overhauling the failing system rather than desperately hiding this reality. One would believe this could be achievable through continued cooperation with other countries, scholars and non-governmental organizations. However, the government's hesistance to comply has been well documented, and I will present their inability to provide researchers who could potentially find solutions with viable data to analyze.

In this chapter, I will first present evidence I have found that I posit reveals a significant chance that the government has either been collecting the data in a careless manner or simply is just distorting it intentionally. In doing this, we will examine what the data suggests about trends in infant mortality, although these trends are unfortunately nonsensical. At the end of this chapter, I will present more recent data from the department of La Paz and determine whether it has followed the general trend the government has presented in its census data. From there, I will end the chapter with a discussion of the implications of what has happened in the presentation of the data and where one might could expect the truth to lie.

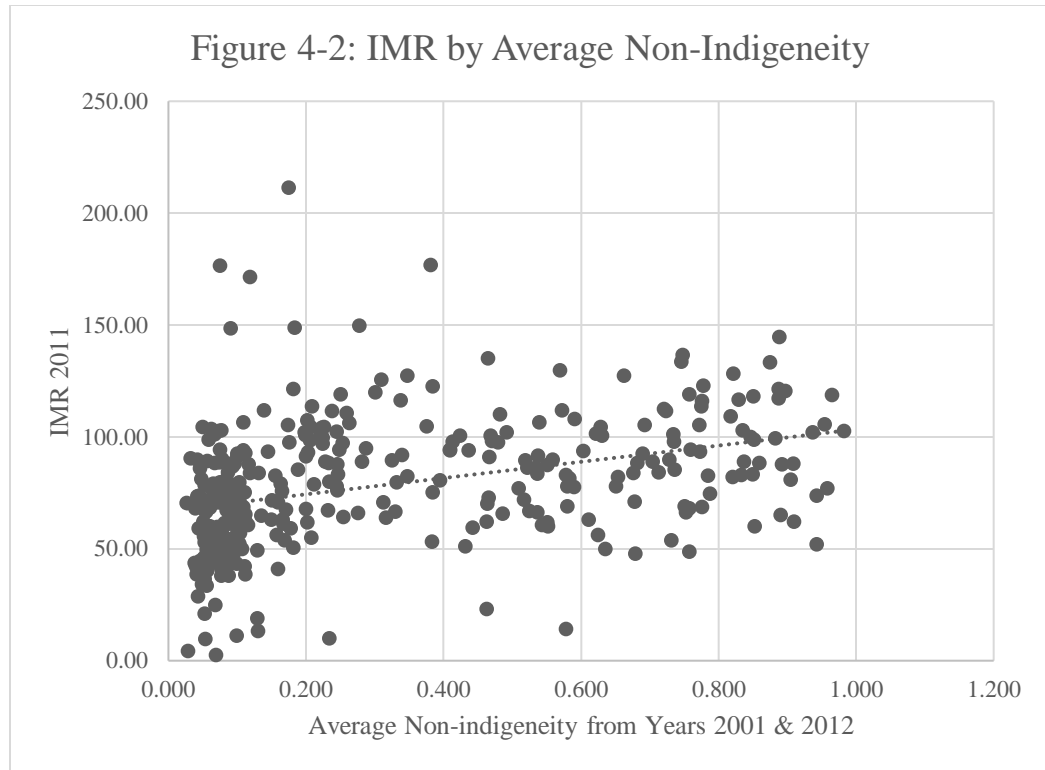
#### **4.2 What is Going on with the Data?**

After only a brief glance at the government released census data, one can surmise that there is a problem in which the country collects its sociomedical data. Routinely, municipalities report health determinants (prenatal care coverage, family planning instruction, hospital birth coverage, etc.) in percentages that exceed over 150%. Other municipalities do not report data whatsoever. Additional health determinants that should be connected in some natural way simply do not fit together. Performed linear regressions often contradict the very statements that the government maintains. Using these statistical

analyses, I will examine what the government is saying with wherein the truth may actually lie.

The government has conceded repeatedly that the IMR is generally a sociomedical phenomenon that targets the indigenous population more disparately than the non-indigenous population (“Bolivia: tendencias”). Much scholarly literature has been released which substantiates this claim, such as the aforementioned study by Gracey and King which posits the indigenous populations across the world are at greater risk of such sociomedical phenomena due to societal post-colonial structures. To demonstrate how the data in Bolivia is spurious, I will run various linear regressions with multiple data points across the 340 municipalities of Bolivia. The data I am using is from the Bolivia Field School database which culminates data from a house survey conducted by the INE which asks questions regarding prenatal care coverage, hospital birth coverage, family care planning instruction and other sociodemographic information (Centellas). I also pull from the 2012 census to find information about ethnicity and education, and I use data regarding IMR of 2012 that was released by the government in 2016.

As all the data points are quite disparate, I had to adjust some of my indicators. For example, I took the averages across municipalities from percentages of non-indigeneity from 2001 and from 2012 to adjust from using an independent variable that comes after the dependent variable. Then, I used this average as the independent variable to run a linear regression with IMR of 2011 as the dependent variable. The results of this regression of 334 municipalities demonstrated an interesting trend.



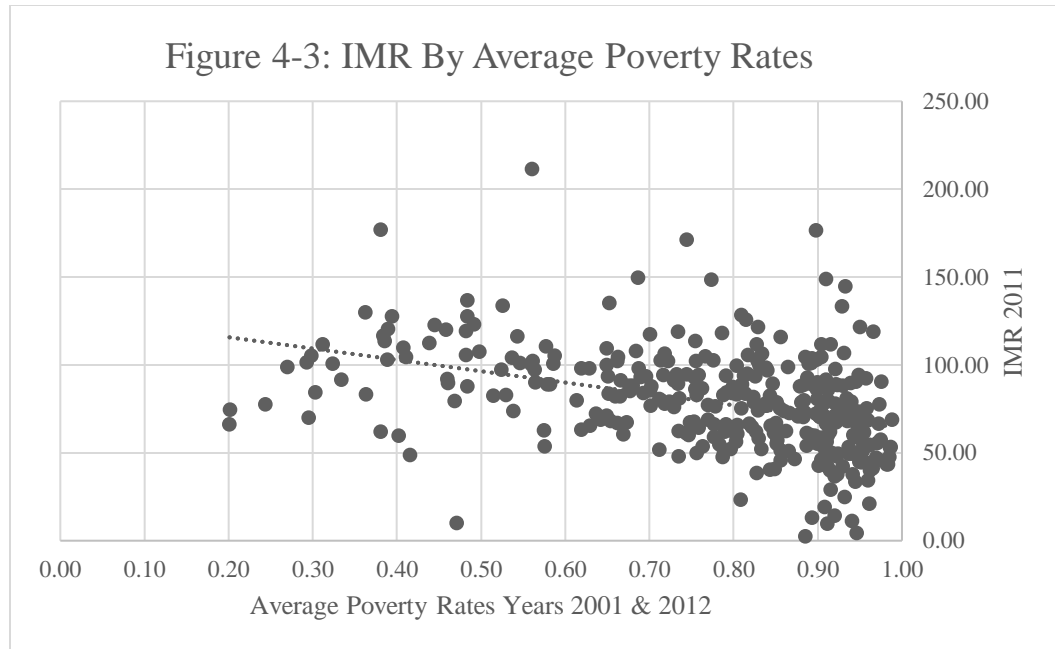
One can easily see, while perhaps not significant, the data represents a trend line that states that rates of infant mortality *increase* with populations that are less indigenous. This completely contradicts existing theoretical framework and even the government itself. This could partially be explained partially as a recent trend in the more urbane upper class of Bolivia. A 2013 survey throughout the nation discovered that 47.1% of mothers in the richest quintile of Bolivia opted to have a planned cesarean section, as opposed to the 4.0% of the poorest mothers (Institute for Advanced Development Studies, La Paz). This phenomenon in Bolivia confounds the problem of interpreting the rates of infant mortality, as wealthier municipalities undertake a greater frequency of cesareans, which scientists and doctors conclude to be a greater risk for both the mother and the infant (Mayo Clinic). Whether the mothers do this for convenience or are misled



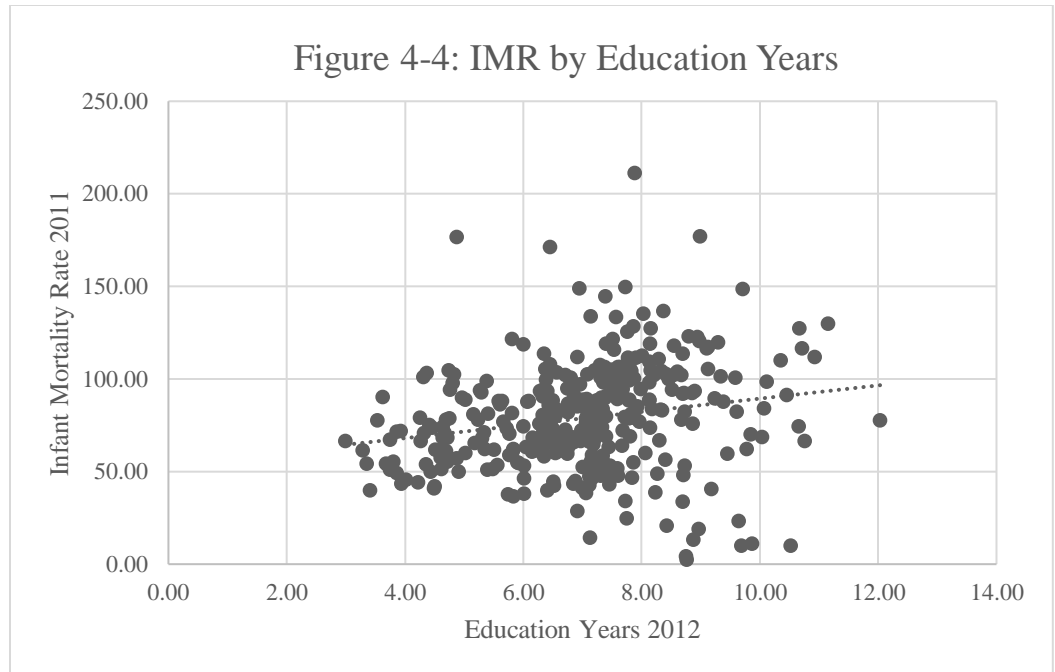
by physicians wishing to predetermine work hours and incur greater compensation, this fact may skew, even if slightly, data for what should be lower rates of infant mortality.

Although this phenomenon in Bolivia would raise the levels of IMR for nonindigenous populations, this alone cannot explain the trend of the linear regression. The incidence of this phenomenon occurring in wealthier departments is certainly too low to explain what is actually happening in the data of the above graph. Even if this trend were accurate, why would the government implement an intercultural reform considering that the existing healthcare infrastructure already suits this nonindigenous class? On the other hand, linear regressions for other Aymaran, Quechua and other ethnic groups reveal a trend line that either decreases with higher percentages of these populations or demonstrates no change at all. Considering these are the groups that are targeted by the intercultural reform, it would be inane to believe that the governing body believes the data it posts. One certainly must wonder how the data seems to outright contradict itself so easily. Of course, the data depends on how the population self-identifies for the independent variable of this test. Moreover, there are other sociomedical trends in the 2012 census that nearly reveal the exact same trend.

Using the same strategy I had for the levels of non-indigeneity, I surmised that the traits for the poverty levels would follow a similarly spurious pattern. Therefore, I took the averages for the rates of poverty levels of 2001 and 2012 to use as my independent value, comparing it to the IMR of 2011. Once again, the data from 332 municipalities presents something that completely contradicts literature and governmental proclamations. Except for few instances, the data presented by the census and infant mortality rates indicate that the rates of IMR drop with higher rates of poverty.



Another socioeconomic phenomenon that is vitally important to the incidences of the IMR is the education of the mother, as explained in the theoretical framework. Scholars, such as Cleland, who have studied maternal education in developing nations, duly note this point. With this in mind, and considering a large part of the intercultural reforms hinge on educating mothers, I decided to explore the relationships between years of education and levels of IMR in the nation within the 2012 census data. Unfortunately, I must use the independent variable to be the year that comes after the infant mortality rates for 2011; however, despite this unideal method, I believe I have proven that the data are certainly spurious, in general. Similar to the above regression analyses, I set the mean years of education as the independent value, from smallest to largest, with the corresponding rates of IMR as the dependent value. Once again upon running the linear regression of 332 municipalities, I found yet another contradiction of both theoretical framework and governmental action.



Even a stronger trend line than that of non-indigeneity, the census data states that the IMR increases with more educated municipalities. This contradiction is even more preposterous to believe than the other previously explored inconsistency. Once again, the manner in which the government collected its consideration of educational years is greatly important to this linear regression. Seeing as education years is defined simply as the average of verified attendance to official state sponsored schools, this determinant is certainly easier to collect than non-indigeneity, which depends on the person who answers and the day that he or she does so. Both of these trends that I have run obviously demonstrate that the government is doing something incorrectly in regards to its data collection. Of course, the government may simply be conducting data in a carelessly, which would interfere with analyses that could be inferred. However, one would think that the government would be more careful in releasing data, knowing that people would analyze their claims. A more viable explanation could be that the government does this intentionally. Considering my ethnographic data, from which six Bolivian healthcare

professionals confirm that the government distorts data for its own purposes, this other explanation may be more valid. Therefore, I use these aforementioned instances to posit that the government distorts data knowingly and the levels of IMR in the nation may not be so gleeful as it appears in a cursory look.

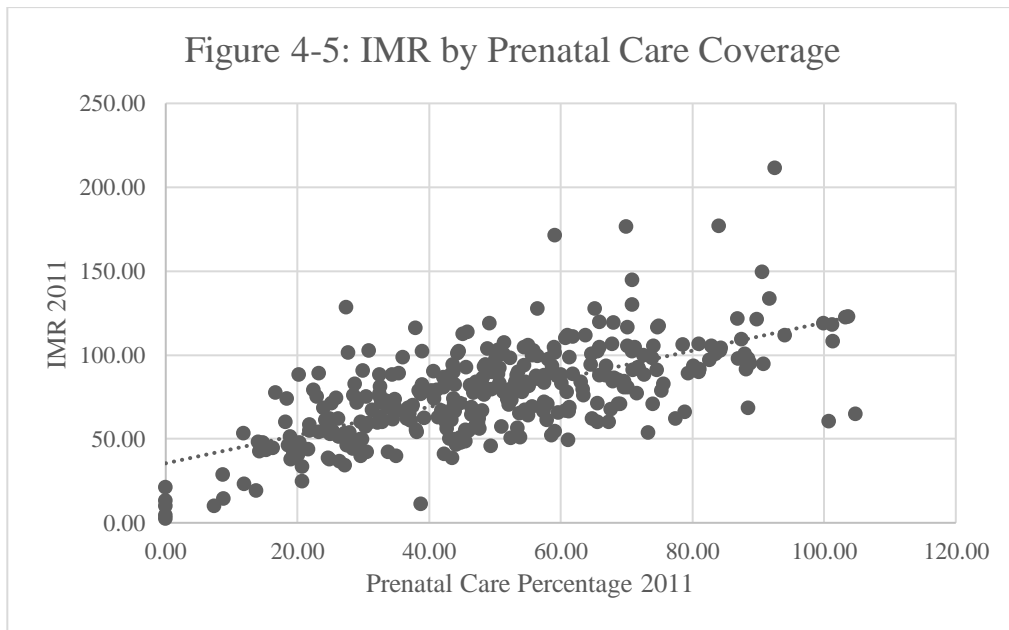
However, my glance of the 2012 census data is not finished, as there is one more discrepancy which should be discussed. The data that is presented for prenatal care coverage, women with family planning instruction, and hospital birth coverage is simply nonsensical when contrasted with one another. One would surmise that the percentages would increase in order of family planning instruction, hospital birth coverage, and prenatal birth coverage, as these services increase in order of complexity. My ethnographic data also supports this as I averred that family planning instruction was ubiquitous. Of course, the rates of hospital births would be greater than the more extensive prenatal care coverage as there certainly will be going to a hospital than both doing so and going for prenatal care coverage. However, once again, the data in the 2012 census stands to contradict this claim. To demonstrate this phenomenon, I took the average of the three determinants across the municipalities<sup>11</sup> to find that the averages from 2011 of hospital care coverage, prenatal care coverage, and family planning instruction to be 62.18%, 53.49% and 31.97%, respectively. One will note that the family planning instruction is nearly half of that of hospital birth coverage. While in Bolivia, I noticed that pamphlets and brochures for family planning instructions tended to be fairly commonplace throughout the clinics that I visited, so I certainly doubt that these pale in

---

<sup>11</sup> Note that I do not claim that these averages I took to be the national average of each determinant, as this would be preposterous due to varying population sizes. I only did this to easily demonstrate a general trend across the municipalities.

comparison to these other two indicators. Of course, I mentioned earlier that departments as Potosí and La Paz still have fairly high levels of domiciliary births.

Unfortunately, these data points also do not make sense when contrasted with the rates of infant mortality. I will save all the examples of how this occurs, as I have demonstrated sufficiently that the contrasting data has a major issue. However, I will present a linear regression where I set prenatal care coverage to be the independent variable and the IMR to be the dependent variable. Due to many municipalities reporting a rate of prenatal care coverage of 105%, I cut these off to run the regression of 321 municipalities. Once again, I found the data to contradict theoretical framework and common sense, as it demonstrates that the more prenatal care coverage a mother has, the more likely her child is to die the first year of life. I will not even try to pursue the possibility of that being the case.



### **4.3 Discussion of Findings**

Knowing that these data trends contradict scholarly research, the government's claims along with common sense, I have established at very least that the government has been incompetent in collecting and/or reporting its data. However, I take this thought further, and I will posit that this masking has been intentional. Of course, I have mentioned that I have had six independent confirmations that the government hides negative trends in order to bolster its appearance to not only other nations but also to its own citizens, which of course elect those in power. For a stoutly pro-indigenous government to claim that an intercultural reform has miraculously solved its infrastructural woes and be willing to go to the lengths in order to deceive others to believe so is certainly not hard to imagine. Idealistic to believe that the intercultural reform could cure all, this obviously is not the only solution for alleviating Bolivia's IMR. This country faces a formidable challenge, as it has a large exodus of medical professionals to cities and other nations which detracts the many rural towns extremely far away from any healthcare system. For the country to see the best results to healthcare problems, the government should focus on these issues.

That being said, it certainly appears to be impossible to imagine what the true devastation that the rate of IMR has in Bolivia. While I was there, I was mainly in urban and peri-urban environments, in which many would attest that the incidence of IMR is no longer an issue. For this reason, and the fact that the IMR would most adversely affect these communities, it is obvious that the most marginalized communities in the nation are those exceedingly rural ones that reside in relative isolation, far off from the urban centers. Of course, the government may not have the means to send officials there to

accurately survey the full extent of what occurs in these communities. Conversely, it may simply want to diminish their existence and, thus, their contribution to the national rates of infant mortality. Regardless of what mindset exists behind this occurrence, these people are the ones that desperately need to be reached by the government. The intercultural reform has certainly done great things in the nation; I directly observed the extent of comfort and familiarity that it could bring to mothers while I was in Oruro. However, the problem in Bolivia cannot be encapsulated by interculturality. To truly fix the problem of the IMR, the government needs to reach the citizens that have been historically excluded in terms of resources and medical attention.

## **Conclusion**

Despite the apparent success I found to be behind the intercultural reforms in Bolivia, that is heavily overshadowed by the stark reality that, unfortunately, the outlook of infant mortality in the nation does not appear to be a former issue, as my Bolivian friends and many others were led to believe. Thankfully, I had the perspective of those who were greatly familiar with the actuality of the IMR in Bolivia, steering me in the correct direction throughout my work. Had it not been for them, I too might have been misled to believe that the infant mortality rate was no longer an issue, just from people's reactions. However, it persists to be an issue and will continue to be an issue until not one child dies from an institutional failure. Therefore, I hope that this will demonstrate to those who were doubtful not to be so complacent with figures released by the government, as they clearly have no logical meaning. I personally did not have the means or the data to concretely prove that the IMR is quite as grisly as I have heard from the knowledgeable health professionals, but I certainly object to the data that the government has posted regarding the rates they conducted.

As I truly believe that the intercultural reform has been a success, on its relative standards, I find this situation quite sad. If and when the actuality of the matter comes out, the intercultural reform will not be seen as the magic wand that cured everything in a matter of only six years. To me, this seems unfair to a reform that truly was needed in a country that had such a stark imbalance of power and influence. Certainly, the nation needed more cultural sensitivity to those who had been marginalized by a monocultural health system since the days of colonization. I believe the intercultural reform succeeded



in breaking the barriers to healthcare and creating a more equitable system by creating communities, teaching mothers, and providing comfort in a place that was desperately needed. However, it certainly could not fix the dismal infrastructure of the nation or recruit talented doctors to the rural areas that need them.

For the nation to see true progress, it should focus on these two factors along with the problem of a cultural imbalance that they have already started on. Needless to say, these other factors may seem insurmountable for such a large nation that is considered developing. Indeed, if Bolivia were to invest all of its resources into these two disadvantages, it truly may not be enough. However, diminishing the reality of the matter certainly is doing more harm than good. First, it is completely excluding a group of people that need help desperately. Although I obviously could not statistically prove this, the regions of the nation would have the worst effects in health from poor infrastructure and brain drainage of medical professionals would be the many remote communities, many without paved roads, just as those who were involved with the extent of the IMR in Bolivia told me. These people desperately need the ideals of the intercultural reform which preaches inclusivity and an unalienable right to healthcare. Second, distorting statistics also conceals the true merits of the intercultural reform, one that is essential for post-colonial nations with a large indigenous group to implement. As great of a potential the intercultural reforms of Bolivia present for marginalized indigenous groups, it should be able to be lent to researchers and other nations to truly understand it in action. Unfortunately, the true merits are unknown instead due to spurious data, leaving the rest of the world to question what change may have actually taken place.

## **Weaknesses**

Obviously, my greatest hurdling block to this research project was the overwhelmingly apparent lack of recent data. I had mentioned that the infant mortality rates I worked with were the most current municipal level data the government had released. The data was for the year 2011 and was released in 2016. Even with the data scarcity, the data that I used was obviously full of contradictions and nonsense. Wanting to investigate authentically how the intercultural reform had impacted the healthcare system, this was disheartening for me. Besides that, there are recent studies on the healthcare system in Bolivia as well, probably also due to the lack of data. These two insufficiencies lead way to a work that has a fairly weaker validity of research, given the fact I both went into fairly uncharted waters with recent developments with interculturality in Bolivia along with misrepresented data. Though I used that data to prove a logical point of how there was clearly something wrong, I could not directly infer anything within the data related to how various socioeconomic or demographic determinants would influence the rates of infant mortality throughout the nation.

Besides those, I obviously could not spend sufficient time or resources in order to truly investigate the scope of the intercultural reforms. Without being on ground and conducting my own trials, I was left at the mercy of the government and the few people who had begun to work with the concept of interculturality. Moreover, not being physically present in Bolivia during my research presented a problem in keeping up with contacts. Throughout this process I sent many emails that were left without a response. Despite these obvious difficulties as an undergraduate researcher in the USA trying to

look at the fairly isolated nation of Bolivia, I was able to work with what I had to ultimately create this work.

### **Future Research**

As I have mentioned, I was disheartened to not be able to accurately gauge the effects of the intercultural reforms. I am still very interested in this topic, and, if time and resources were available, I would certainly have a clearer idea of which steps to take, such as visit more clinics, acquire anything I could see about what the government was saying, visit these isolated rural communities I believe to have been neglected, among other measures. Moreover, I would like to be able to talk to more health professionals, now that I have somewhat oriented myself, and discuss these findings of mine and compare them to their personal experiences. Regardless, I will certainly be watching the landscape of Bolivian affairs to see if any new statistics or information about the IMR and the intercultural reforms are released. Eventually, I would like to see if any other post-colonial nations in South America are implementing some measure of intercultural reforms and what kind of success it would bring.

## Bibliography

- Albó, Xavier. "Interculturalidad y Salud." *Salud e Interculturalidad en América Latina*. Ed. Fernández Juárez, Gerardo. 2004. 65-74. Print.
- "Bolivia: Niveles, Tendencias y Diferenciales de la Mortalidad Infantil." *Instituto Nacional de Estadística*. La Paz: INE. 2003. Print.
- "Bolivia: Parteras, guías espirituales, naturistas y médicos tradicionales iniciarán registro de pacientes." *Ministerio de Salud*. Ministerio de Salud del Estado Plurinacional de Bolivia. Web. 25 November 2018. <https://www.minsalud.gob.bo/2765-bolivia-parteras-guias-espirituales-naturistas-y-medicos-tradicionales-iniciaran-registro-de-pacientes>
- "Bolivia busca que los jóvenes talentos que han emigrado regresen al país." *Universia Bolivia*. *Universia*. 06 February 2015. Web. 16 March 2018.
- C-Section. Mayo Clinic. *Mayo Clinic*. 10 Jan. 2018. Web. 10 April 2018.
- Campos Navarro, Roberto. "Willaqkuna." *Salud e Interculturalidad en América Latina*. Ed. Fernández Juárez, Gerardo. 2004. 93-106. Print.
- "Central Intelligence Agency." *CIA Factbook*. CIA, 19 Mar. 2018. Web. 20 March 2018. <<https://www.cia.gov/library/publications/the-world-factbook/geos/bl.html>>.
- Chávez D., Miguel Angel. (1998). *La Mortalidad Infantil en Bolivia*. La Paz: Universidad Técnica del Beni.
- Centellas, Miguel. BFS 2017 dataset, 2017.
- Cleland, John G. and Jerome K. van Ginneken. "Maternal Education and Child Survival in Developing Countries: The Search for Pathways of Influence." *Social Science & Medicine* Vol. 27 No. 12. (1988). pp 1357-1368.
- Dear, Paula. "The rise of the 'cholitas.'" BBC. *BBC News Magazine*. 20 February 2014. Web. 11 February 2018.
- Decreto Supremo N° 0066. Bono Juana Azurday. La República de Bolivia. 2009.
- Decreto Supremo N° 29601. Nuevo Modelo Sanitario de Bolivia. "Modelo de Salud Familiar Comunitario Integral." La República de Bolivia. 2011.
- Encuesta de Demografía y Salud EDSA 2016. Bolivia: Indicadores Priorizados. Instituto

- Nacional de Estadística, Ministerio de Salud, Estado Plurinacional de Bolivia.
- Farmer, Paul, et al. "Reimagining global health: an introduction." 2013.
- "Global Tuberculosis Report 2017." World Health Organization. France, 2017. Web. 15 April 2018. [http://www.who.int/tb/publications/global\\_report/en/](http://www.who.int/tb/publications/global_report/en/)
- Gortmaker, Steven L. and Paul H. Wise. The First Injustice: Socioeconomic Disparities, Health Services Technology, and Infant Mortality. *Annual Review of Sociology* Vol. 23. pp. 147-170. 1997.
- Gracey, Michael and Malcolm King. "Indigenous health part 1: determinants and disease patterns." *The Lancet* Vol. 374. (2009). pp. 65-75.
- Gracey, Michael and Malcolm King. "Indigenous health part 1: determinants and disease patterns." *The Lancet* Vol. 374. (2009). pp. 76-85.
- Indigenous Peoples*. The World Bank. 22 September 2017. Web. 12 February 2018. <http://www.worldbank.org/en/topic/indigenouspeoples#2>
- INE. 2008. *Estadísticas Nacionales de Bolivia*. INE: La Paz. Bulletin No. 64.
- Instituto Nacional de Estadísticas*. Instituto Nacional de Estadísticas. Web. 24 March 2018. <https://www.ine.gob.bo/>
- La República de Bolivia. "Constitución Política del Estado." Constitución de 2009 de la República de Bolivia, 2009. El Estado Plurinacional de Bolivia, 2009.
- Ledo, Carmen and René Soria. "Sistema de salud en Bolivia." *Salud Pública de México* Vol. 53. Ed. 2. 2011.
- Ley de Medicina Tradicional Ancestral Boliviana. Ley N° 459. <http://www.wipo.int/edocs/lexdocs/laws/es/bo/bo043es.pdf>
- Ley del Seguro Universal Materno Infantil. Ley N° 2426 (2002). La República de Bolivia.
- Mestizo. (2003). In Merriam-Webster's dictionary (11th ed.). Springfield, MA: Merriam-Webster.
- Michaux, Jacqueline. "Hacia un Sistema Intercultural de Salud en Bolivia." *Salud e Interculturalidad en América Latina*. Ed. Fernández Juárez, Gerardo. 2004. Print.
- Mosley, W. Henry and Lincoln C. Chen. "An Analytical Framework for the Study of Child Survival in Developing Nations." *Population and Development Review*, Vol. 10, Supplement: Child Survival: Strategies for Research (1984), pp. 25-45.

- Nieves, Evelyn. "Childbirth in Bolivia's High Plains." *New York Times*. *New York Times*. 13 Mar. 2015. Web. 23 February 2018.
- Luetkemeyer, Annie. "Tuberculosis and HIV." University of California San Francisco. January 2013. Web. 15 April 2018. <http://hivinsite.ucsf.edu/InSite?page=kb-05-01-06>
- Otis, Kelsey E. and John A. Brett. "Barriers to hospital births: why do many Bolivian women give birth at home?" *Revista Panamericana de Salud Pública*. 14 March 2008.
- Pobreza y Salud en Bolivia. (1994). *ILDIS*. La Paz: ILDIS.
- Principales Resultados del Censo Nacional de Población y Vivienda 2012 (CNPV 2012) Estado Plurinacional de Bolivia. Instituto Nacional de Estadística. 2012. La Paz.
- Ramírez Hita, Susana. "Aspectos interculturales de la reforma del sistema de salud en Bolivia." *Revista Peruana de Medicina Experimental y Salud Pública* Vol. 34. 2014.
- "Registro de Médicos Tradicionales." UDAPE. Web. 26 February 2018. [www.udape.gob.bo/portales\\_html/dossierweb2016/.../C070418.xls](http://www.udape.gob.bo/portales_html/dossierweb2016/.../C070418.xls)
- Schell, CO. "Socioeconomic determinants of infant mortality: a worldwide study of 152 low-, middle-, and high-income countries." *Scand J. Public Health* Vol. 35, 2007. 288-297.
- Silva, Erika and Ricardo Batista. 2010. "Bolivian Maternal and Child Health Policies: Successes and Failures." *FOCAL*: Canada.
- State of the Newborn: Bolivia. *Saving Newborn Lives*. July 2002.
- Torri, Maria Costanza and Daniel Hollenberg. "Indigenous Traditional Medicine and Intercultural Healthcare in Bolivia: A Case Study From the Potosi Region." *Journal of Community Health Nursing*. Vol. 30. Issue 4. 2013. pp 216-229
- UDAPE and United Nations Child Fund (UNICEF). 2006. *Bolivia: Evaluación de Impacto de los Seguros de Maternidad y Niñez en Bolivia 1989-2003*: La Paz.
- UNDP. 2011. "The Road to Development in La Paz." *UNDP Newsletter on the Social Situation in the department*.
- United Nations. 2000. *The Millennium Development Goals*. Millennium Summit. <http://www.un.org/millenniumgoals/bkgd.shtml>

World Bank. Bolivia. Web. 22 December 2017.  
<https://data.worldbank.org/country/bolivia>

World Bank. Mortality rate, infant (per 1,000 live births). Web. 22 December 2017.  
<https://data.worldbank.org/indicator/SP.DYN.IMRT.IN>