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El Gran Fantasma: Intercultural Challenges and Opportunities for Maternal and Child Nutrition in El Alto, Bolivia

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An abstract of
A thesis submitted to the Faculty of the
Rollins School of Public Health of Emory University
in partial fulfillment of the requirements for the degree of
Master of Public Health
in Global Health
2015

ABSTRACT

El Gran Fantasma: Intercultural Challenges and Opportunities for Maternal and Child Nutrition in El Alto, Bolivia

By Adam Lipus

Background. This qualitative project aimed to synthesize perspectives of mothers and health service providers in El Alto, Bolivia, with regards to challenges and opportunities in maternal and child nutrition. The nutrition of mothers and children is a major public health concern in Bolivia—particularly in the rapidly growing and predominantly indigenous city of El Alto—and has received considerable attention from the Bolivian government.

Methods. In order to characterize a community-level perspective on maternal and child nutrition, a team of Emory students and Bolivian partners conducted focus group discussions with mothers (n = 4 focus groups, n = 25 mothers [age 18-43, 64% indigenous]) and interviews with health service providers (n = 10) in El Alto in 2014. Focus groups and interviews were transcribed, coded, and analyzed using an across-case descriptive thematic approach.

Results. Mothers and providers viewed infant feeding practices and family meal habits as generally poor and said that the services (e.g., nutrition consultation) provided by the formal healthcare system are inadequate for the needs of mothers and children. Mothers and providers described a struggle to reconcile cultural influences of a past life with a present life where things are not "natural" and advocated for tangible, natural, and lively nutrition education as a solution.

Discussion. Borrowing a phrase from one provider, maternal and child nutrition in El Alto is a "Great Phantom" (*Gran Fantasma*), elusive and stuck between worlds. But in this rapidly transitioning city, intercultural education that harmonizes historical and contemporary views of nutrition can actively transform this phantom into something new and revitalized.

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ACKNOWLEDGEMENTS

Thank you to my wonderful family and friends. To my mom and dad, you have worked so hard and dedicated so much to provide me with the opportunities to challenge myself, explore the world, and learn. I can share my triumphs with you and seek counsel when times are tough. Your unconditional support is irreplaceable, and I am so grateful for you. Thank you to all of my loved ones, friends and family, who have stuck by me as I have poured so much energy into graduate school and into learning to become a stronger person who can help make the world a better place. The love we share and the conversations we have keep me on the good path.

Thank you to my peers at Rollins who have inspired me, challenged me, and befriended me. We will build upon the strength of our relationships for years to come as we move forward.

Thank you to Dr. Juan Leon for your committed mentorship and for providing me with so many opportunities. With your guidance I have become a better writer, manager, and strategic planner. I got to go to Bolivia and build upon your network of wonderful people there. You have dedicated so much time to me and to this project, including trips to Bolivia and 9:00pm Skype calls. You have also consistently encouraged me to make this report clear, influential, and action-oriented. I hope that this report will help you and collaborators partner for a better world for El Alto's health service providers, mothers, and children. Thank you also to the members of Dr. Leon's research group, including Rachel Burke and Anna Aceituno, for your support and advice.

Thank you to Dr. Karen Andes for your guidance on my qualitative analyses. Your expertise and practical advice was indispensable to the coherence and soundness of this report, and I really appreciate how you took such genuine interest in the story of my project.

Thank you to Katherine Zielke, my comrade in Bolivia. I appreciate so much your support in the employee interviews, and I am glad I could work with you to facilitate focus group

discussions and design and implement the nutrition education workshop. Even more importantly, thanks for your companionship and the ideas that we shared during and after our time in Bolivia.

Thank you to my colleagues and mentors in Bolivia. CAIA and the NIDI team gave me crucial support during my time in La Paz and El Alto. In particular, thank you to Mary Quispe for facilitating my interactions with hospital employees and to Jenny Limachi for administrating budgets and contracts. Thank you also to the Corea and Los Andes hospitals for your support and cooperation. The directors (Dra. Jasmín Herrera and Dr. Freddy Chamby) permitted me to work in these hospitals and reach out to their employees, many of whom graciously shared with me their perspectives on maternal and child nutrition. Dra. Volga Iñiguez of UMSA was a consistent source of support, guidance, and great conversation. And thank you to the NIDI Bioethics Committee, particularly Dr. Javier Torres-Goitia and Dr. Andrés Bartos for sharing your thoughts on maternal and child health with me.

Finally, thank you to Susana Calle. This project would absolutely have not been possible without your remarkable talent in reaching women and facilitating discussion amongst them. Your role in focus group discussion recruitment, facilitation, transcription, and analysis, as well as in developing a nutrition workshop curriculum, was fundamental to the success of this project. More importantly, your passion and talent inspired me, and your friendship reminded me of why this work is important.

To all of you in Bolivia, I sincerely hope that this report will be helpful for you. Although the challenges we face are immense, and although I am a newcomer to your communities, I hope that my perspective and this report will be valuable to you in your efforts to make your communities healthier and better places to live.

THE AUTHOR'S ROLE IN THIS PROJECT

The author (A Lipus) was involved in every stage of this special studies project. In early 2014 the author proposed the idea to his faculty mentor, JS Leon, to assess needs and opportunities for maternal and child nutrition in El Alto and consulted extensively with Dr. Leon to plan the project. Shortly after their arrival in Bolivia, R Calderón (executive director of the *Centro de Atención Integral para Adolescentes* in La Paz) strongly advised the author and KC Zielke (fellow Emory Global Field Experience student) to conduct focus groups with mothers. The initial purpose of these focus groups was to help develop a nutrition workshop for mothers, a proposed project to be undertaken by the author and KC Zielke during their three months in Bolivia. The author and KC Zielke shared R Calderón's suggestion with Dr. Leon and encouraged it as a way to make the workshops as useful as possible; the author also suggested that these focus groups could contribute greatly to the community assessment. The author helped create the focus group interview guide, was the principle designer of the health service provider interview guide, and helped design the recruitment scheme for mothers and providers. The author was also personally present for and involved in all data collection, conducting all ten interviews and taking notes (along with KC Zielke) while SC Calle (women's empowerment expert for *Centro de Atención Integral para Adolescentes*) facilitated all four focus groups. The author transcribed and anonymized all interviews and anonymized the focus group transcripts created by SC Calle. The author coded all transcripts and played the lead role in data analysis, with extensive mentoring and input from K Andes. Finally, the author wrote this special studies report, with extensive input from K Andes, JS Leon, and SC Calle.

IN MEMORIAM

In memory of Rosario ("Chusa") Calderón

Chusa, I dedicate this project to you. Thank you for your passion and guidance in our efforts—the interest you took in this project gave me strength and energy. More importantly, I cherish the bond we formed as human beings from two faraway places, and I draw inspiration from your enduring passion to improve your communities and the people within them. You challenged me to make this project better and our impact greater. We sometimes disagreed over how things should be done, but our conversations would always end in "un abrazo" or "un besito." In this report I describe the theme of a "great phantom;" I never imagined that this imagery would take on such a sad and personal tone for me. I wish this report could have reached you in time. But as you transition from this world, may your spirit be at peace, and may it continue to guide us here in working together towards a shared vision.

ACRONYMS AND ABBREVIATIONS

Appx.	Appendix
CAIA	*Centro de Atención Integral para Adolescentes* (Center for Integrated Care for Adolescents)
DHS	Demographic and Health Survey
DILOS	*Directorio Local de Salud* (Local Health Directors)
FG	focus group
IDI	in-depth interview
IRB	Institutional Review Board
MCH	maternal and child health
MCN	maternal and child nutrition
MPH	Master of Public Health
MSD	*Ministerio de Salud y Deportes* (Ministry of Health and Sports)
NDP	National Development Plan
NIDI	*Nutrición, Inmunología, y Diarrea Infantil* (Infant Nutrition, Diarrhea, and Immunology)
SAFCI	*Salud Familiar Comunitaria Intercultural* (Intercultural Family and Community Health)
SEDES	*Servicios Departamentales de Salud* (Departmental Health Services)
SUMI	*Seguro Universal Materno Infantil* (Universal Maternal and Child Health Insurance)
UMSA	*Universidad Mayor de San Andrés*
UNICEF	United Nations Children's Fund
VAD	vitamin A deficiency
WHO	World Health Organization

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INTRODUCTION

Improving maternal and child nutrition (MCN) is imperative for public health in Bolivia. Malnutrition—including suboptimal anthropometry, micronutrient deficiencies, and suboptimal feeding practices—underlies a substantial portion of maternal and child mortality, increases morbidity, and impairs development and potential [1-3]. Despite recent progress, Bolivia is on track to meet only one of four World Health Assembly targets for MCN [4]. However, under the presidency of Evo Morales (2006—present), there has been strong political will to optimize MCN through community-based approaches. A new model of healthcare (SAFCI) sets structures in place for participatory management of health [5, 6], and a national program (*Desnutrición Cero*) covers MCN interventions and emphasizes community participation [7, 8]. These initiatives complement a national health plan that originated in 1996 and provides comprehensive coverage for MCN and other health services [9, 10].

El Alto is a unique community within Bolivia. A burgeoning city on the Andean plateau above La Paz, El Alto became an independent municipality in 1985 and is now the second most populous city in the country [11]. Although anthropometric and feeding practice indicators are similar in El Alto compared to the rest of the country, the prevalence of anemia in women and children is considerably higher [12]. With a predominantly indigenous Aymara population and a low human development index compared to other Bolivian cities [11], El Alto may exhibit unique determinants of MCN services and practices. Whereas there are peer-reviewed publications providing community perspectives on determinants of MCN in different Andean regions of Bolivia [13, 14] and Peru [15], published perspectives from El Alto are lacking.

A coalition of US-based and Bolivian organizations has been conducting research on maternal and child health in El Alto since 2005. This coalition includes Dr. Juan Leon's research

group at Emory University (Atlanta, USA); the *Centro de Atención Integral para Adolescentes* (CAIA; La Paz, Bolivia); and the *Universidad Mayor de San Andrés* (UMSA; La Paz, Bolivia). Initially focusing on diarrheal disease, this coalition's research on the cost burden of rotavirus helped convince the Bolivian government to implement nationwide vaccination in 2008 [16]. Furthermore, the coalition's rotavirus research has led to six peer-reviewed publications and six funded grants to date. In March 2015, the coalition finished a study—*Nutrición, Inmunología, y Diarrea Infantil* (NIDI)—on the relationship between nutrition status and rotavirus vaccine immunogenicity in a cohort of 350 mother-infant pairs at two secondary care hospitals (Corea and Los Andes) in El Alto. NIDI provides high-quality quantitative data—on nutritional status, practices, and attitudes; immunology; and enteric infection—that will contribute to the general body of knowledge on the relationship between MCN and vaccination.

Independent of NIDI study outcomes, which could inform vaccine policy, this coalition has strong potential to contribute directly to MCN at a community level. First, the coalition has established a precedent for giving back. For example, NIDI participants receive nutrition referral assistance within the hospitals as well as personalized baby growth charts. Furthermore, one of the NIDI objectives is to provide nutrition education workshops to study participants, a project undertaken by two Emory students (A Lipus and KC Zielke) in the summer of 2014. Second, the coalition comprises a balance of capacities: scientific expertise (the Leon group and UMSA), experience with health promotion programs with Bolivian populations (CAIA), and direct links to mothers and children (the Corea and Los Andes hospitals). Therefore, there is institutional support to contribute directly to health improvement among mothers and children in El Alto.

A logical next step for the coalition is to collaborate with local partners to help optimize MCN services provided to the catchment populations of Corea and Los Andes. In order to do so,

the coalition needs more contextual information about the health care workers who deliver services and the mothers who receive them. Although several studies in the Andean region suggest factors identified by community members as influencing mothers' MCN practices (e.g., workloads and availability of traditional foods) [13-15], such proximate determinants of MCN practices and nutritional services are likely to be highly context-specific. As such, the goal of this project was to synthesize the perspectives of Corea and Los Andes health providers and of mothers in the hospitals' catchment areas with regards to challenges and opportunities in MCN. To achieve this goal, this project analyzed primary qualitative data collected in June 2014 to address three questions from the perspectives of mothers and providers:

1. What is the quality of MCN practices in the El Alto population?
2. What factors affect the ways in which El Alto mothers nourish their families?
3. What can be done to optimize MCN practices and services in El Alto?

This report culminates with recommendations, based on these perspectives, for the coalition to help optimize MCN in the catchment areas of Corea and Los Andes.

This qualitative report provides unique value to the coalition and the El Alto community. Although the coalition has access to quantitative data on MCN status and practices from the NIDI study and nationally representative surveys, this report characterizes why things are the way they are from the perspectives of stakeholders involved. This community insight will be necessary to inform the coalition's efforts to help improve the nutrition of mothers and children in this vulnerable population.

LITERATURE REVIEW

Overview and Structure

Improving maternal and child nutrition (MCN) in Bolivia is vital. A seminal 2014 global nutrition report shows that Bolivia is one of only four countries in Latin America and the Caribbean with overlapping public health problems of stunting (low height-for-age) in children under 5 years, anemia in women of reproductive age, and overweight in adults [4]. As highlighted in that report, malnutrition contributes substantially to mortality, morbidity, and economic loss. In terms of mortality, a widely cited recent review estimates that undernutrition—including anthropometric deficits, micronutrient deficiencies, and suboptimal breastfeeding—underlies 45% of child deaths globally [1]. Furthermore, maternal short stature and iron deficiency anemia "contribute to at least 20% of maternal deaths" and increase risk of neonatal deaths (reviewed in [2]). In terms of morbidity, child malnutrition increases susceptibility to infection and can produce anemia and impaired development (cognitive, behavioral, and motor), which profoundly and largely irreversibly limits human potential [3]. In spite of recent progress, Bolivia still has a high prevalence of malnutrition according to multiple metrics and is on track to meet only one of four World Health Assembly targets for MCN outcomes [4].

Improving MCN practices and status will likely have a highly beneficial impact on maternal and child health (MCH) in Bolivia. This literature review 1) depicts a broad Bolivian societal context; 2) describes the state of MCH and MCN in Bolivia; 3) describes the structure of the Bolivian health system and its MCH provisions; 4) introduces potential determinants of MCN status, highlighting a lack of literature on community perspectives towards potentially modifiable factors; and 5) introduces the city of El Alto as a unique area of high need.

Bolivia's Societal Context

Bolivia is a landlocked country in South America with three principle ecological zones: *altiplano* (high, cold, and dry Andean plateau in the west); *valle* (temperate valleys of variable elevation in the central region); and *llano* (warm, wet lowlands in the north and east) [12, 17].

In terms of demographics, Bolivia's population was 10,027,254 in the 2012 census [18], and its 2013 population growth rate of 1.7% was the fifth highest in Latin America and the Caribbean [19]. In the 2012 census, 41% of people aged 15+ self-identified as being indigenous (mostly Quechua or Aymara) [18]. While high, this proportion is a dramatic decrease from the 2001 census (61%), when Bolivia had by far the highest indigenous proportion in any Latin American country [20]. Like in Latin America as a whole [21], Bolivia has experienced a trend of urbanization. The proportion of the population living in urban settings was 66% in the 2008 Demographic and Health Survey (DHS) [12], up from 62% in 2003 [22]. Bolivia's annual growth in the proportion of the population living in urban settings is the second highest in South America [23]. Urbanization in Bolivia is mostly due to internal migration, in which migrants (mostly indigenous) settle in the suburbs of large municipalities [24].

Based on gross national income per capita, Bolivia is a lower-middle income country and the fourth poorest in Latin America and the Caribbean [25]. Nearly half (45%) of the population lives below the national poverty line [26]. However, Bolivia's estimated 2013 real growth rate of 6.8% in gross domestic product ranks second highest in Latin America and the Caribbean [27].

Politically, Bolivia has a unique and active populist identity. The government is highly decentralized, with nine administrative departments and 327 municipalities [10]. The current socialist president, former coca farmer Evo Morales, was elected in 2005 as Bolivia's first indigenous president [28]. His election was seen by many as a radical addition to the leftist wave

in Latin America [29]. Indeed, the first four years of his presidency saw a strong increase in governmental control over the economy [29], and Morales has close ties with Venezuela and Cuba [28]. Government discourse under Morales calls for "decolonization," [5] and in asserting Bolivian sovereignty Morales has frequently confronted the United States; he expelled USAID from the country in 2013, accusing the US of conspiring against Bolivian people [30]. Political changes during Morales's presidency have emphasized human rights and dignity for previously marginalized populations. A new constitution in 2009 proclaimed "political, economic, legal, cultural, and linguistic pluralism" [31]. Furthermore, the 2006-2011 National Development Plan (NDP)—the core of Morales's agenda—emphasized the dignity of indigenous cultures and was built on the concept of "living well," a concept rooted in indigenous traditions [29]. Community autonomy has also been a defining concept in the political movement, with the new constitution establishing mechanisms for community engagement in decision-making about agriculture, trade, and finance [31]. Morales easily won re-election in Oct 2014 with a 61% majority [32].

The State of MCH and MCN in Bolivia

Bolivia has some of the worst MCH indicators in Latin America and the Caribbean. The maternal mortality rate is the third highest in the region [33]. The infant mortality rate is the second highest [34] but has decreased by over 50% since 1990 [35]. Morbidity is also prevalent; for example, the two-week prevalence of acute respiratory infection (22%) and of diarrhea (26%) are high in children under 5 years [12]. Congruently, access to basic services is low—for example, Bolivia is one of only two countries in the region (along with Haiti) where fewer than half of the population uses improved sanitation (reviewed in [36]).

National data show that many Bolivian women and children have poor nutritional status (anthropometry, micronutrient status, or anemia). In terms of anthropometry, the proportion of

women of reproductive age who are overweight or obese rose from 46% to 50% between the 2003 DHS and 2008 DHS [37]. The prevalence of stunting in children under 5 years was 27% in the 2008 DHS, reaching a peak of 35% from 24-35 months [12]. (Fortunately, this prevalence is lower than the 33% seen in the 1998 and 2003 DHSs [37]). Micronutrient status—while more difficult to assess than anthropometry—is also a concern. WHO regression models estimated that 22% of preschool aged children in Bolivia had vitamin A deficiency (VAD) according to serum retinol levels, classifying VAD as a "severe public health problem" in this population. Although similar analyses found no evidence of VAD as a public health problem in pregnant women according to retinol levels, VAD was classified as a public health problem according to the modeled proportion of pregnant women with night blindness [38]. Anemia—of which iron deficiency is the single most common cause [39]—is also extremely prevalent. The 2008 DHS estimated that 38% of women of reproductive age were anemic [12], classifying anemia as a "moderate public health problem" according to WHO standards [39]. Likewise, the 2008 DHS estimated an anemia prevalence of 61% in children 6-59 months [12], the highest proportion found in nationally representative samples of any country in Latin America and the Caribbean [40] and classifying anemia as a "severe public health problem" in this population [39].

In Bolivia, maternal and child feeding practices have some strengths and some areas for improvement. In the 2008 DHS, the proportion of infants under 6 months receiving exclusive breastfeeding (the WHO recommendation [41]) was 60% [12]. This is a substantial increase from 39% in 2000 [42] and the highest proportion in Latin America and the Caribbean [43]. In terms of complementary feeding, 72% of breastfeeding infants 6-23 months old received three or more food groups and an age-appropriate daily frequency of feeding in the previous 24 hours [12]. However, no national data are available on the proportion of infants receiving a minimum

acceptable diet or minimum dietary diversity (WHO indicators for complementary feeding) [42, 44]. In terms of dietary quality, national data from the DHS suggest that the vast majority of mothers and children receive at least some nutrient-rich foods each day. By the first year of age, approximately 90% of infants were receiving vitamin A-rich foods over the previous 24 hours, with this level being sustained in years two and three of life. A similar trend occurred with iron-rich foods. Similarly, the vast majority of mothers ate foods rich in vitamin A (95%) and iron (89%) over the previous 24 hours [12]. Although these data suggest some basic dietary adequacy for mothers and children, overall dietary composition is still of concern. For example, a dissertation in the Cochabamba department of central Bolivia found that the median caloric intake among 45 women 20-52 years was only 69% of the recommended intake. Furthermore, the median proportion of caloric intake from carbohydrates was higher (71%) than the range recommended by the U.S. Institute of Medicine for this group (45-65%) [45], and the median nutrient intake was below the recommended level for 12 of the 17 micronutrients studied [46].

Coverage of recommended micronutrient supplementation in Bolivia is quite low, especially among children. Only 43% of mothers reported receiving a vitamin A supplement within two months after birth, and 25% of children 6-59 months received vitamin A over the previous six months. [12]. In terms of iron supplementation, 75% of mothers reported taking iron pills during their most recent pregnancy, although only 25% took iron for at least 90 days. Only 45% of children 6-59 months received iron over the last seven days [12]. In conjunction with the Pan American Health Organization and the Micronutrient Initiative, the Bolivian Ministry of Health rolled out distribution of *Chispitas* multiple micronutrient powder sachets (containing iron, zinc, vitamin A, vitamin C, and folic acid) to children 6-23 months old in 2006, with the target of reaching 100% coverage in 2007 [47]. Although current coverage estimates are difficult

to find, Gates foundation-funded "site visits" in 2012 and meetings with the *Ministerio de Salud y Deportes* (Ministry of Health and Sports; MSD) suggested a coverage of 59% [48].

MCN and the Bolivian Health System

Healthcare delivery in Bolivia occurs at three levels (Table R1), with three major sectors co-existing at each level: public, social security, and private. The public sector is run by the MSD and comprises 81% of total facilities. The social security sector is for the formally employed, consisting of a mix of public and private employer-sponsored health insurance plans and comprising 13% of all facilities. Finally, the private sector includes for-profit, not-for profit, and church-affiliated facilities and comprises 6% of total facilities [49, 50].

Table R1. Structure and function of Bolivian healthcare facilities; information compiled from [6, 9, 51].

Level	Function	% of Total Facilities
Primary	Ambulatory services, health promotion, preventive services, outpatient care	91-93%
Secondary	More complex ambulatory services and in-patient services in four basic specialties: surgery, pediatrics, obstetrics-gynecology, and internal medicine	5-6%
Tertiary	Highest complexity services; in-patient sub-specialty care; specialty hospitals	1-2%

A national MCH plan has existed since 1996 and has evolved in terms of who is covered and for what services (Table R2). The current system, Seguro Universal Materno Infantil (SUMI), covers a quite comprehensive set of over 500 services, with the only exclusions being for highly complex care such as organ transplants [10]. Although the public sector is the most important provider of the covered services [49], beneficiaries can also receive care at social security facilities and at private facilities that have an agreement with the government [10]. A

new law taking effect in May 2014 made some critical changes to this system. First, it unified SUMI and a parallel plan for the elderly into a single plan of 780 benefits. Second, beneficiaries now have to present an approved form of identification. And third, those going directly to secondary or tertiary care facilities for "non-urgent" or "non-emergency" conditions, without having a referral from a primary level facility, have to pay out of pocket to receive care [52-54].

Table R2. Overview of MCH national health systems in Bolivia, 1996-2015. Information compiled from [9, 49, 51, 55]. *SUMI was considerably modified by a law taking effect in May 2014 (explained in text) but still exists as a comprehensive coverage plan for MCH.

	Seguro Nacional de Maternidad y Niñez	**Seguro Básico de Salud**	**Seguro Universal Materno Infantil***
Years in Effect	1996-1998	1999-2002	2003-current
Service Beneficiaries	Pregnant women; children under 5	Women of reproductive age; children under 5; general population for certain endemic diseases	Women from pregnancy to 6 months postpartum; children under 5
Services Covered	32 total; mostly primary and secondary care	92 total; mostly primary and secondary care	547 total; primary, secondary, tertiary care

The current national MCH system, SUMI, is administered through the decentralized but hierarchical governmental structure. At a national level, the MSD sets national norms, policies, and strategies. At a departmental level, the *Servicios Departamentales de Salud* (SEDES) liaise between the national policies and the municipal implementers. The municipal level is responsible for implementing SUMI and municipal health priorities; it is composed of a *Directorio Local de Salud* (DILOS) with representatives from the mayoral office, the SEDES, and the local Vigilance Committee. Below the DILOS is the administration that occurs at the facility level [9, 49, 51].

Bolivia under Morales has demonstrated strong political will for improving MCH and nutrition. The concept of "food security and sovereignty" is ubiquitous in the NDP [56], with food security seen as a pillar of development [31]. Moreover, the new constitution proclaimed a

right to food, and the Morales administration has increased the state's involvement in ensuring food security (e.g., through state-owned insurance schemes to protect small farmers) [31]. More specific to MCH, in May 2009 the government implemented the *Bono Juana Azurduy*, a conditional cash transfer that pays women up to US $261 for attending prenatal care, delivering their babies in a public health facility, and bringing their infants in for wellness checkups [5, 9]. In the realm of nutrition, the *Desnutrición Cero* (Zero Malnutrition) program was part of the NDP and launched in 2007 [8, 56, 57]. The specific objective of *Desnutrición Cero* was to, by 2011, reduce by 50% the prevalence of stunting in children under 2; however, the plan also addresses children under 5 and pregnant/lactating women [7]. *Desnutrición Cero* targeted 166 municipalities of high vulnerability and low food security with several interventions: care of severe acute malnutrition in children, integral care for nutrition and infectious disease, food fortification, and micronutrient supplementation [7, 8]. The program also aimed to implement Integral Nutrition Units in every local health network, to be composed of a doctor, nurse or auxiliary nurse, nutritionist, social worker, and infant development expert (e.g., psychologist) [58]. An independent evaluation published in 2013 concluded that, although efficiency was suboptimal, *Desnutrición Cero* did contribute to a reduction in stunting in children [59].

Community autonomy and participation has been a core tenet of the government under Morales, including in the realm of MCH and MCN. The "cornerstone" of the health system under Morales [5] is the *Salud Familiar Comunitaria Intercultural* model (SAFCI; Intercultural Family and Community Health), put forth in the NDP [56]. SAFCI is "aimed at social participation in decision-making within the health system" [6]. "Community participation" and "interculturality" are two of the four core principles, along with "intersectoralism" and a holistic approach to health [6, 60]. SAFCI sets up structures for participatory management in which

elected local health boards "act as advocates for local health needs" [5]. *Desnutrición Cero* also embodies a community-centric approach. The first of four objectives in its strategic plan is to "strengthen community participation, through social networks and social actors, in the promotion of nutritional habits and practices of women, newborns, and children younger than 5 years, with interculturality" (translated by author), and 21% of the budget was allocated to this objective [7]. Although SAFCI and *Desnutrición Cero* have been criticized for being politicized and not well integrated into the existing health system [5, 57], they demonstrate a substantial level of consciousness and advocacy for community participation in addressing MCH and MCN.

Determinants of MCN Practices and Services

Improving MCN status in Bolivia requires improving nutrition practices that mothers employ and nutrition services (e.g., education and micronutrient supplementation) that mothers and children receive. In order to optimize MCN practices and services, it is necessary to understand the factors that contribute to them being suboptimal. This objective is in line with one of the objectives of the WHO's Global Strategy for Infant and Young Child Feeding, which is "to raise awareness of the main problems affecting infant and young child feeding, identify approaches to their solution, and provide a framework of essential interventions" [61].

Quantitative data suggest several macro-level risk factors for suboptimal MCN practices. Disaggregated 2008 DHS summary statistics show variation in maternal, infant, and young child feeding practices according to maternal education, place of residence, and socioeconomic status. For example, maternal education and wealth were consistently positively associated with consumption of vitamin A rich foods and iron rich foods among mothers as well as their children 6-35 months old [12]. Similarly, secondary analysis of the 1998 DHS showed that higher maternal education was associated with reduced risk of child stunting, with the education effect

being largely linked to mothers' socioeconomic status, geographic residence, health knowledge, and attitudes towards healthcare [62]. Similar findings have arisen in secondary analysis of DHS data from other regions of the world, such as analysis of data from four South Asian countries showing a variety of associations between infant and young child feeding practices and maternal characteristics (e.g., education), type/place of delivery (e.g., caesarean section), and care-seeking behavior (e.g., number of antenatal care visits) [63]. Finally, one study assessed determinants of breastfeeding practices through questionnaires administered to mothers at four hospitals in the La Paz – El Alto metropolitan area in Bolivia. The study found that "Latin ethnicity" (versus indigenous) was associated with a higher risk for short duration of exclusive breastfeeding and that breastfeeding was associated with other feeding practices [64]. Although quantitative studies such as these can identify fundamental factors associated with MCN practices, their relevance to health promotion is uncertain because the implicated factors are difficult or impossible to change (e.g., socioeconomic status, place of delivery) and likely have very indirect effects.

With that said, at least one quantitative study in Bolivia has highlighted community-specific, and more directly modifiable, factors influencing MCN practices. In surveys of 836 mothers of infants under 18 months old, the most commonly cited reason for ceasing breastfeeding in Cochabamba (central *valle)* was "infant old enough," whereas the most common reasons in Santa Cruz (eastern *llano*) were "insufficient milk" and "infant rejected the breast" [14]. However, the closed-ended nature of the questionnaire is a limitation of this study, and of quantitative studies in general, because it limits the flexibility for respondents to offer explanations or perspectives that were not anticipated by the researchers in advance.

In contrast, open-ended qualitative approaches have the flexibility to characterize perceived determinants of MCN practices that are unexpected or not easily quantified. As such,

qualitative methods are generally more suitable than quantitative methods are for unearthing proximate determinants that can directly inform MCN promotion [13]. Characterizing these determinants at a community level is particularly valuable within the Bolivian context of community autonomy and participation in health. One example of a community-level qualitative study on MCN practices is from the agricultural region of northern Potosí in the Bolivian *altiplano*. Through semi-structured interviews of 52 caregivers, researchers classified barriers to improving infant and young child feeding practices into four main domains: agriculture and the environment, family, health and health-seeking behavior, and livelihoods and access [15]. Another study, in the Peruvian *altiplano*, interviewed a purposive sample of seven "women with good reputations for taking care of their young children" and found that their healthy feeding behaviors were influenced by concern for their children's health, availability of traditional crops, and knowledge gained through a non-governmental organization's intervention [13].

Although the studies above provide a precedent for assessing determinants of MCN practices in Bolivia, there is very little in the literature—peer-reviewed or grey, quantitative or qualitative—regarding MCN service quality and its determinants. Higher quality of services such as nutrition education and micronutrient supplementation can be integral in improving MCN practices and status in Bolivia, and several large scale grants from agencies such as the World Bank [65] and UNICEF [66] include improved MCN service quality as an objective. However, "quality" or "effectiveness" are often undefined or questionably defined (e.g., the quality indicator for a pilot project in El Alto is more of a quantity/coverage indicator: "number of households that receive the complete package of interventions" [67]). This lack of a cohesive framework impedes the ability to retrieve and compare prior research, and the author found no peer-reviewed publications on a community perspective towards MCN service quality in Bolivia.

In addition to a gap in the literature on MCN service quality in Bolivia, there is also very little information regarding the perspectives of health service providers. Elegant examples of qualitative, peer-reviewed publications have compared the perspectives of pregnant women and community health workers on root causes of malnutrition in Bangladesh [68] and of mothers, mothers-in-law, and traditional healers on causes of suboptimal infant feeding practices in Kenya [69]. Triangulating perspectives in this way—from mothers and their families on one side and health providers on the other—could be highly informative for program planning. However, the author found no peer-reviewed publications from the Andean region on providers' perspectives toward MCN. Nevertheless, one breastfeeding promotion program in the city of El Alto used focus groups to elicit community health workers' experience with the program. While these workers were motivated by the possibility of learning about health and receiving compensation, they also felt undermined and frustrated by a lack of support from the community and municipal government, lack of respect from health care personnel in the facilities where they worked, lack of pay, and inconsistent material incentives [70]. Such information may be specific to that program but provides a basis for addressing the provider perspective on MCN in this city.

El Alto: a Unique City of High Need

El Alto, Bolivia, the site of this project, is a rapidly growing city with unique social structure. The city sits at 13,500 feet on the *altiplano,* above the sharp valley of La Paz. Once a suburb of La Paz, El Alto has increased 300 fold in population since 1950, became an independent municipality in 1985, and is now the second most populous city in Bolivia [11]. In fact, its 2011 population (974,754) was larger than that of La Paz (852,438) [71]. El Alto's population is predominantly indigenous, with 74% of residents identifying themselves as Aymara in the 2011 census, many of them recent migrants who maintain strong ties to the

altiplano countryside from which they emigrated [11]. El Alto has a rich political history, being seen as a city of protest and revolution. It is a stronghold of support for Morales but is also politically polarized, largely along ethnic lines [11]. El Alto also ranks much lower on the human development index than any of the nine departmental capitals of Bolivia [11] and occupies its own municipal poverty stratum in the 2008 DHS (along with strata for "high poverty," "medium poverty," "low poverty," and "departmental capital") [12]. Compared to nationally, El Alto shows fairly similar indicators for anthropometric status and feeding practices, but exclusive breastfeeding is more common and anemia is more prevalent (Table R3).

Table R3. MCN status and practices in El Alto compared to nationally. All data are summary statistics from the 2008 DHS [12] with the exception of exclusive breastfeeding in El Alto (the DHS did not report breastfeeding stratified by municipality). The proportion of infants in El Alto exclusively breastfed comes from 2003 data from a breastfeeding promotion program [70].

Indicator	Demographic	El Alto	Bolivia
Anthropometry			
Stunted	Children <5 years	23%	27%
BMI above or below healthy range	Women 15-49 years	56%	52%
Anemia			
Anemic	Children 6-59 months	71%	61%
	Women 15-49 years	53%	38%
Feeding Practices			
Exclusively breastfed	Infants <6 months	82%	60%
≥3 food groups, age-appropriate freq.	Breastfed infants 6-23 months	67%	72%
Vitamin A-rich food in previous 24 hours	Children 6-35 months	93%	91%
	Mothers 15-49 years	98%	95%
Iron-rich food in previous 24 hours	Children 6-35 months	89%	84%
	Mothers 15-49 years	95%	89%

As with the nation as a whole, El Alto is served by a mix of health facilities at different levels of care and from different sectors. As of 2010, there were 77 primary care facilities, six secondary care facilities, and no tertiary care facilities in the public, social security, and private

sectors [72]. Three secondary care hospitals provide MCH services in El Alto [70] (Table R4). Each of these secondary level facilities is public and has its own network of other facilities [72].

Table R4. Secondary care facilities providing MCH services in El Alto, Bolivia. Information from the La Paz departmental health service [72].

Hospital	# Facilities in Network	# Maternity Beds	# Other Beds
Boliviano Holandés	13	25	84
Corea	24	30	34
Los Andes	20	36	25

To the author's knowledge, the only published findings from El Alto providing a community-level perspective on MCN practices or services are from the aforementioned breastfeeding promotion program. This program targeted the network of Hospital Corea but also evaluated nutritional indicators at Hospital Los Andes and Hospital Boliviano Holandés and held focus groups with community health workers [70]. Since this program took place a decade ago, it would be of interest to gather current information from providers involved in MCN in this city.

Summary

There is a need for more information regarding community-level determinants of MCN practices and services in El Alto, Bolivia. Bolivia is a relatively poor country where MCN is a serious public health problem, but there is strong political will to address the situation by drawing upon community-based perspectives. Whereas quantitative studies suggest macro-level risk factors for suboptimal MCN status and practices, qualitative data are more suitable for eliciting more proximate, community-specific, and modifiable determinants from the perspectives of mothers and health service providers. This qualitative community-based perspective is almost entirely lacking in the literature on El Alto, a rapidly growing city with unique social characteristics and potentially unique determinants of MCN.

METHODS

Goal, Overall Approach, and Staff

The goal of this project was to synthesize perspectives on challenges and opportunities in maternal and child nutrition (MCN) from providers at the Corea and Los Andes hospitals (El Alto, Bolivia) and mothers in the hospitals' catchment areas. This qualitative assessment used in-depth interviews with providers and focus group discussions with caregivers of children. Data collection took place in June 2014 and was conducted in Spanish. The author had the main role in designing and conducting the interviews. The author and a fellow Rollins MPH student (KC Zielke) hired a Bolivian mother with 15 years of experience working with women's groups (SC Calle) to recruit and facilitate focus groups. Since this project was part of an internal evaluation and not focused on creating generalizable knowledge, it was exempt from Emory IRB review.

Project Site and Population

This project took place in El Alto, Bolivia, a quickly growing city (2011 population: 974,754) of predominantly indigenous inhabitants on the *altiplano* (elevation: 13,500 feet) above La Paz [11, 71]. The Corea and Los Andes public hospitals are two of the three secondary care facilities providing MCH services in El Alto, each with its own network of primary care facilities (Table R4 from Lit Review). For the interviews, the population of interest was all health service providers at the Corea and Los Andes hospitals whose work involved MCN. For the focus groups, the population of interest was caregivers of children under 24 months living in the catchment areas of the Corea and Los Andes hospitals.

Data Collection Tools

Interviews. The author developed a three-page structured but open-ended guide (Appx. 1) in May – June 2014 with feedback from the NIDI principal investigator (JS Leon) and a PhD student who was coordinating the NIDI field team (RM Burke). The author developed the guide in English and translated the final version into Spanish. Questions aimed to elicit reflection on the current state, current needs, and future suggestions with respect to MCN. There were four topics pertinent to this project: 1) health and nutrition of mothers and children; 2) MCN services: appraisal, problems, and suggestions; 3) reflection on the process of modifying services; and 4) reflection on experiences with the NIDI study. There was no pilot testing due to time constraints. However, the author slightly modified the guide and the conduct of interviews (e.g., pace, wording of questions) in accordance with prior interviews. The process also depended on the dynamic of each interview (e.g., pace and rapport). For example, the order of questions differed slightly across interviews, some questions were not asked (e.g., if there were time constraints or if the interviewee already spontaneously covered that topic), and some unplanned probes or clarifications were asked.

Focus Groups. The author, KC Zielke, SC Calle, and the Executive Director of CAIA (R Calderón) developed a three-page guide in Spanish (Appx. 2). Content covered six main areas: 1) identification of healthy and unhealthy foods, 2) family nutrition habits, 3) determinants of family nutrition status/practices, 4) prior experiences with nutrition education, 5) cultural beliefs regarding nutrition, and 6) considerations for developing nutrition education workshops. Areas 1, 2, and 5 were principally free listing activities whereas areas 3, 4, and 6 involved more discussion. For the same reason as the interviews (time constraints), the focus groups were not pilot-tested. The order and content of questions differed slightly across the focus groups in

accordance with the group dynamic and opportunity to enrich discussion in certain areas. The author and KC Zielke also developed a 1-page survey (Appx. 3) to quantitatively characterize the focus group participants. This survey was not pilot tested because 9 of the 12 questions were demographic questions (age, ethnicity, civil status, employment, children, and household occupancy) copied directly from the existing, validated NIDI survey. Of the remaining questions, two were yes/no questions about receiving government benefits, and the other was adapted from the Spanish version of the Household Food Insecurity Access Scale [73].

Eligibility, Sampling, Recruitment, and Assent

Interviews. The only inclusion criterion was current employment as a health service provider at Corea or Los Andes. Hospital employees not providing health services (e.g., administrative staff) were excluded. The sampling approach was convenience sampling seeking maximum variation in employment positions. With help from the Bolivian NIDI coordinator (M Quispe), the author contacted providers in person who had a working relationship with the NIDI team. The author requested interviews with 11 providers, offering a beverage and light snack at a local café to thank them for their time. The author then arranged a meeting with those indicating interest (10 of the 11). Upon meeting for the interview, the author gave all interviewees an information sheet (Appx. 4) and verbally summarized the contents of this sheet, emphasizing the voluntary nature of the interview and all questions. All interviewees were guaranteed confidentiality in that no report or communication to other hospital employees would link names, job titles, or other identifiable information to what was said in the interview. The author asked for and obtained verbal assent from all interested providers to conduct and record the interview.

Focus Groups. Focus groups were conducted with a purposive sample of four experiential strata: women who were participating in the NIDI study and women who were not,

from each of the two hospitals' catchment areas. The only inclusion criterion for NIDI participant focus groups was being a participant in the NIDI study. The only criterion for the non-NIDI participant focus groups was being the primary caretaker of a child under 24 months. (All NIDI participants met this caretaker criterion by virtue of their NIDI study eligibility.) NIDI participants were excluded from the non-NIDI participant focus groups. The Bolivian facilitator (SC Calle) recruited a convenience/snowball sample of women: for NIDI participants, she called women who had a history of reliable follow-up in that study; for non-NIDI participants, she invited women in person in the vicinity of the hospitals and asked them to invite others. The team also posted flyers in the hospitals with the cooperation of staff. All potential participants were offered a beverage and snack for their time. Upon arrival, each woman received an information sheet (Appx. 5) and a verbal explanation from a member of the team. At this time the team asked for and obtained verbal assent from each mother to participate in the discussion and complete the accompanying survey. SC Calle then addressed the whole group, reiterating the purpose of the focus groups, emphasizing its voluntary and confidential nature, and asking participants for permission to record the discussions. No participants objected. The final sample consisted of four focus groups. As all but one participant was the biological mother of the child under 24 months, this report hereafter refers to focus group participants as "mothers."

Data Collection

Interviews. The author conducted all interviews in Spanish in June 2014, and KC Zielke was present and took notes for six of the 10 interviews. Interviews took place either at the hospitals (usually in a private location such as an office) or at a local café, lasted 30-77 minutes, and were digitally recorded. The author transcribed all recordings in Spanish and de-identified transcriptions between June – October 2014.

Focus Groups. All four focus groups took place in cafés across the street from the respective hospitals on June 24-25, 2014. A member of the team verbally administered the survey in Spanish to all participants prior to the discussions; the author and KC Zielke later double entered and reconciled all survey data in Microsoft Excel. Focus groups lasted 77-101 minutes and were digitally recorded. SC Calle transcribed all recordings in Spanish in July 2014, and the author de-identified transcriptions between July – October 2014.

Data Analysis

This project used an across-case approach to descriptive thematic analysis. The focus was on capturing mothers' and providers' descriptions of the status of MCN (Aim 1), why MCN is the way it is (Aim 2), and what can be done to improve MCN (Aim 3). Analysis was organized deductively into the three aims, but trends and themes were identified inductively within each aim. Inductive trends were concepts that arose frequently and pervasively across the interviews and/or focus groups; these were principally identified through development of taxonomies (see below). Major inductive themes were unifying mindsets [74] that linked together the perspectives of different participants. Throughout analysis, there was an emphasis on comparing transcripts and inductively categorizing these different perspectives within each Aim (e.g., perspectives on breastfeeding, complementary feeding, etc., under Aim 1).

Analysis began with a systematic and rigorous coding process. The author imported all transcripts, in Spanish, into MAXQDA11 and then read all transcripts at least twice, applying memos to facilitate identification of potential themes. With assistance from a qualitative research faculty mentor (K Andes), the author iteratively developed a codebook to apply across all transcripts (interviews and focus groups). Codebook development involved three rounds of defining codes, applying codes to between two and nine transcripts each, and revising code

definitions or merging codes based on lessons learned during each round. (Throughout the coding process, a code was applied to every text segment that met the definition for that code; many segments received multiple codes since they were applicable to multiple codes.) At this point, no further revisions were deemed necessary, and the codebook was finalized (Appx. 6). This codebook was primarily inductive: only four of the 15 codes (Health Conditions, Nutrition in Population, Nutrition Services, Suggestions) were determined a priori based on the Aims, whereas the other nine were developed based on common content areas in the transcripts. The author applied the finalized codebook to all transcripts twice (at least one week apart) and reviewed each transcript to identify discrepancies between the first and second coding. Almost all discrepancies were from inadvertent omission—neglecting to apply a code to a relevant segment in one of the two coding iterations—rather than from applying a code erroneously. The author reconciled all discrepancies to produce a final coded version of all transcripts.

With all transcripts now fully coded, analysis focused on a code-by-code review of coded segments (across all transcripts) pertinent to each Aim (Table 1). Some codes were pertinent to more than one Aim (e.g., the "Supplementation" code in some instances referred to a description of nutrition supplement use [Aim 1] and in other instances referred to a suggestion to improve MCN [Aim 3]). Most, but not all, codes were multifaceted, and therefore the author created an inductive taxonomy during the code-by-code review to help structure the content. For example, the code of "Nutrition in Population" was classified into specific categories: nutrition in general, breastfeeding, complementary feeding, dietary composition, and dietary quantity. Within each code or taxonomy, the author tabulated transcripts where applicable to help gauge consensus or lack thereof on certain topics (e.g., the number of providers who described breastfeeding practices mostly favorably versus mostly unfavorably). The codes and their respective

taxonomies provided an organizational structure for compiling results, with a focus on capturing mothers' and providers' perspectives in a systematic but inductive manner. Through iterative conversation with K Andes and regular email correspondence with SC Calle, the author conceptualized unifying themes that linked together MCN status and determinants (as perceived by participants) as well as their suggestions.

Brief quotes, translated from Spanish into English by the author, were integrated throughout the Results section of this report to illustrate themes or trends in the exact words of a mother or provider. The vast majority (20 of 25) of mothers who participated in focus groups were quoted in this report (from one to five times each). Quotes from mothers are identified by pseudonyms. Quotes from providers were identified with alphanumeric identifiers (no pseudonyms were used in order to maintain gender confidentiality). Eight providers were quoted (from four to six times each). The remaining two providers who were interviewed were not quoted directly in this report, but their comments were included in the overall analysis and presentation of results.

Table 1. Codes analyzed for each Aim. Only some of the 15 codes (definitions in Appx. 6) were analyzed for each aim, and some (e.g., Supplementation) were pertinent to more than one Aim.

Aim	Pertinent Codes
1	Food Quality, Health Conditions, Nutrition in Population, Supplementation
2	Evidence, Health System, Knowledge, Management, Motivation, Nutrition Services, Resources, Sociocultural Context, Taste
3	Management, Media, Suggestions, Supplementation

RESULTS

> So even though infectious diseases are very well recognized here—between the respiratory diseases, digestive, skin, etcetera, there are many diseases—I believe that a *grave* problem for us is the nutrition problem. It is what, like I am telling you, is behind these diseases. It is nutrition that is going to make these children end up in the hospital. Or end up dying. Whereas a well-nourished child, probably, diarrhea is not going to send him to a cemetery, in our case, it will. Because the nutrition problem is, perhaps, the great phantom that is hidden behind the common diseases. (Provider P9[*])

This provider spoke of a "great phantom" ("*gran fantasma"*) to describe the importance of nutrition and its relation to disease and death, but this imagery also illuminates two major findings from this project. First, this community is in a transitional state, trying to reconcile shadows of a past life while facing an unfamiliar and unnatural present life in the city. Second, mothers and providers want to revitalize nutrition education through tangible, natural, and lively approaches. This Results section has three parts: I) a description of participants, II) their views on the current situation of MCN in El Alto, and III) their suggestions to improve the situation. This presentation of results combines a description of how things are (Aim 1) and why things are the way they are (Aim 2) into one section (Section II), since participants did not clearly separate the two concepts and since the concepts are best understood in the context of each other.

I. Characteristics of Participating Mothers and Providers

A total of 11 providers (in 10 interviews) and 25 mothers (in four focus groups) participated. Provider interviews encompassed a diversity of job positions at Hospital Corea and Hospital Los Andes (Table 2). Focus groups included NIDI participants and non-NIDI participants from each hospital's catchment area (Table 3). Most mothers identified themselves as indigenous (Aymara), but there was notable variation within and across focus groups in mothers' reported ages, number of children, household size, civil status, and food security.

[*] For confidentiality, a unique alphanumeric identifier is given for each provider (see Methods).

Table 2. Job positions of Hospital Corea and Hospital Los Andes providers who were interviewed.

	Hospital Corea	Hospital Los Andes
Nurse	1	1*
Nutritionist	1	1
Pediatrician	2	2
Social worker	1	1
TOTAL	**5**	**5**

*The Los Andes nurse interview consisted of two interviewees, one who joined nine minutes into the interview after receiving the information sheet and assenting to participate.

Table 3. Characteristics of the four focus groups with mothers of children under 24 months.

	Corea NIDI	Corea non-NIDI	Los Andes NIDI	Los Andes non-NIDI	TOTAL n (%)
Catchment area	Corea	Corea	Los Andes	Los Andes	--
Total # participants	7	4	7	7	25 (100%)
NIDI participants	7	0	7	0	14 (56%)
Indigenous (Y)†	4	3	4	5	16 (64%)
Currently working (Y)	1	3	2	2	8 (32%)
Juana Azurduy *recipient (Y)*^	5	2	5	3	15 (60%)
Subsidio *recipient (Y)* ††	0	1	0	1	2 (8%)
Age (range)	18-23	20-36	20-43	18-37	18-43
# children (range)	1-3	1-2	1-6	0-5	0-6
# people in house (range)	5-10	4-8	4-11	3-8	3-11
Civil Status					
Married and Cohabiting	3	2	2	2	9 (36%)
Consensual Union	1	2	5	4	12 (48%)
Separated/Divorced	0	0	0	0	0 (0%)
Single	3	0	0	1	4 (16%)
Worried about food^^					
Never	1	0	1	0	2 (8%)
A few times	2	2	4	1	9 (36%)
Sometimes	2	2	0	6	10 (40%)
Frequently	2	0	2	0	4 (16%)

†All but one woman identifying as indigenous said she was of Aymara descent. ^*Bono Juana Azurduy:* a conditional cash transfer provided by the government for attending MCH visits. ††*Subsidio:* a food subsidy provided to government employees' families. ^^In response to the first question from the Household Food Insecurity Access Scale [73] ("In the past four months, how often did you worry that your household would not have enough food?").

II. The Current Condition of MCN: "It is not natural anymore"

> Facilitator: What do you all think causes malnutrition?
> Silvia[†]: I think that it is the foods, because now they are no longer natural. Now they inject them, they are *injertos* [genetically modified / artificially propagated], they make them—they inject them to be bigger, to taste better, and it is not natural anymore, including the potato, all the vegetables. It is not natural anymore.

In denouncing foods that are not "natural," Silvia exemplified an overarching theme that MCN in El Alto is in a conflicted state between a past life in the countryside and a present life in the city. This theme had two intertwining components. One, in the sense expressed by Silvia, was a common trust in "natural" foods and a corresponding apprehension towards the "chemical" characteristics of nutrition in the city. The other, in a different sense of the word "natural," was an implicit sense that good nutrition does not come naturally to mothers or providers in today's world. Instead, they unsuccessfully try to balance the complex influences of the past and the present, each of which has aspects that help and aspects that hinder. The following sections describe this interplay between the past and the present in relation to three realms of MCN: infant feeding practices, family eating habits, and nutrition services (e.g., nutrition consultation) given by providers.

IIa. Infant Feeding Practices

Overall, mothers and providers perceived that infant feeding practices in El Alto are mostly good during the early infancy but become very problematic as the infant approaches one year old. Four providers, for example, saw exclusive breastfeeding as a bright spot among MCN practices. However, one of these four also noted that Bolivia still has room to improve, mentioning favorable WHO statistics but then remarking, "This theme needs to be kept up,

[†]For confidentiality, each mother is identified with a unique pseudonym (see Methods).

increasing breastfeeding" (P6). However, two other providers said that many mothers exclusively breastfeed for too long. These comments were consistent with strong concerns about the timing and quantity of complementary feeding in the population. These concerns were exemplified by one provider, who described it as "a huge weakness" that mothers often initiate feeding too early (at three or four months) or too late (describing children "receiving only breast milk *at a year of age*"), noted that mothers typically do not know how much they are feeding their children, and stated that they confuse teaspoons with tablespoons (P2). Although neither breastfeeding nor complementary feeding were prompts in the focus group guide, many mothers expressed a desire to learn more about complementary feeding (see section IIIa).

Traditional beliefs were prominent in discussions of infant feeding. Mothers readily listed foods that, according to tradition, harm babies' appearance or development (Section IIb, Table 5). In all but one focus group, for example, multiple mothers said that they had heard that infants should not eat figs, avocados, or cheese, because these foods will prevent the baby from learning to speak properly. Typically mothers reported hearing this information from their mothers or mothers-in-law. Many exhibited doubt over the validity of this information, as they would often laugh when discussing these beliefs. Others, however, put more credence into cultural wisdom:

> So they have told me not to eat figs either, because figs make a child mute, and that is true because when my little brother was six months old, my dad had said, "He has to eat everything," and they had given him figs, and my little brother was late in learning to talk. He stutters. (Elizabeth)

Even though mothers differed in the degree to which they judged these beliefs to be credible, they readily recited these beliefs. In contrast, they typically reported receiving little or no nutrition information from a formal health facility (see section IIc).

In addition to traditional beliefs, evidence from personal experience or observation of peers also arose commonly in mothers' discussions of infant feeding practices. Many said that

their or their baby's nutrition status resulted from a specific practice (e.g., "I was mute and those [carrot greens] cured me" [Yolanda]). More generally, when asked whether they felt that other peoples' nutrition advice had served them well, many referenced the health of their baby as evidence (e.g., "[It has gone] well because the baby is well" [Angela]). Many mothers also drew conclusions based on others' actions and outcomes. For example, one provided her observations as evidence confirming that the precautions she took while breastfeeding were appropriate:

> I see some babies, one sees them in the street. Some babies, their moms are always changing [their diapers], you know? Their butts are quite chafed. In that I realize, because I have taken care of myself when I was breastfeeding, I didn't eat much salt, I didn't eat much sugar, soda, or condiments, and my little ones have never had rashes on their butts. (Gertrudis)

As for providers, their comments on infant feeding in the population focused on several aspects of contemporary life that they saw as influencing practices in a mostly negative way. One of the major perceived problems was bottle-feeding. Six providers said that many mothers bottle-feed their infants with formula milk, cow's milk, or yogurt. Five of these six explicitly regarded bottle-feeding as being misguided and/or contributing to infant diarrhea. In contrast, the sixth provider appeared to view bottle-feeding with formula as a positive thing, lamenting the fact that their hospital has insufficient supplies of formula milk for abandoned children. Another aspect of contemporary life that was seen as a challenge was the changing lifestyle of women: three providers noted that exclusive breastfeeding practices are becoming less optimal as more mothers are starting to study or work. For example, one noted: "When the mom now lives in the city, she no longer [breastfeeds] much because she works" (P3).

IIb. Family Eating Habits

Mothers and providers described family eating habits as typically unhealthy in terms of quantity and/or quality. Although there was variety in family meal habits reported by mothers,

the commonly reported routine was a light breakfast, a lunch of vegetable soup and/or a *segundo* (starchy accompanying dish), and a very light or nonexistent dinner. Overall, when asked whether their families enjoy "good nutrition," responses were mixed fairly evenly across and within focus groups. Approximately a third of mothers said yes, whereas approximately a third said no. The remaining third took a nuanced stance, saying that nutrition varies according to available resources and/or that certain people in the family are better nourished than others are.

Nuances of family nutrition typically involved scarcity and rationing but also included concerns about overconsumption. One provider said that some families eat only one meal a day, and there was evidence of unequal distribution of meals within families. According to two providers, women feed their husbands and children first (and/or more), often leaving little or nothing for themselves. These statements were corroborated in the focus groups. For example:

> And I think I have adopted the same [habit as my family growing up], because I always give to my husband almost double what I usually eat. I think his work is very tiring. He travels a lot, so I think he loses more, and I feed him the best. And regarding my daughter, since she is a baby, you need [to give] her baby food and the breast, whatever she needs, also. (Sara)

However, preferential rationing for men and children was not universal. One mother said that while she prefers to feed her children before herself (or her husband), the gender of her children does not affect how she distributes food to them. And one said that in her family growing up, whoever was hungriest ate the most. While dietary scarcity was a clear problem, some mothers also expressed concern about excess. For example, one worried that she was feeding her baby too much, and one said she ate too much during pregnancy and cannot lose that weight now. Two providers noted that under- and over-consumption can occur within the same person at different stages of life (too little between pregnancies but too much during pregnancy; too little during times of economic trouble but too much when more money is available).

In addition to problems with the amount of food, participants expressed great concern about dietary quality. For example, one mother said, "Mostly, we do not buy vegetables; mostly, we buy junk food" (Sofia). (Mothers frequently used the term "junk food" [*comida chatarra*] and defined it as foods such as fried chicken and popcorn [Table 5]). Similarly, a provider said:

> We are more accustomed to eating *comida rápida* [fast food]. We are accustomed to eating, or, yeah, purely carbohydrates…The majority…are not accustomed to eating vegetables, something healthy, and they don't balance. (P10)

On the other hand, several mothers mentioned that they conscientiously use "mostly" or "purely" nutritious items and/or avoid unhealthy items.

Although concerns about dietary quality were common, there were some differences of opinion about what is and is not healthy. On one hand, mothers mentioned similar examples of "healthy" foods/liquids (Table 4) as well as foods/liquids they saw as "unhealthy" (Table 5). On the other hand, there was a lack of consensus with respect to the healthiness of some dietary staples. Four providers lamented the fact that the typical diet consists mostly of carbohydrate-rich foods such as rice, potatoes, bread, and noodles. Several mothers were also critical of these foods, with one (Judith) referring to them as "junk food" and multiple mothers mentioning that foods like these give babies colic. In contrast, at least one mother in three different focus groups mentioned the potato as an example of a healthy food. Similar disagreements arose with respect to soups, with one woman embodying the uncertainty over their healthiness:

> Facilitator: Do you know or use some foods or liquids that may be healthy?
> Julieta: In liquids I would say the same [as other moms have], milk, oatmeal, quinoa. I don't know also if it would be what we eat in our lunch, in our vegetable soup. That is what I would be thinking a little bit.

Many suggested that the healthiness of staple foods depends on how they are prepared. For example, four providers said that the typical El Alto soup is nutrient-poor due to being dilute, lacking protein-rich ingredients, being cooked too long, or a combination thereof. Some mothers

also noted that preparation matters; e.g.: "A concentrated, boiled chicken soup, to me, is healthy. But if you grab the chicken and fry it in a liter of oil, to me, it is no longer healthy" (Sara).

Table 4. Foods explicitly described by mothers as being "healthy." Categories (in italics) are a mix of deductive and inductive categories created by the author. The first seven categories are the food groups as defined by Bolivia's MSD, and specific examples mentioned in at least two focus groups (FGs) are listed in alphabetical order below each category. The last three categories were commonly mentioned food types that did not fit into any one of the MSD's food groups. The middle column lists the number of focus groups in which each food category was specifically described or listed as being "healthy."

Food / food group / category	**# FGs (n=4)**	**Illustrative quote(s)**
Cereals, legumes, and root vegetables Cereals: amaranth, barley, *cañahua*, oatmeal, quinoa, wheat, *willkaparu* Legumes: lentils, lima beans, peas, soy Root vegetables: *chuño/tunta*, potato	4	"The most nutritious to me is oatmeal." (Antonia) "[Eating] quinoa made me produce a lot of breast milk." (Angela)
Vegetables Carrot, cauliflower, celery, chard, spinach, squash	4	"There are vitamins in vegetables." (Isabel) "All of the vegetables." (Violeta)
Fruits [no specific examples commonly given]	4	"A person has to feed themselves with fruits, vegetables." (Claudia)
Milk and Derivatives Milk, yogurt	4	"One cannot miss out on milk." (Yolanda)
Meats, organs, eggs, vegetable mixes Egg, fish, liver, sesame	4	"More than anything, fish…that is the best thing that gives you strength." (Daniela)
Oils and Fats	0	
Sugars	0	
Soups (with vegetables and/or cereals and/or meat)	4	"A concentrated, boiled chicken soup, to me, is healthy." (Sara)
"Liquids"	4	"More liquids to have [breast] milk." (Noemi)
"Natural" foods	3	"Good nutrition would be feeding oneself correctly, purely natural foods." (Gertrudis)

Table 5. Unhealthy or harmful characteristics of certain foods as reported by mothers. Foods are categorized inductively according to the negative characteristics that mothers said that they have or that mothers had heard that they have. Foods mentioned in two or more focus groups are listed in alphabetical order as examples. Since mothers did not consistently distinguish among the sources of information for these beliefs (e.g., doctors, family, friends), to what degree they believed the information, or the life stage(s) at which the foods are supposedly harmful (pregnancy, breastfeeding, complementary feeding), these distinctions are not made in the table.

Effect	**Examples**
Produces negative effects in the mother	
Will not have breast milk	Bread, "dry foods"
Produces negative effects in the baby	
Dark/spotty skin	Chilies, coffee
Won't learn to speak properly	Avocado, cheese, fig
Nervousness	Chilies
Colic	Bread, noodles, potato
Digestive problems (diarrhea, constipation)	Citrus, potato
"Harms" the baby	Alcohol, *mate*
Is not nutritious	
Lacks nutrients	Soda
Is "junk food" (*comida chatarra)*	French fries, fried chicken, popcorn, "sweets"
Is unhealthy, but no explicit explanation provided	Alcohol, bread, fats, *mate*, noodles, popcorn, potato, soda

Whether the perceived problem was one of quantity, quality, or both, there was a clear discrepancy between the ideal and reality in terms of family meals. For example, although most mothers said that breakfast is the most important meal of the day, or of equal importance to lunch, many described their breakfast habits as being inadequate and/or something they would like to change. This juxtaposition was exemplified by a comment from one mother:

> Well I think, as they have told me, breakfast is the most important meal. There is where you have to eat the most, decreasing little by little until dinner. But in general I eat a breakfast of coffee with bread, Chocolike [a powdered chocolate drink], nothing more. (Silvia)

Furthermore, several mothers and providers used remarkably similar language that—although somewhat ambiguous in meaning—conveyed a sense that mothers' feeding habits are pragmatic but not ideal (Table 6).

Table 6. Comments suggesting mothers' pragmatic feeding practices. Underlines are added for emphasis, with the original Spanish phrasing provided in brackets due to the ambiguities in translating this phrasing from Spanish to English.

Source	Comment (person)
Mothers	"But sometimes in the morning one leaves flying to work and gives what she can [*le da lo que puede*] [to the baby] many times, no?" (Marisol)
	"Sometimes, we eat whatever is available [*haya lo que hayga comemos*]. Yes. We are not always consuming milk, like they are saying." (Julieta)
	"We get home, let's say, you're already hungry, you make yourself rice or noodles, or what have you [*lo que sea*]*."* (Claudia)
	"For lunch I make whatever little thing [*hago cualquier cosita*], no? Whatever comes to mind. Broth, soup, more than anything." (Monica)
	"We make a breakfast of tea, or coffee, hot chocolate, with a sandwich of cheese, or egg, or whatever is available [*lo que hayga*]." (Gertrudis)
Providers	"'We buy whatever I am able to [*lo que me alcance*],' the moms tell you." (P5)
	"[A mother] will say, 'Well, we give them whatever we may have [*lo que tengamos*].'" (P9)

A major reason offered for suboptimal family meal practices in El Alto was that the city has lost touch with the virtues of "traditional," "natural" foods. Three providers espoused the benefits of traditional foods—particularly cereals—with one saying, "Malnutrition begins when people come from the countryside to the city, because they no longer have the foods that they had over there" (P3). Similarly, across three focus groups there was a sentiment that "natural" foods were healthy, whereas foods with "chemicals" were unhealthy. In fact, this dichotomy seemed to largely define the healthiness of a food in the minds of some mothers:

> To me, for example, noodles are not nutritious at all. Whereas rice does have a little bit of nutrition, I believe, because it is natural, in contrast, noodles, they manufacture them and they come with various chemicals. (Maria)

In contrast to traditional foods, which were seen as desirable, longstanding gender norms were seen as a major challenge. Several providers said that women are expected to fulfill the role of raising children while also contributing economically. One noted, "I don't know in younger

couples, but in others, no, there's no support for the woman, so the woman has to do everything" (P4). Providers also mentioned "irresponsibility" and "abandonment" by men, and one argued that *machismo* is a root cause for "maternal mortality, domestic violence, adolescent pregnancy, malnutrition, everything" (P6). In the eyes of one mother, older women play a strong role in propagating *machismo*:

> Before, I thought that women [should eat first], but my mother-in-law has made me *machista* again. My mother-in-law is *machista*. "Since men work, they get more tired, so they always have to eat a little more. Women, not so much." That's what my mother-in-law has told me. (Noemi)

However, two individuals showed how the influence of male partners can be mixed. One provider said that *machismo* in El Alto "is quite notorious" but also that some husbands are very supportive and that these families are the ones best able to solve nutrition problems (P5). And a mother said that fights with a partner can make a woman not want to cook or eat but also said:

> But look, my husband says mainly, he wants to give priority to women. Why? Because he says—my husband is a chauffeur—he says when he gets hungry, he eats, no? So we don't have to wait for him, "So just serve yourselves, eat," he says. (Yolanda)

In addition to these gender norms, there was a consistent sentiment that family and social networks play a pre-eminent role in a mother's decision-making about meals. Two providers mentioned the role of the immediate family in shaping habits, and many mothers likewise said that one's food preferences depend on what one ate when they were young. Many mothers also mentioned that it is difficult to balance the tastes of different members of the family and that some members do not eat healthy things like vegetables or have no appetite at all. One even said that some mothers give their child "junk food" in order to avoid a fight. However, the immediate family—particularly one's baby—was also a strong motivator for mothers. As one said, "More than anything I have changed because of my baby, sincerely, because perhaps if I had not had my baby I would have continued with my bad nutrition habits" (Maria). In addition to the

immediate family, extended social networks also had a big role in the discussion of family meal habits. Many mothers described exchanging information with other mothers or, as previously described (section IIa), observing the consequences of other mothers' feeding practices. In most cases this exchange of information was seen to be helpful, but in other cases mothers noted how the social environment in El Alto can lead to unhealthy choices:

> And also the influence of the people, sometimes the people around you. "He is buying a soda, so I also am going to buy one." Sometimes society itself tells you, "You have to buy this, this." "I have money, I am going to buy what they were eating." [laughter] (Elizabeth)

In addition to these sociocultural influences, there was a nearly unanimous opinion that resource constraints are critical determinants of meal habits. In every focus group and interview except one, there was at least one mention that lack of money or other material resources impinge upon good nutrition. (The one exception was a provider who argued that healthy foods are available but that mothers need to learn how to use them.) Some mothers said that lack of money is their main or only barrier. Likewise, several providers acknowledged that because of such constraints, mothers often cannot follow providers' advice. For example:

> We say to them, "This [food] is good, that one, this one," everything, no? But sometimes we come up against the great reality, let's say, the economic factor, no? Because they tell you, "With what money are we going to buy that?" (P5)

Closely related to money scarcity was the idea that mothers do not have enough time. Some mothers described time and money as two different constraints, whereas others described them synergistically. Although multiple mothers across all focus groups mentioned time constraints, only two providers stated that time limitations influence mothers' nutrition practices.

Some mothers and providers also questioned the management of these limited resources, suggesting that poor nutrition can arise from ineffective use of resources rather than resource scarcity per se. For example, one mother noted a tendency of mothers to feed children whatever

the children want—such as cookies—and noted, "Because 'It's the economic factor,' moms say, but there, too, you are spending money" (Rosemary). Similarly, two mothers in one of the focus groups acknowledged that everybody has limited resources but that mothers need to prioritize food above everything. Finally, several mothers and providers questioned the decisions of some mothers to sell nutritious items instead of using them and/or suggested that the mothers who have these nutritious resources are not the ones who need them most. For example:

> Elizabeth: The bad thing is when there are moms that, when they give them *subsidios*[‡], they sell it…[some intervening dialogue omitted]
> Facilitator: Why do they sell it?
> Elizabeth: Because they don't need it, perhaps because they don't know it's nutritious.

Elizabeth's quote also epitomized a widespread ambiguity regarding the role of mothers' nutrition knowledge in shaping MCN practices. This ambiguity was especially evident in the context of discussing sociocultural influences and resource constraints. On one hand, providers often suggested that lack of knowledge is the major problem (e.g., "the first and great problem" [P1], "a great weakness" [P2], and "*that* is where we need to start" [P10]). Yet this viewpoint was inconsistent. First, providers often implicated a lack of knowledge even when describing situations where influences such as resource tradeoffs may have played a role. For example:

> But the moms, since they did not know the benefits, let's say, of milk during pregnancy, would take it and sell it. And they would walk around selling it in the market until it was gone. So there is *a lot* of lack of knowledge in the population. (P10)

These providers also almost invariably affirmed the importance of influences other than nutrition knowledge at other points in their interviews (e.g., "We cannot deny it; undoubtedly it's the economic factor" [P9]). In contrast to providers, who tended to first identify lack of knowledge and only later mention influences such as resource constraints, mothers more consistently saw knowledge as being of secondary importance to other influences. For one, knowledge was never

[‡]A food subsidy provided to government employees' families.

the first factor mentioned in focus groups as something affecting meal habits; instead, mothers first talked about things like time and money. As discussions progressed, mothers did identify particular areas in which they felt they lacked information (section IIIa), and in all focus groups some mothers mentioned that lack of knowledge is a particular problem in first-time mothers. However, the acknowledgment of knowledge as a factor was often an afterthought. For example:

> Something that occurred to me a bit ago was that, another reason why many moms don't give is—nourishment to their children—is because they don't know. They don't have, let's say, for example, a potato—in what ways does the potato help us? (Marisol)

IIc. MCN Services

Exacerbating the perceived problems of suboptimal infant feeding and family meals, participants expressed that MCN services provided by the formal health system (e.g., nutrition consultation) are insufficient to meet the needs of mothers and children. As one provider said, "There are more shortcomings than strengths."[§] Most criticisms had to do with nutrition consultation, coordination of care, and provision of micronutrient supplements (Table 7). While some issues were specific to Hospital Corea and/or Hospital Los Andes, issues were mainly seen as general problems of the formal health system. Only one provider expressed satisfaction with service quality and did not mention any weaknesses, only expressing frustration that mothers do not follow instructions. Table 7, while capturing commonly mentioned problems, does not imply consensus. For example, some providers mentioned coordination of referrals as a strength, not as a weakness. Moreover, mothers and providers did acknowledge some valuable services, such as supplements (when given), various printed media educational resources, and advice on which foods to avoid during pregnancy.

[§]No identifier given (in order to protect confidentiality).

Table 7. Weaknesses in MCN services reported by mothers through focus groups (FGs; n = 4) and by providers through in-depth interviews (IDIs; n = 10). The middle two columns show the proportion of FGs and IDIs in which each issue was mentioned as a weakness. These proportions do not imply that in the remainder of FGs and IDIs the issue was described as a strength.

Issue/Complaint	FGs	IDIs	Illustrative quote(s)
Nutrition consultation…			
…is sporadic or lacking entirely	4/4	6/10	"Many doctors do not inform you; they only check the baby, 'He's good, he's good,' and that's all." (Julieta)
…does not explain micronutrient supplementation	3/4	1/10	"They open her mouth and give her vitamin A. And the woman, yeah, she takes it, but she doesn't know, 'What are they giving me?'" (P4)
…does not explain anthropometry or growth status	3/4	1/10	"They weigh [the baby] and write it down. That's all, I believe. And they don't think to say, 'Look, here is how your child is doing.'" (Maria)
…is too general	2/4	3/10	"In the public [health facility], they only tell you, 'You have to eat fruits, vegetables,' nothing more." (Noemi)
…is not standardized across providers	0/4	3/10	"There is not a general protocol." (P6)
Care is poorly coordinated and/or lacks follow up	0/4	7/10	"So the moms, since they do not have a referral, bring the baby back to the house. And we do not know what is going to happen to that child." (P3)
Micronutrient supplements are not provided consistently	2/4	4/10	"Here [on the patient card] it said they are going to provide iron. Why haven't they given me iron?" (Elizabeth)

Providers largely saw social networks and norms as a challenge to their ability to deliver effective nutrition services. Several explicitly noted how social influences were more powerful than those of a health professional. For example, one said:

> Whereas I, as a [provider], say to the mom that she has to begin [feeding the child] with these vegetables, with these fruits, or these cereals, the mom, obviously, is going to pay more attention, surely, to the neighbor, to the grandmother, to the mother-in-law, no? Who weigh strongly in the opinions of the young mothers. (P9)

This provider's observation was consistent with the fact that mothers readily recalled nutrition information they received from friends and family but typically had difficulty recounting

information received from formal healthcare workers. Additionally, several providers mentioned that mothers' shyness or distrust towards health professionals can be challenging.

In addition to the challenge of integrating into a mother's social context, providers also implicated deficiencies in providers' nutrition knowledge/training as a barrier to the delivery of effective MCN services. Specifically, half of the providers noted that some colleagues do not have accurate or current nutrition knowledge and/or that knowledge and guidelines are not harmonized across different providers.

Although social dynamics and deficiencies in provider knowledge hindered MCN service quality in the eyes of providers, the challenges that they described at most length were the resource constraints they face in their hospitals as well as suboptimal management of these resources. All but one stated that there is a shortage of human resources for nutrition and/or that providers do not have enough time to provide quality services (they often explicitly linked a lack of human resources and a lack of time). Several also noted deficiencies in physical resources, including insufficient space, poor heating or ventilation, and an unreliable supply of micronutrient supplements. Most suggested that inefficient management of resources exacerbates these challenges. In terms of human resources, several mentioned a disorganized system for referral and follow up (with no single person accountable) and/or having to spend too much time on administrative tasks. In terms of managing physical resources, two providers commented on equipment and supplies being broken or lost.

In addition to these resource constraints at their own hospitals, providers also noted shortcomings in the health system as a whole as a hindrance in providing MCN services. Several acknowledged some positive aspects, such as standard nutrition guidelines established by the MSD as well as nationwide micronutrient supplementation programs. However, most of the

discussion focused on incongruities and constraints of the system. One common point was that the secondary care level is in an unenviable "sandwich" (P9) between primary and tertiary care. Several noted that, although primary care should be responsible for basic nutrition education and prevention, these centers do not adequately fulfill this role and/or lack capacity to do so (e.g., no dedicated nutrition personnel). As such, providers explained that secondary facilities bear a high burden of nutrition education. On the other side of the "sandwich," some noted that secondary facilities often receive complex malnutrition cases that actually require tertiary care.

In discussing the health system, providers generally expressed that the new law requiring referrals or out-of-pocket payment to access secondary or tertiary care ([52]; Literature Review) "has good intentions" (P4) but problematic implementation. On the positive side, several noted the need to allocate health system resources more efficiently, acknowledging the already evident benefits of the new law in redirecting simple cases from secondary to primary facilities. But providers also expressed concerns that this change would inundate primary facilities. They also had many other criticisms. First, several saw it as unjust to force people to go initially to a primary level facility, where quality of care may be inadequate. Second, most noted that the law has created confusion, frustration, and even resentment. Third, two providers noted that mothers still find a way to trick the system and access secondary care even for basic cases. The fourth and most vehement concern was that secondary facilities could no longer provide timely nutrition services like micronutrient supplements, since these are strictly primary-level benefits under the new law. One individual exemplified providers' distress:

> For me, a child, [whether] at the first, second, or third level…I have to see him, if he has anemia…To me, anemia is a condition preceding *grave* pathology. So if that child, if at the first level they have not given him his Chispitas [micronutrient powder sachets], I do not have to wait for him to go over there [to a primary facility], I can *give* them to him…So I believe that, eh, that worries me a lot. (P4)

IId. An Exasperated Community

In discussing these complex challenges, mothers and providers expressed a common morale of exasperation. Sometimes this took the form of a frustrated reaction to the constraints of one's own situation. For example, while discussing the endless resource shortages faced by health care workers, one provider said, "I want my *children*, children of, of my *country*, all of them to be well-attended, well-nourished, the moms well-guided, but we can't do it" (P3). Similarly, one mother expressed frustration with the overwhelming amount of nutrition advice she receives from her social environment:

> And here the influence of the rest of the people, "You have to do this, this, you have to do this, you have to add this, like this," so many things, until I have gotten to the point of saying, "Leave me alone, I know what I am doing with my child," you know? [laughter] (Maria)

Some people even suggested that they or (more commonly) their peers are not devoted to the cause of MCN. For example, even though almost all providers strongly asserted the importance of nutrition during their interviews—e.g., as a "fundamental pillar" (P1) of health—three questioned the professional commitment of their peers. Furthermore, half of the providers explicitly stated concerns about some mothers' "attitude," "responsibility," and/or "interest" in terms of nutrition. Some mothers themselves even suggested that "laziness" or "lack of interest" prevents them or others from optimizing their families' nutrition. However, "laziness" was potentially intertwined with other constraints, such as lack of knowledge:

> Saying, "I don't have time," I don't know, there is always time we can take, even if it may be a weekend, to prepare something good. And more than anything for me it's laziness, or perhaps not knowing, also. (Maria)

The most persistent sentiment took a softer tone that people are just doing the best that they can in this challenging context, even though their best may be insufficient. Several,

including some who made critical statements such as those above, acknowledged that their peers face many obstacles. For example, a provider explained why nutrition consultations are of poor quality by saying, "It's that there is no time; it's not that the doctor doesn't want to do it" (P5). Another, speaking about an initiative that failed to gain momentum because of resource limitations, exemplified how setbacks could erode morale:

> You want to help improve the health of [clients], but you can't. So, what do you have to do? Stick to the routine. Every day the same, the same. Carry out your schedule, and leave.**

One provider summed up this juxtaposition of desire but inability by saying, "But we give—the colleagues—we give whatever we can [*lo que podamos*]" (P6).

IIe. Other Health Conditions

In addition to describing the state of MCN in El Alto, mothers and providers also put the issue of MCN in the context of other health conditions. Reproductive health was a pervasive concern: eight of the ten providers mentioned high adolescent pregnancy and/or high parity among women in El Alto, topics that also came up in two focus groups. In terms of infectious diseases, four providers mentioned diarrhea, and six mentioned respiratory diseases, as being of major concern. Domestic conflict came up in three provider interviews and one focus group; providers referred to this as "violence" whereas mothers called it "fighting." Finally, mental health—although not mentioned by any provider—came up in three focus groups, with mothers using terms including "worries," "problems," "stress," and "sadness."

Mothers and providers noted many links between nutrition and overall wellbeing. In all focus groups there was at least one mother who said that good nutrition leads to good health. More specifically, there were remarks in two focus groups and five interviews that good nutrition

**No identifier given (in order to protect confidentiality).

produces resiliency against infectious diseases. In all three focus groups where mental health came up, at least one mother said that mental health problems negatively influence MCN practices. Finally, six of the eight providers that talked about reproductive health issues said that adolescent pregnancy and/or high parity contribute to poor MCN status or practices.

III. What Can Be Done: "Food Needs to be a *Pleasure*"

> Food needs to be a *pleasure*. It cannot be an *obligation*. *Nobody* eats out of obligation. But we are all going to eat when there is *pleasure*. The first organ of pleasure that a child has is the mouth, let's not forget, when he is breastfeeding. (Provider P1)

In calling for an emphasis on pleasure, this provider embodied a shared vision for better MCN in El Alto. Although they rarely declared so as explicitly as in this case, mothers and providers discussed a need to bring enjoyment back into nutrition and encourage people to work together. Below, their suggestions are presented in terms of I) nutrition topics of interest, II) desired features of nutrition education, and III) recommended nutrition-promoting actions. These aspects are summarized in Table 8.

Table 8. Overview of mothers' and providers' suggestions to improve MCN in El Alto.

Topics of Interest	Desired Features	Recommended Actions
Complementary feeding	Tangible	*Charlas* / workshops with mothers
Nutrient contents/benefits	Natural	Employee training
	Lively	Media-based nutrition education
		Integrated service delivery

IIIa. Nutrition Topics of Interest

The nutrition topics of greatest interest reflected an appeal to incorporate scientific knowledge into the context of familiar foods and everyday scenarios. One of these topics was complementary feeding. Although not a single mother ever used the phrase "complementary

feeding," mothers and providers alike suggested a need for mothers to learn about the first foods to feed a child (e.g., "how to feed our babies until six, seven months, until their first year" [Virginia]). Specifically, suggestions to teach about types/quantities of complementary foods and/or feeding schedules came up explicitly in four interviews and two focus groups. Another major topic of interest was the nutrient contents of different foods and, congruently, the benefits of different foods and/or nutrients. Either or both of these aspects came up in half of the interviews and three focus groups. For example, one mother said, "I would like them to tell us, let's say, the [food] products, what vitamins they have, if they are good. For example, the mandarin, for example, in what ways it helps us" (Julieta).

Whereas complementary feeding and nutrient contents/benefits were of consensus interest, there were also areas of discord that characterized an imbalance between more familiar, trusted practices and newer ones influenced by science and present day life. The clearest example of this discord was a common uncertainty, even suspicion, among mothers regarding micronutrient supplements, as illustrated in one focus group:

> Facilitator: Might there be other ways of giving good nutrition to our family?
> Silvia: Giving them vitamins?
> Facilitator: That could be a way, you say, Silvia?
> [some intervening dialogue omitted]
> Claudia: …I think that it is not good nourishment, let's say, a support, to give a vitamin, because pills are chemical. I think they do more damage. Why? Because let's say I am going to take a pill, and the next day it is no longer going to have an effect on me, and from there I am going to need more and more.

Likewise, providers also generally viewed micronutrient supplements with caution, as exemplified by the one and only provider who talked about supplements at length. This individual acknowledged the therapeutic utility of supplements in cases of malnutrition but also mentioned several drawbacks, even dangers: poor directions for clients, low compliance, and

accidental iron poisoning in children. The provider also noted, "And another [problem] is that *Chispitas* [micronutrient powder sachets] are not sufficient. Not at all. No. Not at all. Because the diet, in fact, is not rich in iron" (P4). In summary, supplements and "pills" had an ambiguous role—potentially helpful but potentially dangerous—in the eyes of mothers and providers.

Two other topics were worth noting since they represented discord between mothers and providers. First, three providers suggested teaching about breastfeeding, but only one mother suggested this topic. Second, mothers were much more likely to speak in generalities than providers were when discussing topics of interest. Providers typically suggested specific topics, such as complementary feeding schedules. Although several mothers were quite specific as well, the focus groups often elicited much more general comments about nutrition interests (e.g., "how to feed the baby so that he is strong" [Noemi]) and health topics not directly related to nutrition (e.g., most mothers in one focus group expressed unprompted interest in family planning).

IIIb. Desired Features of Nutrition Education

Mothers and providers alike appealed for nutrition education that is tangible, natural, and lively. These three interwoven aspects are presented below one-by-one.

Tangible education meant providing information that a mother could grasp and practical skills she could use to optimize her resources for better nutrition. One aspect of this concept was a consistent call for simplicity in messaging (Table 9). Similarly, there was agreement that educational materials should use attractive graphics, minimizing the amount of reading required. Along these lines, three providers suggested providing information in Aymara and Quechua since some mothers do not speak and/or write Spanish. Another major component of tangibility was a cross-cutting guideline to focus on practical skills for daily life. One of these was how to prepare foods in ways that are more nutritious, simpler, more appetizing, or some combination

thereof. These suggestions came up in half of the interviews and three focus groups. Moreover, several mothers and providers recommended instilling skills for mothers "to optimize the little that they have" (P5) when making daily nutrition decisions. This included the idea of substitution and experimentation, where mothers could learn how to purchase more nutritious foods with the same amount of money and/or experiment with different foods that provide similar nutrients.

Table 9. Quotes suggesting the need for simplicity in nutrition education messing.

Source	Quote
Mothers	"Perhaps we can talk in simple language, no?" (Marisol)
	"Although I can read, I look for what is simplest." (Rosemary)
Providers	"Short, clear messages; I don't know if you have realized [laughing]." (P2)
	"[Mothers] pick up on, they pick up on very short messages." (P4)
	"[Nutrition talks] should be clear and concise." (P6)
	"Short messages like this, key [messages]." (P10)

Mothers and providers also preferred a natural approach to nutrition that relies on traditional foods and comfortable social networks. In the most literal sense, this sentiment had to do with food. As previously mentioned, mothers trusted "natural" foods but not "chemicals," including micronutrient supplements. Likewise, some providers suggested that Bolivia needs to return to "traditional" or "native" foods. In fact, one was adamant that this approach was the single key to better nutrition. Although this one-dimensional view was atypical, several other providers also mentioned the virtues of traditional foods. In addition to reincorporating "natural" foods in the diet, the idea of being natural also captured a sense that nutrition education should be opportunistic and take approaches that feel natural and convenient to mothers and providers. Along these lines, three providers specifically suggested that nutrition education services be

offered in the waiting rooms of health facilities. There was an enthusiastic response when this suggestion was posed in one of the focus groups:

> Julieta: It would be wonderful to be watching [something] and not be just waiting like this, without doing anything, also.
> Rosemary: While we are waiting we could also be learning.

Furthermore, one provider suggested putting visual educational materials on display in the waiting rooms, arguing: "Nobody is going to manage it, no? It is going to be in plain sight. It would be better like this" (P3). The aforementioned appeals to use simple and conversational language (Table 9) also speak to the idea of making education a natural, comfortable process.

Finally, mothers and providers wanted nutrition education that is lively, promoting a collaborative spirit through family engagement and mother-to-mother interaction. One provider said that everybody within a family should eat the same foods—so that children are not confused over why they are being fed differently—and another suggested including the whole family in the effort to be nutritious. And the potential for mothers to exchange ideas in a "cordial" and "respectful" environment was palpable in the focus groups, with several mothers spontaneously stating a desire to teach and share with others. In fact, even though the focus groups were meant to be exploratory rather than educational, one mother remarked:

> Because also, what we are learning here, I, for example, right now I am going to go to my house, I am going to say to my mom, "We have talked about this, and such and such," and I believe that she is also going to go, and I believe that that also is going to open things up a little more. (Claudia)

Additionally, several mothers and providers suggested using personal stories, including anecdotal evidence and role models, as teaching tools. For example:

> It is interesting when moms are waiting in groups to give them examples, show them successes. Tell them, "Look, this baby, this one was malnourished when he was eight months old. But the mom has learned to feed him with the *same* foods that she uses…And in that way he increases in weight. He leaves malnutrition behind." (P3)

There was one major area of disagreement in terms of nutrition services: the use of food aid. The idea of providing food aid to mothers as part of a package of nutrition services came up in six provider interviews. On one hand, four were in favor of providing food to mothers to support them in feeding their families and/or as an incentive to increase attendance at educational events. In contrast, one cautioned against conditioning mothers to expect a material incentive in order to seek nutrition education, and another argued that food aid is simply futile:

> Because they are not going to make the most of it [food aid]. It is a very regrettable experience that sometimes it is thought that giving to them in that way is going to succeed in eradicating maternal nutrition problems. That is false. (P9)

IIIc. Recommended Actions to Promote Nutrition

Mothers' and providers' proposed actions involved incorporating contemporary tools (science, systems, and technology) into collective, social efforts to promote MCN.

A nearly ubiquitous proposal was to do *charlas* (chats) and/or workshops with mothers. This idea came up in every focus group and many interviews and was an activity that many suggested could capitalize on existing infrastructure (i.e., holding events in health facility waiting rooms). Whereas providers typically appeared to be talking about *charlas* in a lecture format, mothers advocated for a highly interactive approach where they could ask questions, share ideas and recipes, see demonstrations, and practice preparing food in a "workshop" setting. Comments by several mothers and providers suggested that these group activities would be a one-time occurrence, but two mothers expressed a desire for groups to meet regularly.

As a parallel to promoting exchange of ideas and information among mothers, three providers suggested a similar approach in order to build employees' capacity. One strategy was for nutritionists to receive continued training, whereas there were also suggestions to have nutritionists or a "nutrition expert" provide a nutrition workshop to other providers.

Another common suggestion was to revitalize previously existing media-based education, delivering nutrition messages through radio, video, and print technology. Three providers fondly recounted previous radio-based health education campaigns, with one remarking, "The moms *adored* us through the radio" (P2). Similarly, two providers suggested using videos, an idea that received enthusiasm in both focus groups where the facilitator posed it as a possibility. In terms of print media, one provider (P1) recommended the increased use of a "very well designed" complementary feeding information sheet made by the nutritionist at Los Andes, and there was tremendous enthusiasm towards a recipe book made by the MSD. One provider called this recipe book "fantastic" and suggested efforts "to replicate that, but to *more* people" (P6). Similarly, one mother mentioned how all of her friends had made photocopies of this recipe book "because there weren't any more…they should give this out in greater quantity" (Marisol).

Finally, several providers also advised integrating nutrition service delivery systems in order to improve nutrition education and evaluation. For four of them, this idea took the form of a physical nutrition center within the hospitals (e.g., to facilitate transfer of patients and records between nurses and nutritionists). For three others, integration was more a matter of human resource management to facilitate follow up and coordinated care: two suggested that there be dedicated staff members or external auditors to monitor provision of nutrition services, and one recommended forming multidisciplinary nutrition teams to do home visits to clients. Lastly, one provider promoted the potential of mothers to monitor their own nutrition practices and other health behaviors through booklets that could be discussed with service providers. These actions to integrate nutrition services would allow providers to keep track of mothers and children and maintain links with them to deliver effective support.

DISCUSSION: "THE GREAT PHANTOM"

> So oral memory is not so strong in these globalized times, but the memory of scientific information that explains and talks to you about diseases of the body because of poor nutrition is present. They know it, they recognize it, but there is a still a rupture between the science and the culture. You still don't talk about science at home. The word is not recognized. But we've also stopped talking about food, about nourishment, about nourishing the body and the *ajayu* [Aymara word for spirit/soul]. I don't know, friend. That's what comes to mind upon reading your sentence. Perhaps it's necessary for this phantom to stop being a phantom and to manifest itself, to materialize as the magic spirit of nutrition. (SC Calle, personal communication)[††]

Maternal and child nutrition in El Alto appears to be a "Great Phantom." In the original context of this phrase, one of the health providers interviewed in this project invoked the image of a "great phantom" to show how MCN is a "grave problem" and a "hidden" contributor to other diseases and death (see Results). This project suggests that the MCN may be a phantom in other ways, as well. The above-quoted email from the focus group facilitator (SC Calle) to the author during the analysis phase of this project eloquently describes two features of the phantom. First, MCN is something elusive, caught between a current world and a past world (or as SC Calle describes it, "a rupture between the science and the culture"). Second, as captured in SC Calle's final sentence above, the phantom is a spirit that can materialize if given new life. This Discussion interprets these two major findings in the context of El Alto's cultural background, describes implications of these findings, and proposes future directions in this transitional city.

The first key result is that, when it comes to MCN, mothers and providers in El Alto find it challenging to reconcile a past world with their present, largely unfamiliar world. On one hand, nutrition in the city has lost something "natural" and is now full of unnatural "chemicals." This mindset is strikingly similar to one found in a study in the rural Peruvian *altiplano*, where mothers trusted "natural" food "from the countryside" and denounced the foods of the city,

[††]Translated verbatim from Spanish by the author, with some modifications to punctuation.

"where everything is chemical" [13]. But the past life is not entirely pure; instead, harmful shadows linger in the form of *machismo*. Nor is present day city life entirely harmful; instead, it offers the promise of scientific information (e.g., nutrient contents of foods) and technological tools (e.g., media). The Great Phantom of MCN is not quite of this world, being at once a remnant of the past and something new and not quite grasped from the present.

This apparent gap between two worlds (the past and the present) is likely part of a larger process of rapid identity transition in a postcolonial era. Being composed largely of recent indigenous immigrants, El Alto retains strong ties to the Andean culture of the countryside [11]. A core aspect of Andean culture is the concept of duality, "the division of society into opposed halves," which dates to precolonial times as a way of organizing society and which was exploited during the colonial era to establish power structures [75]. This duality, combined with an international discourse that has tended to reinforce a "strong othering" between indigeneity and modernity [76], may in large part explain the "otherness" that arises in the "inevitable coexistence of various *others*" in a multicultural society like Bolivia's [77]. This otherness is evident in the dialogues of mothers and providers in this project, who sometimes drew firm lines between the past and the present and/or placed value judgments on these different influences. A struggle to reconcile the past and present is likely not specific to MCN nor to El Alto. For example, a study of Amazonian indigenous youth in a Brazilian city found that:

> At first it seems that indigenous young people are caught in a liminal zone—neither full members of the reserve nor full residents of the city…For the native young people themselves, their presence in the city is sometimes confusing and hard to define. [78]

In other words, the way mothers and providers view MCN may reflect a larger challenge of defining identity in Bolivia—or as Johnson (2010) described it, "an experiment in national soul searching" during a process of "decolonization" [5].

Along with this soul searching, there is a desire for revival: a second key result of this project is that mothers and providers want to bring more life into nutrition education. Their suggestions revolved around making nutrition education a more engaging, enjoyable process directly applicable to everyday life. This focus on education as a solution at first seems incongruous with how they described the problem of MCN, in which resource limitations and complex social interactions appeared to be more influential than nutrition knowledge, per se. Focusing on nutrition education for mothers may be misguided: several major publications describe health education campaigns as largely ineffective because they typically do not address the underlying context that weighs heavily in individuals' behaviors [79-81]. With that said, mothers and providers may be implicitly calling for a different kind of education, something that imparts nutrition knowledge in ways that also address these contextual factors. For example, their suggestions to instill money management skills represent an approach that educates individuals on ways to deal effectively with economic scarcity. Similarly, their ideas had a strong element of social cohesion, consistent with suggestions referenced in another study of nutrition in the Bolivian *altiplano* (e.g., including the whole family in MCN efforts and "strengthening inter-community social networks" [15]).

When viewed in this context-sensitive light, mothers' and providers' suggestions for nutrition education are consistent with current government strategies in Bolivia as well as with behavioral theory. Bolivia's *Desnutrición Cero* program calls to "strengthen community participation, through social networks and social actors" in the promotion of MCN [7]. And Bolivia's Minister of Health, writing about Bolivia's SAFCI model of health, asserts that: "People are not just a physical entity but instead a bio-psycho-social unit in which social and cultural contexts feed the biological being" [82]. This mindset is similar to social ecological

models, which are common in the behavioral sciences and theorize that individual behaviors are largely determined by underlying factors including political economy, workplace environments, and social context [80, 83]. It is argued that socioeconomic factors are a fundamental determinant of health because higher status produces "greater access to and effective utilization of money, knowledge, power, prestige, and beneficial social connections" [84]. The form of education suggested by mothers and providers in this project certainly presents the opportunity for mothers to increase their social connections and knowledge and to optimize their use of money.

In constructing approaches to nutrition education and MCN promotion, this project suggests that there is a latent desire to harmonize different worldviews on nutrition. This finding is less obvious than the two previously described findings, given that none of the mothers or providers explicitly suggested this as an approach. However, one might infer this idea from some of the more specific suggestions offered for nutrition education. For example, the desire for mothers to learn more about the nutrient contents of different foods and the benefits of different nutrients would incorporate scientific nutrition knowledge into the context of familiar and "traditional" foods. A desire to merge concepts in this way makes sense in the context of Andean duality, which, rather than seeking to establish the dominance of one side, seeks to establish equilibrium [75]. In a similar sense as in Andean battle rituals, where "each side takes turns letting fly with its slings" [75], efforts to promote MCN in El Alto could combine a more "traditional," "indigenous" view of nutrition with a more "modernized," "Westernized" view.

What may be vital in moving forward is to cultivate a more explicitly "intercultural" approach to MCN. Interculturality has been defined as an "active process of transformation" [5], something that goes beyond the mere acceptance of coexistence and instead is a collective

aspiration for a better society through diversity [77]. As mentioned in the Literature Review, interculturality has been a core pillar of government discourse in Bolivia throughout Morales's era. Interculturality in health, education, and property is explicit in Bolivia's new constitution [85] and is a unifying component of *Desnutrición Cero* [7]. Of particular note is a stated objective of the Ministry of Foreign Relations and Culture to:

> [Construct] a new socially and productively inclusive society in which technological advances are combined with the knowledge of our ancestors, based in the energy and the capacity derived from our cultural identity. [86] (translated into English in [5])

This objective parallels the suggestions by mothers and providers in this project that technology such as media could be highly useful in promoting MCN, along with their idea that "traditional" foods should be valued. In fact, this intercultural harmony may in part explain the popularity of the MSD's recipe book—which includes information about nutrients and provides recipes using commonly available familiar foods [87]—among participants in this project. As noted in the previously referenced study of indigenous Amazonian youth, "Urban centers can function as important places for strengthening cultural traditions through the use of new technologies" [78]. In these urban settings, people can "actively redefine, renew, and blur…imagined cultural boundaries" [78]. More specific to this project, Arbona (2011) argues that "the current forms of social and neighborhood organization in El Alto represent translations, adaptations, and re-inventions of forms of organization in their places of origin" [88]. In other words, interculturality is a process of collectively redefining the world. Intercultural social policies and programs have been enacted across Latin America, and the Pan American Health Organization "has developed guidelines for the execution of health policies with an intercultural approach" [89].

What might an intercultural approach to nutrition look like? There are precedents in Latin America. CECIPROC, a program in the Mexican state of Oaxaca, includes a component in

which women are trained to "rescue" local and regional recipes, create recipe books fusing historical and contemporary approaches, and prepare and taste recipes through interactive workshops [77, 90]. Similarly, an intercultural approach may help promote the healthy use of micronutrient supplements. In this project, the topic of supplementation was one in which mothers' and providers' opinions embodied ambiguity and even outright denunciation. Previous research on low coverage and/or acceptability of supplementation in Bolivia, including by the Leon group and in the NIDI study, has focused on mothers' knowledge or aesthetic considerations (e.g., taste and side effects) as potential barriers [91, 92]. However, this project suggests that that low supplement use may have a deeper root: mothers' wariness of "chemicals." It appears that mothers find it unnatural to discuss or deliver nutrients that are disembodied from foods. But rather than characterizing this wariness as a "barrier," an intercultural lens would view it as an asset. Mothers' trust in "natural" foods, aside from being nutritionally sound, is a very conducive starting point to introduce the idea of supplementing the body with more of the nutrients that naturally occur in these foods.

In crafting such next steps, further research with this community would be useful given the boundaries and limitations of this exploratory project. The focus group and interview guides explicitly asked participants about broader health issues, but the author and Emory mentors bounded the scope of this project in advance to focus on MCN. Although MCN certainly appears to be important to mothers and providers, input from Bolivian partners in the initial stages would have helped contextualize the perceived relative importance of MCN and its relationships with other health and societal issues. For example, it is striking that comments on reproductive health issues arose so frequently despite a complete lack of guided questions on this topic. Further exploration through focus groups with mothers could specifically clarify how mothers perceive

nutrition and reproductive health in relation to each other. Another limitation of this project was that the focus groups and interviews were not pilot tested. Given more time and pilot testing, it would have been possible to employ a constant comparative approach in which initial interpretations feed back into modifications of data collection instruments, theoretical sampling, and ultimately the development of grounded theory [93]. However, there is still an opportunity for explanatory research targeting some of the ambiguous findings of this project, expounding upon concepts that emerged, and clarifying strategies for the future. What, exactly, does it mean for something to be "natural?" What, exactly, does a phrase such as "whatever is available" (*lo que hayga*) mean when describing mothers' feeding habits? Who purchases food within a household, and how are these decisions made? What has the transition from the countryside to the city been like for mothers' families? How might we transform the view of nutrition using an intercultural mindset?

Despite these limitations and the need for further explanations, this project had several strengths that arose largely from extensive community engagement. R Calderón of CAIA initially had the idea to do focus groups, and the Bolivian focus group facilitator (SC Calle, herself a mother) was able to recruit mothers. In parallel, with the help of NIDI study staff, the author developed rapport with a spectrum of hospital providers while maintaining enough distance for them to express themselves candidly through interviews. In this manner, this report was able to integrate the perspectives of health care workers with those of mothers—a rarity in the published literature. Community partners also helped improve data collection instruments and the data collection process. For example, SC Calle suggested adding questions about food taboos into the focus group guide, which helped illuminate the sociocultural context, and she elicited comments from all participants. And Bolivian partners were involved in the analysis

stage of this project, offering their initial impressions at focus group debriefing meetings and helping to clarify and contextualize major themes during the latter stages of analysis. With the author being directly involved in every stage of the project, this report cohesively integrates perspectives from a range of contributors.

In the Andean spirit of duality and equilibrium, the Great Phantom of MCN can be viewed as a challenge as well as an opportunity. Certainly a phantom signifies loss, death, and elusiveness. But a phantom is also a spirit, and this project provides ample evidence that there is energy to revive it. This revival would be not merely a resurrection of the past nor an assimilation into a still unfamiliar present. Rather, it would be an active transformation into something new and revitalized. As SC Calle put it in an email to the author, “Perhaps it is not a phantom. Perhaps it is an energy so strong that it can no longer be a phantom.”

RECOMMENDATIONS

This section compiles recommendations for the coalition of the Leon group (Emory), CAIA, UMSA, Hospital Corea, and Hospital Los Andes to help promote MCN in El Alto. Outlined in Table 10 and described below, these recommendations were developed by the author throughout the process of this project. Recommendations are tailored mainly to the Leon group and CAIA given their leading involvement in this project; however, they may also provide insight for UMSA, Hospital Corea, and Hospital Los Andes.

Table 10. The author's recommended strategies and actions to promote MCN in El Alto. (CAIA = Centro de Atención Integral para Adolescentes)

General strategies	**Main actors: specific actions**
Be an intercultural phantom behind the scenes	Leon group leadership, CAIA: share this report with all stakeholders who contributed
Focus on food Unite nutrition and reproductive health Tell stories Have fun	Leon group leadership, CAIA: help scale up distribution of existing nutrition education printed media
	CAIA, practicum student: facilitate development of media-based education in health facility waiting rooms
	CAIA, practicum student: facilitate nutrition workshop development, monitoring, and evaluation
	CAIA: enable opportunities for mothers to devise their own solutions to nutrition problems

I. Recommended Strategies

Be an intercultural phantom behind the scenes. A promising finding from this report is that people in El Alto already have a lot of passion and ideas to address the Great Phantom of MCN. At a moment when the Leon group's capacity to manage further programs here is uncertain, there is an opportunity for community members, CAIA, UMSA, Hospital Corea, and Hospital Los Andes to take a greater leadership role. The Leon group need not come up with the solutions. Instead, the group may be best suited for a formalized advisory role—e.g., in

providing scientific review and endorsement of educational materials or in consulting on program monitoring and evaluation. In line with Andean ideas of duality and equilibrium, and borrowing phrasing from SC Calle, the Leon group could principally represent the "science" of nutrition while CAIA and other local partners represent the "culture."

Focus on food. Another promising finding is that mothers trust in "natural" foods and already have a good sense of what is nutritious. Focusing on food as a building block will likely be an effective, even necessary, strategy for nutrition education and for introducing the idea of supplementation. Nutrition education can begin with mothers' belief in the wholesomeness of traditional foods (e.g., "quinoa is healthy"), then incorporate knowledge about nutrients that are in those foods (e.g., "quinoa has iron"), and finally incorporate the idea that supplements can integrate more of these natural nutrients into the diet (e.g., "Chispitas have iron"). Whereas this approach could ease distrust and encourage use of supplements, increasing intake of traditional foods in the first place may be more challenging. The government fully subsidizes supplements for mothers and children through SUMI [47], but traditional foods like quinoa are relatively costly. (For example, one of the providers said that a kilogram of quinoa costs around 25 bolivianos [US $3.50], whereas a kilogram of rice only costs 4 bolivianos [$0.50]). This challenge may best be addressed through problem-posing education that helps mothers collectively devise strategies to deal with their day-to-day constraints (Section II).

Unite nutrition and reproductive health. There is energy around the topic of reproductive health, and several mothers and providers saw connections with nutrition. Section II recommends nutrition education activities to promote MCN, some of which CAIA has already undertaken. The scaffold of these activities could be leveraged to address reproductive health topics, as well. Conversely, there are many people and resources at CAIA and at the Corea and Los Andes

hospitals that are devoted to improving reproductive health. These resources can be leveraged for funding, staffing, curriculum development, and execution of further educational activities.

Tell stories. Whereas the coalition of the Leon group and others is generally more accustomed to quantitative, "scientific" evidence, mothers in this population exist in a context of oral tradition, personal experience, and anecdotal evidence. This experiential logic, while in some ways less familiar to the coalition and more prone to specious conclusions, presents an opportunity to merge the best of tradition, social networks, and "scientific" nutrition. Moms learn from other moms but do not always see their advice as credible, whereas they report not receiving enough information from perceived credible health professionals. The Leon group and CAIA could devise ways to teach scientifically established information through the familiar voices of other moms. For example, the importance of vitamin A, rather than being explained in terms of child mortality risk, could be told as the story of an infant who got sick less often once her mom started feeding her more squash and carrots. An approach like this derives from the scientific evidence base while also respecting the power of personal stories to stimulate change. Additional exploratory qualitative work with mothers—supported by K Andes at Emory and other qualitative experts—could help develop and tailor these stories.

Have fun. As one provider said, "Food needs to be a *pleasure*; it cannot be an *obligation*." The idea here is not to become frivolous, but rather that joy can be nourishing. The narrative can shift from obligation and challenge to enjoyment and opportunity, and the coalition can play a role by embracing a fun spirit.

II. Recommended Actions

Share this report with all stakeholders who contributed. While the author has strived to represent the variety of ideas expressed in focus groups and interviews while also illustrating a

big picture, different people would certainly present different pictures of MCN in El Alto. What is important is that all contributors to this project have the opportunity to see this report and respond as they see fit. These people include 1) the NIDI Bioethics Committee (the ethical oversight team for the NIDI study made up of Bolivian experts), 2) the NIDI study team, 3) the nutrition education team at CAIA, 4) SC Calle, 5) the directors and interviewees from hospitals Corea and Los Andes, and 6) the focus group participants. To account for potential literacy issues among focus group participants, CAIA staff and/or literate mothers can serve as representatives to share findings. One benefit of sharing this report with these individuals is the opportunity for them to see that people share many similar constraints and frustrations as well as ideas for the future.

Help scale up distribution of existing nutrition education printed media. Two printed media resources elicited quite favorable comments from mothers and providers: a recipe book produced by the Bolivian MSD [87] and a complementary feeding information sheet produced by a Hospital Los Andes nutritionist. These cover many of the topics and practical skills that were of interest to mothers and providers and address mothers' desire for visually appealing nutrition education. Contributing to this scale up is an opportunity for the Leon group to seek a fairly direct impact in the population, collaborating with the coalition in a way that could also help sustain its nutrition research here (e.g., through monitoring and evaluation of the scale up).

Facilitate development of media-based education in health facility waiting rooms. Accessing busy mothers can be challenging, as evidenced through recruitment efforts for the NIDI study and for nutrition workshops facilitated by CAIA. Waiting rooms provide a captive audience and a convenient opportunity for mothers to learn; Hospital Corea already shows videos on topics such as vaccination in its waiting room. Showing 2-5 minute videos with real

mothers acting out everyday scenarios would be a way to convey simple, relatable messages. Such an initiative would require an initial investment of fixed costs to create videos and purchase equipment, but thereafter it would require few continuous costs and human resources. (There would, however, need to be clear responsibilities for the upkeep of equipment; one provider noted that a previous waiting room video project fell apart because the equipment broke down.)

Facilitate nutrition workshop development, monitoring, and evaluation. In the summer of 2014, information from the focus groups was used to rapidly develop and pilot test a nutrition workshop for mothers that focused on healthy breakfasts. These workshops were implemented by CAIA in September 2014 and have continued to the present, with coordination and financial support from the Leon group. There have been challenges, but the project has been a constructive learning process and has received positive reviews from mothers. Although unbeknownst to the workshop team during development and implementation, this project remarkably parallels one in the Mexican state of Oaxaca [77, 90] (referenced in the Discussion). There is great potential to expand the reach, content, and format of the workshops that CAIA has undertaken. Only one workshop module has been developed, but the focus group discussions provide ample content to develop additional modules—for example, one focusing on healthy lunches. The workshops could even seek to emulate the Oaxacan model, a largely self-driven one in which mothers create and try recipes that link historical practices with contemporary ones. The existing coalition of the Leon group (scientific expertise), CAIA (experience in education), and the hospitals (venue and trained staff) is well positioned to build upon this initial workshop project and may wish to seek financial and technical support from the Bolivian government.

Enable opportunities for mothers to devise their own solutions to nutrition problems. Whereas workshops may be a fairly predetermined approach to nutrition education, a

complementary approach with great potential is to help mothers cultivate their own ideas and capabilities. A respected method for this is group "problem-posing education" [94], where groups are presented with a problem that they discuss and for which they devise a solution. Although this process uses structured methods [95], the core of the approach is for individuals to think critically and devise their own solutions rather than be told the "solutions" or the "facts." The Oaxacan recipe program, for example, epitomizes this approach in action. In El Alto, scenarios (examples in Table 11) could be presented to groups of mothers across a range of ages to promote exchange of ideas across generations. Problem-posing education can also use more abstract scenarios—"codes"—that facilitate an opportunity for people to discuss highly personal, sensitive issues and root causes [95]. An example of this approach in this case would be to present a cartoon to mothers depicting nutrition as a phantom and asking them to describe their interpretation of what is going on in the cartoon. CAIA or a local partner with experience in this type of education may be best suited to facilitating the groups, while the Leon group could support in recruitment (e.g., from the pool of NIDI mothers) and in consultation on strategic planning and evaluation.

Table 11. Example everyday nutrition problem scenarios that could be presented to mothers for them to devise solutions collectively.

Scenario
Your eight-month-old baby is hungry and distressed, but you are busy selling clothes at the market. How do you feed your baby in a healthy way?
You have 50 bolivianos and a choice of [common foods of varying nutritional quality, e.g., bananas, soda, hamburgers, rice, quinoa]. What do you buy?
Your children are complaining to you that their friends get to drink soda more often than your family does. How do you satisfy them in a nutritious way?
There is not much food today and your male partner is expecting to be fed first, before you or your children eat. How can you make sure everybody eats nutritiously today?

III. Summary of Recommendations

The unifying theme of these recommendations is energetic interculturalism that capitalizes on existing capacities and resources. All of the recommended strategies are strategies that the coalition has already been employing in some way. The Leon group and CAIA, who closely partnered for the NIDI study, already represent an intercultural mix of capacities (scientific nutrition knowledge and cultural experience) and a fusion of interests between nutrition and reproductive health. The focus groups of this project provided an initial opportunity for mothers to tell their stories, and CAIA's nutrition workshops have focused on food to teach nutrition concepts in a fun way, where mothers get to prepare and try smoothies and purees with their babies. Similarly, the proposed actions capitalize on existing resources and initiatives (e.g., the recipe book, videos in waiting rooms, workshops). These actions are not mutually exclusive; for example, problem-posing group activities could occur in waiting rooms or as part of nutrition workshops. These recommendations build from what is already there—and interculturalism is not a foreign concept; it is something rooted in Bolivia's vibrant politics and society. By mindfully engaging in an intercultural approach, the coalition can maximize its role in helping mothers and health service providers transform their community into a more nutritious one.

CONCLUSION

On April 17, 2014—just before this project began and exactly a year before this report was completed—a mysterious "phantom" appeared during a Copa Libertadores quarterfinal soccer match in La Paz. Late in the match, the Fox Sports television broadcast showed a shadowy figure moving rapidly across the steps of Hernando Siles Stadium, which was built upon an old colonial cemetery [96]. This strange scene captured attention in La Paz and as far away as Peru and Argentina [96, 97]. Shortly after, another television network released footage suggesting that the figure was, in fact, a real person running across the stadium. Still, some remained convinced that the figure was a phantom, and as one newspaper noted:

> The strange thing was that not a single fan took notice of the action. Nobody made a movement to make space, nor even to look at the subject, who got lost in the crowd, which is why it appeared to be a phantom. [97] (translated by the author)

Although mothers and providers have certainly taken notice of the "phantom" of MCN in El Alto, there is a definite sense that it has become lost in the crowd of city life. Mothers and health providers struggle to reconcile seemingly distinct worlds of the past and present and are tormented by a complex web of sociocultural influences and resource constraints. Nutrition in El Alto is something not quite of this world—a shadow of the past and something from the present that is unfamiliar, unnatural, and not quite grasped.

Yet this is also a story of spirit and vitality. Mothers already have astute nutrition knowledge, and MCN is clearly important to the community. Even if this project represents a subset of community members who are particularly interested in MCN, it still demonstrates that there are people in El Alto who care and who have ideas about what to do. Along with the coalition of Emory, CAIA, UMSA, and the hospitals, mothers and providers in El Alto can work together to transform this Great Phantom into something new and revitalized.

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APPENDIX 1: PROVIDER INTERVIEW GUIDE

1. **Sobre el/la entrevistado/a (~5 min).** Me gustaría empezar con algunas preguntas sobre Ud. mismo para que yo pueda conocerle mejor.
    a. Primero de todo, ¿puede decirme su título oficial de trabajo?
    b. ¿Cómo llegó a ser el/la/un/una ____ en Hospital [Los Andes / Corea]?
        i. Investigue si es necesario: ¿Por cuánto tiempo ha trabajado en Hospital [Los Andes / Corea]?
    c. ¿Puede decirme sobre algunas de sus mayores responsabilidades y tareas en el hospital?
        i. Investigue / Clarifique si es necesario: Por ejemplo, puede empezar con decirme lo que haces durante la primera hora o dos horas después de llegar cada día.
        ii. Investigue si es necesario: ¡Bien! Entonces, ¿qué hace durante el resto del día laborable?
2. **Salud y nutrición de madres y bebés (~10 min)**. ¡Bien! Es bueno sacar una idea de quién es Ud. y que es su papel. Ahora, hablemos de la salud materna e infantil en El Alto.
    a. Para empezar, ¿cuáles son algunas de los problemas de salud más importantes que ha visto Ud. entre mujeres y bebés en El Alto?
        i. Clarifique si es necesario: Por ejemplo, ¿cuáles son las razones más comunes por las cuales vienen las mujeres y bebés al hospital?
        ii. Investigue si es necesario: ¿Hay algunas otras condiciones de salud de cuales Ud. oye mujeres hablando con frecuencia?
    b. Bueno, ahora seamos más específicos y hablemos sobre nutrición, porque éste el objetivo del estudio. ¿Puede decirme algo sobre el estado o practicas de nutrición de madres y bebés en El Alto?
        i. Investigue:
            1. [*Si dice que tienen buena nutrición*]: En su opinión, ¿cuáles son algunas razones por las que ellos tienen buena nutrición?
            2. [*Si dice que tienen mala nutrición*]: ¿Por qué cree Ud. que no tienen buena nutrición?
    c. Antes de continuamos, ¿hay algo más que le gustaría añadir sobre nutrición materna e infantil en El Alto?
3. **Servicios nutricionales maternales e infantiles (~15 min).** ¡Bueno! Para ser aún más específico ahora, hablemos sobre servicios nutricionales que madres y bebés reciben acá en Hospital [Los Andes / Corea], como educación, suplementación, o cualquiera otra cosa que quiere mencionar.
    a. Primero de todo, ¿qué tan grande es el papel de nutrición materna-infantil en los trabajos diarios de Ud. y de otros empleados en el hospital?
    b. ¿Cuáles son algunos de sus opiniones sobre los servicios nutricionales que provee este hospital? Puede empezar con nombrar servicios que considera bien realizados, y después puede decirme algunas cosas que pueden o deben mejorar.
    c. ¿Cuáles tipos de información reciben madres en este hospital?
        i. Investigue: En su opinión, ¿de qué manera comprenden las madres la información que reciben, generalmente?

ii. Investigue: ¿Y de qué manera siguen las madres la información que reciben, generalmente?

d. ¿Puede decirme sobre algunos retos o frustraciones que Ud. ha sufrido cuando tratando de proveer servicios eficientes de nutrición a madres y bebés?
   i. ¿Cómo se siente sobre el tiempo que puede dedicar a proveer estos servicios?

e. ¿Cree que hay servicios adicionales de nutrición que el hospital debe proveer a madres y bebés que no provee en este momento?
   i. Investigue si es necesario: ¿Por qué cree Ud. que [esto servicio] es importante?

f. Antes de continuar, ¿hay algo más que le gustaría discutir sobre servicios nutricionales maternales e infantiles en este hospital?

4. **Modificación de servicios nutricionales (~10 min)**. Como Ud. sabe, hospitales traten de mantener sus servicios tanto modernos y eficientes como posible. Como mencioné, el grupo de Dr. Leon está intentando entender cómo apoyar los hospitales en este proceso. Así que tengo algunas preguntas en este tema.
   a. Primero, ¿qué serían algunas cosas que animarían a Ud. para modificar los servicios nutricionales que provee personalmente a madres y bebés?
      i. Investigue: Hacer cambios a servicios de salud frecuentemente requiere trabajo adicional de parte de empleados. ¿Puede pensar en alguna cosa que ayudaría en motivar a Ud. a cambiar la manera en que provee servicios nutricionales?
      ii. Investigue: Igualmente, ¿hay algunos recursos que ayudaría a Ud. en este proceso?
   b. Ahora por otro lado, ¿cuáles tipos de retos tal vez sufra Ud. en tratando de cambiar los servicios que provee?
      i. Investigue: ¿Puede decirme sobre algunas experiencias difíciles que ha tenido como un[a] empleado[a] de hospital en tratando de adaptarse la manera en que hace su trabajo?
5. **Encuestas de nutrición con madres (~5 min).** Bien, bien. Nos faltan unas pocas preguntas restantes. En unas semanas vamos a darles encuestas a madres quienes son clientes de este hospital para averiguar sus conocimientos, actitudes, y necesidades con respeto a nutrición.
   a. ¿Hay algunas preguntas que cree Ud. que deberemos preguntar a estas madres?
      i. Investigue / Clarifique si es necesario: Por ejemplo, ¿Ud. le gustaría saber más sobre las opiniones de madres con respeto a específicas temas nutricionales, o tal vez porqué ellas se portan en específicas maneras?
6. **Trabajando con personal de NIDI (~5 min).** ¡Bien, gracias! Nos falta solo un tema más para discutir. Quiero hablar con Ud. sobre el estudio que se realiza en este hospital. Como ya mencioné, este estudio se llama NIDI (que significa "Nutrición, Inmunología, y Diarrea Infantil).
   a. ¿Qué tan familiarizado/a está Ud. con este estudio?
      i. *Si no tiene familiaridad con el estudio:* Está bien. Este estudio examina si la nutrición materna e infantil influye cómo funciona la vacuna contra el rotavirus. Ya que Ud. no tiene familiaridad con este estudio, continuemos y concluyamos la entrevista.

ii. *Si tiene alguna familiaridad con el estudio, valide/parafrasee su explanación y clarifique si necesario. Entonces:*
    1. ¿Puede decirme un poquito sobre su involucramiento con este estudio?
        a. Clarifique si es necesario: por ejemplo, tal vez Ud. tenga involucramiento con la recolección de datos. O tal vez no tenga involucramiento con el estudio, pero lo ha oído.
        b. *Si tiene algún involucramiento:*
            i. ¿Puede decirme cómo le ha ido estar involucrado/a con el estudio?
                1. Investigue: ¿Cómo ha sido su experiencia trabajando con el personal de NIDI?
                2. Investigue: ¿Cómo ha afectado su involucramiento con este estudio a su trabajo diario en el hospital?
            ii. ¿Hay algo que cambiaría Ud. para mejorar la coordinación entre el hospital y el equipo NIDI?
            iii. ¿Puede pensar en algunas maneras por las cuales este estudio tal vez influya servicios nutricionales maternales e infantiles en Hospital [Los Andes / Corea]?
        c. *Si no tiene (mucho) involucramiento:*
            i. Está completamente bien. Me alegra que a lo menos Ud. haya oído del estudio.

7. **Conclusión (5 min).** Otra vez, muchas gracias por compartir sus opiniones hoy. Hemos hablado de todos los temas que yo quería discutir.
    a. ¿Hay algo más que Ud. querría discutir o compartir?
    b. ¿Tiene algunas preguntas para nosotros en este momento?

¡Gracias! Su perspectiva va a ayudar el grupo de investigación de Dr. Leon en colaborar con Hospital [Los Andes / Corea] para proveer los mejores servicios posibles de nutrición materno-infantil.

La hoja que le di antes tiene información de contacto. ¡Por favor no dude en contactarnos si tengas cualesquier preguntas, sugerencias, requisitos, o preocupaciones!

APPENDIX 2: FOCUS GROUP DISCUSSION GUIDE

Antes de empezar con las preguntas, hay que dedicar unos cinco minutos para explicar la discusión—el propósito, el tipo de preguntas, y la confidencialidad. Durante estos minutos, los facilitadores distribuirán las hojas de información. Es crucial proveer la oportunidad de hacer preguntas o compartir dudas en cualquier momento.

También, hay que explicar que vamos a grabar la discusión para que podamos transcribir y resumir. Si alguien no quiere que grabemos la discusión, tiene la opción de salir sin consecuencia. Se puede decir algo así: "Con su permiso, nos gustaría grabar nuestra discusión en esta grabadora. ¿Por qué? Porque queremos escuchar la grabación después para que podamos resumir sus comentarios. Solo los miembros de nuestro equipo podrán acceder la grabación. ¿Hay alguien que tenga una duda o objeción con respeto a grabar nuestra discusión?"

Al principio, hay que decir algo así: "Antes de empezar, voy a dedicar unos cinco minutos para decirles más sobre nuestra discusión hoy. Por favor no duden en pararme a cualquier tiempo para preguntarme cualquiera cosa. Esta es una discusión abierta, y queremos que todas se sientan cómodas. También vamos a darles una hoja que tiene nuestra información de contacto."

Bloques de preguntas	Preguntas
INTRODUCCIÓN AL TEMA	1. Por favor, al inicio dicen su nombre y nos dicen ¿cuánto tiempo viven en El Alto?
	2. ¿Qué significa para ustedes la frase "buena salud?" Cuando escuchamos la frase "buena salud," ¿qué es lo primero que imaginamos o pensamos? ¿Qué quiera decirnos esta frase "buena salud?"
NUTRICIÓN DE LA FAMILIA	3. Si yo ahora digo, "buena nutrición," ¿qué piensan ustedes?, ¿Qué significará para ustedes esta frase?, o ¿será igual que "buena salud?" ¿Por qué? ¿Qué significa buena nutrición?, o ¿esta frase será igual a buena salud? ¿Qué opinan?/¿Por qué no es igual? ¿Por qué si es igual?
	4. ¿Qué comidas o bebidas que ustedes conocen o consumen, son nutritivas? ¿Qué alimentos líquidos son nutritivos?, ¿Qué líquidos que ayudan a la nutrición? ¿Pueden mencionarlos?
	5. ¿Qué comidas son nutritivas? ¿Qué alimentos sólidos ayudan a la nutrición? ¿Pueden mencionarlos?
	6. ¿Pueden contarnos que alimentos consumen normalmente en sus casas?, ¿Qué alimentos utilizan para cocinar?
	7. ¿Podrían contarnos cómo es un día de alimentos en su casa o familia? ¿Cómo inician el día en su casa para alimentarse?

	8. ¿Qué es más importante, el desayuno, almuerzo, cena o tal vez un refrigerio (alguna fruta, yogurt, a media mañana)? ¿Cuántas veces comen cada día? Incluyendo alimentos a media mañana o media tarde.
	9. ¿Su familia gozará de buena nutrición? Si-No ¿por qué?
	10. ¿Qué cosas ayudan a su familia a tener buena nutrición?
	11. ¿Qué problemas han tenido ustedes para dar buena nutrición a su familia o a sus wawitas o a ustedes mismas?
EXPERIENCIAS CON LA EDUCACIÓN NUTRICIONAL	12. ¿En los últimos dos años, ustedes han recibido alguna información o educación sobre nutrición?, ¿Quiénes les informaron? ¿Cómo fue esta información?
	13. ¿Qué le dijo el doctor o la doctora cuando le hablo de nutrición?, ¿de qué le hablo?, ¿Dónde atiende este doctor/a?, ¿le dio algún folleto o material para que usted lo revise y recuerde de lo que hablaron sobre nutrición?, ¿Qué le pareció a usted todo lo que le dijo este personal de salud?
	14. ¿Esta información que han recibido sobre nutrición les ha servido, lo han podido utilizar? Si-No ¿Por qué?
	15. ¿Qué les gustaría aprender sobre nutrición? Por ejemplo, para el desarrollo de su wawa.
	16. ¿De qué forma les gustaría aprender? (dar ejemplos de sus experiencias previas con la educación) ¿Qué les gustaría que repliquemos? (ejemplos son charlas, videos, lecciones,…)
	17. ¿La información que han recibido les ayudo a cambiar sus hábitos de nutrición en su casa, en su familia o en ustedes?, Si-No ¿por qué? ¿Qué hábitos cambiaron?
COSTUMBRES, TRADICIONES SOBRE LA NUTRICIÓN	18. ¿Cuándo ustedes estuvieron embarazadas hubo algunos alimentos que no debían consumir porque afectaría a su bebé?, ¿Qué alimentos eran?, ¿Por qué no debía consumirlos?, ¿Quién le dijo?
	19. ¿Durante la etapa de lactancia (ahora), hay algunos alimentos que usted no debe consumir?, ¿Qué alimentos son?, ¿Por qué no debe consumir?, ¿Quién le dijo esto?
	20. ¿Ustedes conocen alimentos o bebidas que causan una mala nutrición?, ¿pueden mencionar que alimentos o bebidas son?
	21. ¿Si podríamos mencionar por edades, podrían decirnos que alimentos No deben consumir los bebés de 6 meses hasta su 1er añito?, ¿Por qué?

	22. ¿Qué alimentos deben consumir los niñas y niñas de 1 año hasta sus 2 años?, ¿por qué?
	23. ¿Qué alimentos tradicionales son importantes para la buena nutrición? ¿Comen ustedes estos alimentos? ¿Por qué (no)?
CONOCIMIENTO GENERAL SOBRE MAL NUTRICIÓN Y LA NUTRICIÓN AFCETIVA	24. ¿Ustedes saben algunas practicas que causan desnutrición en los niños y niñas?
	25. ¿Ustedes saben que alimentos y hábitos causan mucho daño en el organismo de los niños y niñas?, ¿pueden mencionarnos?
	26. Además de las comidas y líquidas físicas, ¿cuáles son otras maneras con las que podemos alimentar y nutrir a nuestras wawitas?
	27. ¿Pensando en talleres de nutrición organizado por el NIDI [para grupos de mamás], cuantas mujeres deberían ser invitadas en cada sesión? Estos talleres serán con grupos de mamas. ¿Cuántas mamas deberían ser en un grupo para que ustedes se sientan cómodas y libres?
	28. ¿De cuánto tiempo deberían ser los talleres o las charlas?
CONCLUSIONES Y DESPEDIDAS	29. ¿Creen que hay algo más para conversar o sugerir en este momento?, ¿hay algunas cosas que les gustaría sugerir sobre esta conversación de nutrición antes de irnos?

APPENDIX 3: FOCUS GROUP PARTICIPANT SURVEY

Información General	
Madre # (color de camiseta)	
Hospital/Grupo	o Los Andes NIDI: Sí / No o Corea
Fecha de encuesta	_____-_____-_____ (DD-MM-AAAA)
Preguntas	
1. ¿Cuántos años tiene usted?	_____ años
2. ¿Se considera perteneciente a algún grupo indígena? (*Sigua a #4 si "No" o "No sabe / no responde.")*	o Sí o No o No sabe / no responde
3. ¿De qué grupo indígena se considera usted descendiente?	o Quechua o Aymara o Guaraní o Otro: _____ o No sabe / no responde
4. ¿Qué idioma habla usted principalmente en su casa?	o Castellano o Aymara o Quechua o Otro
5. ¿Cuál es su estado civil?	o Casada y vive junto con su esposo o Concubinato o Separada/Divorciada o No tiene pareja o No sabe/no responde
6. ¿Cuántos hijos e hijas tiene usted?	_____ hijos e hijas
7. ¿Cuáles son las edades de cada uno de sus hijos e hijas?	
8. ¿Usted actualmente trabaja?	o Sí o No o No sabe / no responde
9. ¿Cuántas personas viven en su hogar?	_____ personas
10. ¿Usted recibe el bono Juana Azurduy de Padilla?	o Sí o No o No sabe / no responde
11. ¿Usted recibe el subsidio del seguro? (¿Usted recibe los alimentos del seguro?)	o Sí o No o No sabe / no responde
12. En las últimas cuatro semanas, ¿le preocupó que en su hogar no hubuiera suficientes alimentos?	o Nunca o Pocas veces o A veces o Con frecuencia
Iniciales de encuestadora:	

APPENDIX 4: PROVIDER INTERVIEW INFORMATION SHEET

¡Muchas gracias por reunir con nosotros hoy! Me llamo Adam, y ella es mi colega Kat. Somos estudiantes de maestría en el grupo de investigación de Dr. Juan Leon en la Universidad Emory en los Estados Unidos. También somos parte del equipo que está realizando el estudio llamado "Nutrición, Inmunología y Diarrea Infantil," o "NIDI," aquí en Hospital [Los Andes / Corea]. Nuestro grupo de investigación está intentando aprender cómo podemos usar nuestros conocimientos y recursos para apoyar su hospital en proveer los mejores servicios nutricionales maternales e infantiles posibles.

Hoy le preguntaré algunas preguntas mientras Kat toma notas. Antes de empezar, voy a dedicar unos cinco minutos para darle alguna información sobre nuestra entrevista. Ud. puede pararme a cualquier tiempo para preguntarme cualquiera cosa. Y para su referencia, aquí está una copia de la información que le estoy diciendo a Ud.

Esta entrevista tomará unos cuarenta y cinco a sesenta minutos, y es totalmente voluntaria.

El propósito de esta entrevista es identificar necesidades, recursos, y oportunidades importantes para nutrición materna e infantil para que el grupo de Dr. Leon pueda apoyar Hospital [Los Andes / Corea] en proveer servicios nutricionales de alta calidad. No hay respuestas correctas ni incorrectas. ¡Solo hay sus opiniones! Ya que castellano no es nuestro idioma nativo, Kay y yo tal vez hablemos del uno al otro en inglés para asegurar que entendamos lo que dice Ud. ¿Está bien? ¿Tiene algunas preguntas hasta ahora?

Su entrevista, junto con entrevistas con otros empleados del hospital, encuestas con empleados, y encuestas con madres, me ayudará en hacer un reporte para el grupo de investigación de Dr. Leon. Este reporte nos ayudará en colaborar con Hospital [Los Andes / Corea] para optimizar los servicios nutricionales maternales e infantiles acá. El reporte será para Dr. Leon en la Universidad Emory, y será anónimo. La preguntaré su nombre y título oficial de trabajo durante esta entrevista, pero no la incluiré esta información en ninguno reporte ni comunicación con otros en el hospital. De todos modos, si Ud. prefiera no contestar una pregunta, no tiene que hacerlo. También puede parar la entrevista en cualquier momento. ¿Todo de eso tiene sentido? ¿Tiene algunas preguntas o dudas?

¡Bien¡ Un requisito más. Me gustaría su permisión para grabar esta entrevista para que la grabación me pueda ayudar en transcribir y resumir todo lo que dijo Ud. Mantendré la grabación y mis notas seguras y confidenciales para que solo miembros del equipo de Dr. Leon pueden accederlas. Ud. puede decir sí o no a grabar la entrevista, y esto no afectará la entrevista. ¿Tengo su permiso grabar esta entrevista?

Si "Sí:" ¡Bien, gracias!
Si "No:" Está bien. Kat tomará notas, pero no grabaremos la entrevista.

¿Tiene algunas más preguntas o dudas antes de empezar?

¡Bueno! [Ahora voy a empezar la grabación.] ¡Empecemos!

<u>Información de Contacto</u>

Si tiene algunas preguntas, dudas, o sugerencias, por favor contacte a:

Adam Lipus (estudiante de maestría, Universidad de Emory): adam.lipus@emory.edu
Dr. Juan Leon (profesor, Universidad de Emory): juan.leon@emory.edu

APPENDIX 5: FOCUS GROUP INFORMATION SHEET

¡Muchas gracias por venir hoy!

Esta conversación se trata de la nutrición materna-infantil. Los facilitadores y facilitadoras son parte del Centro de Atención Integral para Adolescentes (CAIA) en La Paz, que realiza el estudio "NIDI" (Nutrición, Inmunología, y Diarrea Infantil) en los hospitales Los Andes y Corea.

Uno de los propósitos de hoy es informarles sobre el desarrollo de talleres nutricionales dirigido a mujeres de la ciudad de El Alto, mujeres madres y mujeres que cuidan a wawas pequeñas. La razón principal por la que las invitamos a esta conversación, es para que podamos escuchar y conocer sus opiniones sobre la nutrición y sus experiencias con educación nutricional.

Su participación en este dialogo compartido es completamente voluntaria. Esta reunión tomará una hora y media aproximadamente. Realizaremos preguntas a todo el grupo y también de forma individual para que todas tengan la oportunidad de compartir y contarnos sus opiniones.

Esperamos que ustedes se sientan cómodas y puedan participar con mucho entusiasmo y energía. Sin embargo, si usted no se siente cómoda para responder alguna pregunta, no tiene que hacerlo. Cuando hable, por favor le pedimos que sea lo más abierta y honesta posible; nadie estará calificando las respuestas. ¿Por qué? ¡Porque no hay respuestas correctas ni incorrectas! Solo estamos compartiendo opiniones, y cada opinión es muy valiosa.

Les pedimos también que toda la información que se comparta hoy sea respetada y tratada de manera confidencial, ya que algunas personas del grupo compartirán información de sí mismas, de sus familias, pero de manera muy privada. Les pedimos por favor que ustedes respeten la intimidad de todas, tanto como sea posible, evitando compartir la información que se dialogue hoy con otras personas ajenas a esta conversación o ambiente.

El equipo de facilitadores y facilitadoras presentes hoy realizaran un resumen de todas las opiniones que ustedes realicen. Este resumen nos permitirá elaborar los contenidos y planificar los talleres nutricionales para su posterior desarrollo. Mencionarles que toda información recogida hoy es muy confidencial. No vamos a anotar sus nombres, y nos comprometemos a mantener sus datos personales en reserva, es decir en anonimato.

¡Gracias por su colaboración!

Información de Contacto

Si usted tiene algunas preguntas, dudas, sugerencias, o comentarios, por favor contáctese con:

Susana Catunta Calle: 72576636
Lic. Adam Lipus: adam.lipus@emory.edu
Lic. Katherine Zielke: katherine.craigue.zielke@emory.edu
Dr. Juan León: juan.leon@emory.edu

APPENDIX 6: CODEBOOK FOR TRANSCRIPT ANALYSIS

Code	Definition	Example (Spanish)	Translation (English)
Evidence	Information/logic used to draw conclusions on cause and effect	"Por ejemplo, mi abuelita…ha vivido hasta sus noventa y tantos. Ya hoy en día ya no existe personas así…Yo creo que por eso porque ellos siempre han consumido cosas naturales..."	"For example, my grandma…has lived to her nineties. Today there aren't people like this anymore…I think it's because they have always consumed natural things..."
Food Quality	Healthiness / unhealthiness / value / usefulness of different foods, food groups, or meals	"Los alimentos…ahora ya no son naturales. Ahora le inyectan, son injertos, le hacen—lo inyectan para que sea más grande, para que sea dulce. Y ya no es natural."	"Foods…are no longer natural. Now they inject them, they are *injertos*, they make them—they inject them to be bigger, to taste better. And it is not natural anymore."
Health Conditions	Other diseases/conditions of concern for maternal and infant health (these may or may not have a perceived link to nutrition)	"Porque hay muchas mujeres que se embarazan muy jóvenes. Y las manejan los suegros y los papás."	"Because many women are getting pregnant at a very young age. And the mothers-in-law and parents are taking care of [managing] them."
Health System	The structure/function of Bolivia's health system (at a national level, not specific to any particular health facility)	"El primer nivel…los han sobrepasado y son muy pocos su capacidad técnica...¿Entonces dónde pasa la gente? Al segundo nivel. El segundo nivel es como un sándwich que está en el medio entre el primero y el [tercer]."	"The first level…they have exceeded it, and their technical capacity is very low…So where do people go? To the second level. The second level is like a sandwich that is in the middle between the first and the [third]."
Knowledge / Education	Recognition / understanding / comprehension of, or education on, nutrition topics (MUST directly reference knowledge; does NOT refer to when a respondent simply demonstrates knowledge or lack thereof)	"Esos más que todo les daba, porque esas verdes de la zanahoria a mí me ha curado. Yo eraba muda. Eso me ha curado, y nosotros lo botamos en aquí. Lo botamos, y a veces es mucha falta de información, siempre nos falta."	"Those more than anything I was giving them, because those carrot greens have cured me. I was mute. That has cured me, and here we throw it away. We throw it away, and sometimes it is a large lack of information, we always lack it."

Code	Definition	Example (Spanish)	Translation (English)
Management	Coordination / upkeep of people / resources / activities, including logistical considerations	"Porque uno tiene dinero. Tal vez tenga poco, pero sabe usted que en el mercado una hamburguesa, por ejemplo, cuesta 5 pesos. Y con esas 5 pesos puede comprar hasta 50 plátanos."	"Because one has money. Maybe she has little, but you know that in the market a hamburger, for example, costs 5 pesos. And with those 5 pesos she could buy up to 50 bananas."
Media	Instruments of communication, including radio, video, TV, pamphlets, etc.	"Yo creo que sería mejor hacer un video donde te informen más sobre las verduras y las frutas y todo lo que contiene."	"I think it would be better to make a video where they inform you more about vegetables and fruits and everything they have."
Motivation	Interest in / dedication towards / perceived importance of / willingness to prioritize healthy nutrition	"Pienso que no me alimento bien porque hay veces, digamos, soy joven y no me importa mucho, ¿no ve?"	"I think that I do not eat well because sometimes, let's say, I'm young and it is not very important to me, you know?"
Nutrition in Population	Nutrition status and/or feeding practices in the population (includes descriptive and evaluative statements)	"Porque a veces la mamá te dice, "No hay leche. No sale." Entonces el esposo, ¿qué hace? Hace comprar el biberón, la fórmula, y rápida les da, ¿no?	Because sometimes the mom tells you, 'There's no milk. It's not coming out.' So what does the husband do? He buys a bottle, formula, and quickly they give it [to the child], no?"
Nutrition Services	Descriptive or evaluation evaluative statement on the effectiveness of existing nutritional services (such as education, supplementation, food support)	"A mí, la verdad, no me saben dar información. Ni, digamos, hasta cuando le pesan y le miden. Le pesan, y anotan, no más, creo. Y no saben decir, 'Mira, tú hijo está así.'"	"Truthfully, they don't give me information. Not even, let's say, when they are weighing and measuring [the baby]. They weigh, they write it down, nothing more. And they don't think to say, 'Look, your child is like this.'"
Resources	Time / money / infrastructure / materials available for or devoted to nutrition	"Pero a veces pesamos con la gran realidad, digamos, la parte económica, ¿no? Porque te dicen, '¿Con qué plata vamos a comprar?'"	"But sometimes we come up against the great reality, let's say, the economic factor, no? Because they say, 'With what money are we going to buy that?'"

Code	Definition	Example (Spanish)	Translation (English)
Sociocultural Environment	Cultural beliefs / traditions and interpersonal interactions (among mothers, friends, families, acquaintances, and health professionals) relating to or impacting food / feeding / nutrition; includes descriptive and evaluative statements	"Tiene un fuerte componente la cuestión cultural. Que yo, como [proveedor], que la decía a la mamá que tiene que empezarle con estas verduras, eh, con estas, eh, frutas, o estos cereales. La mamá, obviamente, le va a hacer más caso, seguramente, a la vecina, a la abuela, la suegra, ¿no? Que tienen fuerte peso en el criterio que de las madres jóvenes."	"The cultural issue has a strong role. Whereas I, as a [provider], that I say to the mom that she has to start with these vegetables, eh, with these, eh, fruits, or these cereals, the mom, obviously, is going to pay more attention, surely, to the neighbor, the grandmother, the mother-in-law, no? Who have a strong weight in the opinion of the young moms."
Suggestions	Specific ideas / topics of interest / proposed solutions to address nutritional problems, such as a way to improve services (refers to specific solutions, NOT to mere descriptions of need/problems)	"A cada madre que esta daño de lactar debería tener como la cita con el médico, la cita con la nutricionista, para que una nutricionista le diga como está, que tiene que consumir…"	"Every mom that is breastfeeding should have an appointment with the doctor, an appointment with the nutritionist, so that a nutritionist may tell them how [the baby] is, what s/he should eat…"
Supplement-ation	The use of pills / drugs / medicines / supplements in relation to nutrition	"Yo creo que no es una buena alimentación, digamos, un apoyo, dar una vitamina. Porque las pastillas son químico. Yo creo que hacen más daño."	"I believe that it is not a good nourishment, let's say, a support, to give a vitamin. Because pills are chemical. I believe that they do more damage."
Taste	Inclinations for / against particular food types, flavors, etc.	"Hay a veces ni los niños, generalmente les das cereales, les das otras cosas, y ellos a la primera saborean y dicen, 'No, es feo.'"	"Sometimes not even the kids, generally you give them cereals, you give them other things, and at the first taste they say, "No, it's gross."