INDIGENOUS MOTHERS’ UNDERSTANDINGS OF HEALTH PROMOTION EDUCATIONAL MATERIALS WHICH AIM TO REDUCE CHILD UNDERNUTRITION IN CANGAHUA VILLAGE (HIGHLAND OF ECUADOR)

Maria Jose Mendoza Gordillo

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ABSTRACT

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INDIGENOUS MOTHERS’ UNDERSTANDINGS OF HEALTH PROMOTION EDUCATIONAL MATERIALS WHICH AIM TO REDUCE CHILD UNDERNUTRITION IN CANGAHUA COMMUNITY (HIGHLAND OF ECUADOR)

Chronic undernutrition is a public health issue in Ecuador that affects a large number of children under the age of five years old. As a result, the Ecuadorian government has developed different health promotion programs focused on child undernutrition, however these have yet to deliver any significant improvements in the nutritional status of Indigenous children who live in rural areas in the Highlands of the country.

This dissertation aims to explore indigenous mothers understanding of health promotion materials focused on child undernutrition and also the key cultural aspects regarding nutrition in the Cangahua community in the Highlands of Ecuador. A qualitative approach based on the principles of a ‘Grounded theory’ was the methodology selected to develop this research. Eleven face to face semi-structured interviews were conducted with indigenous mothers aged between 18 to 32 years old, who each have one or more children under the age of five years old.

Most of the participants stated that the food habits of their family are based on the crops that they cultivate in a small space near their houses, which is high in carbohydrates and low in protein, fruit and vegetables. The eleven participants of the study did not understand either the written messages or the images provided via health promotion educational materials developed by the Ecuadorian government. The mothers stated that the written messages are had not been developed for people who live in the ‘mountains’ and they could not understand the relationship between the images and the text of the leaflets.

The implications of this research are important for future health promotion and public health programs, due to the fact that existing educational materials are not adequate for the indigenous peoples, due to a number of cultural issues, including the text used, typical levels of education of women in the community, etc. Thus, any new health promotion educational materials focused on child undernutrition should be developed with a multicultural approach in which the cultural context of the Indigenous communities have to be taken into account via the use of group activities such as workshops with verbal communication and real examples related to the indigenous peoples daily reality.
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AUTHOR DECLARATION

1. During the period of registered study in which this dissertation was prepared, the author has not been registered for any other academic award or qualification.

2. The material included in this dissertation has not been submitted wholly or in part for any academic award or qualification other than that for which it is now submitted.

3. The dissertation is an original piece of work undertaken by the author.

4. The programme of advance study of which this dissertation is part has consisted of:

   4.1. Eight taught modules or equivalent

   4.2. Supervision tutorials

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Signature:

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1. INTRODUCTION

One essential human right is adequate nutrition for both boys and girls in order to reach a correct growth and wellbeing (Kumar et.al, 2006). However, in middle income nations a large number of children have suffered from malnutrition, result of a cycle that involves cause and consequence of inadequate human health, development and accomplishment throughout life (World Bank, 1993; World Health Organization, 2002; Popkin, 2003). In line with this, since 1986, the year in which the first study on infant nutritional status in Ecuador was carried out, child undernutrition has been declared a social and public health problem in the country due to the results of the survey, which showed that 34% of children under five years old suffered from chronic undernutrition (National Secretariat of Planning and Development, 2009). However, in 2011 the percentage of children who suffered from chronic undernutrition had dropped slightly to 21.8%, alarmingly though 93.9% of the total number of children suffering from chronic undernutrition were from indigenous communities (Integrated System of Indicators, 2011). However, even though the Ecuadorian government and international organizations have developed actions to decrease undernutrition in the country, especially in specific populations such as indigenous children, the undernutrition rates are still higher in these communities, compared with other ethnicities (World Bank, 2007).
Aims of the Study

The present study aims to explore the understanding of Indigenous mothers of health promotion educational materials which aim to reduce child undernutrition in the Cangahua Village (in the Highlands of Ecuador). Accordingly the aims of the research are as follows:

- To explore how Indigenous mothers gain an understanding of and implement health promotion educational strategies focused on child undernutrition.

- To explore key cultural aspects regarding child nutrition in the Cangahua village.

Due to the nature of the research a qualitative methodology and the principles of ‘Grounded theory’ were used for exploring and generating new insights into indigenous child nutrition and their mothers understanding about health promotion educational materials. The study was carried out in the Cangahua Community, in the Highlands of Ecuador and eleven indigenous mothers took part in the research. Data collection was developed via face to face semi-structured interviews following a topic guide and the interviews were digitally recorded and transcribed verbatim. The data analysis was developed following principles of ‘grounded theory’ and the discussion of the findings were related to existing literature in order to develop future suggestions for health promotion and public health practice.
This dissertation was developed over six chapters. First, the literature analysis chapter discusses relevant literature related to the research. The methodology chapter explains the research methodology chosen and how the study was undertaken. The results chapter presents and discusses the main findings of the research in relation to the participants understanding of health promotion educational materials and key aspects regarding child undernutrition. The discussion chapter evaluates how the findings of the study relate to published literature and also provides suggestions for further research into health promotion and public health in relation to the findings. Finally, the conclusion chapter gives an overview of the main aspects of the research.

The Cangahua Community in the Highlands of Ecuador

Illustration 1. Map of Cangahua Community

Source: Study area (by the author based on Military Geographic Institute of Ecuador, 2013)
Cangahua is a rural community in the north of Ecuador, which is located 81 km from Quito, the capital of Ecuador (Davalos, 2003). Notably, one of the primary physical characteristics of the area is its weather, which is marked for being cold due to its height, at 3186 meters altitude above sea level (Rural Parish Governments of Ecuador, 2013). In this context, in terms of production in this community the main agricultural products grown and distributed in neighbouring areas are onions and potatoes as well as small-scale livestock due to the conditions altitude and uneven ground (Provincial Government of Pichincha, 2014).

In terms of population, according to the Ecuadorian national census, Cangahua has a total of 16,231 inhabitants, 90% of the inhabitants are indigenous. In terms of its social indicators, illiteracy is regarded as one of the most disturbing issues in the study area (National Institute of Statistics and Censuses of Ecuador, 2010). Figures show that there are 45 illiterate people out of 1855 between the ages of 15 to 19, 164 illiterate people out of 897 between the ages 35 to 39 and 119 illiterate people from a total of 228 between the ages 55 to 59 (National Institute of Statistics and Censuses of Ecuador, 2010a). In addition, Cangahua has one of the highest rates of child undernutrition in the country with 46.85% of children under five years old, suffering from chronic undernutrition (Calero and Molina, 2010).
2. BACKGROUND AND LITERATURE ANALYSIS

This chapter presents, discusses and analyses literature of relevance to this research project and also gives a background overview of two prominent health promotion programs focused on child undernutrition, undertaken by the Ecuadorian government.

The databases searched for the literature review were Academic search complete, Psycinfo, Cinahl Plus, Medline, BMJ and Google scholar. The resources used include: peer reviewed journals, magazines, books and publications from international organizations and official web pages of the Ecuadorian government in both English and Spanish. The research was not constricted to a specific time frame in order to obtain a historical view of child undernutrition and its context in Ecuador. The main key terms used when searching were: health inequalities AND child malnutrition OR child undernutrition AND Highlands OR Andes OR middle income countries. Indigenous child malnutrition AND Andes OR Ecuador. Child malnutrition AND Ecuador. Food security AND Andes OR Ecuador. Health Education AND Adults AND Strategies. Indigenous AND Health Promotion AND Education.

The topics in this chapter are the followings:

- Indigenous health context and inequalities in health
- Child undernutrition in Andean countries: the case of Ecuador.
- Nutritional Practices in the Highlands of Ecuador.
- Multicultural health promotion educational strategies for indigenous peoples.
2.1. Background

2.1.1. Health Promotion Programs Focused on Child Undernutrition in Ecuador

The health care sector in Ecuador has improved from 2008 due to a new constitution in which the government guarantees access to health care to all citizens. However, health promotion programs in Ecuador have faced issues in relation with organization, targeting differing populations, equity and distribution of resources (Rasch and Bywater, 2014)

In Ecuador in 2005 the health expenditure per capita was $289 and the expenditure in nutritional health promotion programs was $ 251 million dollars (World Bank, 2007). However, in 2012 the health expenditure per capita increased to $474 and the health expenditure in nutritional health promotion decreased at $100 per capita (World Bank, 2014). Thus, the instability in the budget of health promotion programs focused on malnutrition might reflect the efficacy problems of the programs in terms of range and educational resources.

The Ecuadorian constitution states in objective 2 that improving the nutritional status of children is a top priority for the Ecuadorian government and as a consequence the Ministry of public health and the Ministry of social inclusion has developed two main health promotion programs to reduce chronic child undernutrition in children under five years old: ‘Nutrition Towards Zero Undernutrition’ and ‘Chis-Paz’ food supplement (National Secretariat of Planning and Development, 2009; National Secretariat of Planning and Development, 2013).
The Ministry of Public Health in Ecuador proposed as part of a national nutrition strategy the implementation of the project ‘Nutrition towards Zero Undernutrition’ in order to achieve the goal of reducing malnutrition in children during the first five years of life. The potential population identified as part of the program was estimated at 122,151 children under five years old in 2012 (Ministry of Public Health, 2012). The program consisted of two main components: the first was a campaign of education and awareness raising in relation to nutritional care for children under 5 years old; accordingly, the aim was to develop nutritional education and change food behaviours in the country via the use of leaflets. The second component of the project aims to increase the access to child health care control in medical centres in each of the rural communities through the use of monetary incentives (Ministry of Public Health, 2012).

The Ministry of Public health also developed the ‘Chis-Paz’ food supplement program which aims to reduce anaemia in children aged between six months and 5 years. The Chis-Paz food supplement program has two components: the first one is to incorporate educational strategies based on the cultural knowledge of the different ethnic communities who live in Ecuador and the second component is to ensure the consumption of micronutrients in the child population aged between 6 to 59 months (Ministry of Public Health, 2011). The main aim of the Chis-Paz program is to educate the mothers in rural communities on topics related to healthy eating habits, exclusive of breastfeeding and to educate them about complementary feeding, and the introduction of the fortification supplement Chis –Paz in the diet of their children.
(Ministry of Public Health, 2011). The composition of Chis-Paz is: iron, zinc, vitamin A, Folic Acid, vitamin and maltodextrin and each box contains 30 individual packets of 1 gram, the distribution is made through the medical centre of each community (Ministry of Public Health, 2011). (Appendix 1 show the Chis-Paz product). Every time that a child receives a box of Chis-Paz he or she also receives a leaflet in which the steps of how to prepare the food supplement are explained via written text and a set of images; accordingly, the mother should put 1 sachet of Chis- Paz in one of the daily meals of the child Monday to Friday until they finish the 60 sachets, which is the recommendation for every child (Ministry of Public Health, 2011).

2.2. Literature Analysis

2.2.1. Indigenous Health Context and Inequalities in Health

Indigenous is a denomination to identify a group of people that are descendants from populations living in countries that were colonized such as the Mayas in Mexico and the Kewchas in Colombia, Ecuador, Peru and Bolivia and even though they lived in the same territory with other ethnicities, they maintained their own political, cultural and social structure (Panamerican Health Organization, 2010). The social organization of indigenous populations in their communities is different from the organization of other ethnicities; accordingly, indigenous communities are organized according to hierarchies related to gender, age and marital status (Pan American Health Organization, 2008a). Worldwide there are approximately 370 million indigenous peoples and in Latin America and the Caribbean region more than 40% of the rural population are indigenous people (Panamerican Health Organization, 2010).
Indigenous populations are distributed all over Latin America, especially in places in which access is difficult such as mountains, volcanos and the jungle. However, due to internal and external migration some indigenous families have migrated to neighbourhoods near the big cities and in most cases they live in poverty and suffer from health problems and discrimination (Pan American Health Organization, 2008a). In line with this, Hooker (2005) argues that even though most Latin American countries state in their constitution respect for all ethnicities, due to the fact that Latin America is a multicultural region, there still exists higher levels of racial discrimination among ethnic communities, which might cause detriment to their health.

Inequalities in health have existed throughout time and across societies worldwide as a consequence of poor health policies and unfair economic arrangements. This is despite the fact that one of the global aims and priorities in health policy is the creation of adequate conditions for the entire population, in order to reach and maintain their maximum level of health (Graham, 2009). Accordingly, the disparities in health outcomes of not only individuals but also segments of the population who have been exposed to an unequal distribution of economic and social resources that have affected their health and well-being is known as health inequality (Kawachi et al., 2002). In fact, people with the lowest health status are most often found in unequal societies, which do not provide their inhabitants with adequate access to resources in order to satisfy their health needs (Lynch et al., 2000; Wilkinson, 2005). Furthermore, social determinants of health such as gender, age, ethnicity, socioeconomic position, education, income, lifestyles and geographical location, influence the way in which
health outcomes are distributed between people in different societies (Marmot et al., 2008; Rose and Hatzenbuehler, 2009).

The disparities in health outcomes between ethnicities have been analysed in the context of socioeconomic and racial discrimination explanations (Williams, 2006). In support of this position, Williams and Collins (2001) argue that socioeconomic status is a crucial cause of inequalities in health, especially between different ethnic groups. Accordingly, socioeconomic status plays an important role in the relationship between ethnicity and health inequalities in the population (Krieger, 2000; Nettleton, 2013). Although most of the research relating to ethnicity and inequalities in health outcomes has attributed the cause as being as a result of a low socioeconomic status among ethnic minorities, racial discrimination could be a further explanation to understand health inequalities and ethnicity (Nazroo, 1998; Karlsen and Nazroo, 2002; Krieger, 2000).

Even though there are a great number of indigenous peoples all over the world living in different cultural contexts, there are similarities in their poor health outcomes (Stephens et al., 2005). In line with this, indigenous peoples worldwide not only have to face health problems such as high infant mortality, malnutrition, retarded growth and shortened life expectancy at birth but also social problems such as poverty, hunger and drugs and alcohol abuse (Gracey and King, 2009).

The ethnicity, socioeconomic status and geographical context are determinants for the cultural context of the populations (Pan American Health Organization, 2008b). As a
result, the indigenous populations in Latin America have developed their own knowledge, practices and behaviours related to health and illness process, nature and spiritual care; in fact these practices are called “traditional” medicines (Montenegro and Stephens, 2006). In line with this, traditional medicines are practices that involve the prevention, diagnosis, prognosis, treatment and cure through the use of different techniques such as plants and animals (Panamerican Health Organization, 2010). In addition, ‘Yacha’ the traditional doctor in the indigenous communities, is the person responsible for sharing his or hers knowledge through oral messages from one generation to another (Rojas, 2003).

Nowadays, in most national constitutions of Latin American countries it is stated the importance of intercultural medicine which consists of prevention, health promotion, diagnosis and treatment of illnesses according to the necessity of the indigenous population, including a combination of knowledge of traditional medicines and professional health care practitioners, in order to improve the health status of this population (Montenegro and Stephens, 2006).

2.2.2. Child undernutrition in Andean countries: the case of Ecuador

One essential human right is adequate nutrition for both boys and girls in order to reach a correct growth and wellbeing (Kumar et.al, 2006). However, in middle income countries a large number of children have suffered from undernutrition, resulting in a cycle that involves cause and consequence of inadequate human health, development and accomplishment throughout life (World Bank, 1993; World Health Organization, 2002). In the same vein of research, growing evidence suggests that environmental,
socio-political factors and poverty are the main causes of undernutrition in middle income countries (Black et al., 2008). Accordingly, the consequences of undernutrition remain present throughout the lifecycle (Engle et al., 2007); for instance, in children the consequences are low schooling and the risk of rapid weight gain after infancy and in the future a low economic productivity, risk of high glucose concentrations and high body-mass index (Victora et al., 2008; Adair et al., 2013). Furthermore, child undernutrition has a number of negative effects on the population, especially in the areas of education and productivity (United Nations Children Fund, 2006).

Even though in Latin America and the Caribbean region chronic child undernutrition has declined from 19.1% in 1990 and 15.8% in 2000 to 13.8% in 2008 because of improvements in the health care sector and low rates of fertility levels (United Nations Children Fund, 2006; Black et al., 2008), in the highlands of Andean countries of Latin America chronic undernutrition remains a problem in certain populations such as indigenous communities, due to social and ethnic inequality and poverty (Larrea and Freire, 2002). In support of this position, a considerable body of research suggests that significant numbers of children who have suffered from chronic malnutrition in Andean countries have a lower socioeconomic status, mothers with low educational qualifications and come from ethnic minority groups such as indigenous communities (Larrea and Freire, 2002; World Bank, 2007; Black et al., 2008). However, there is a debate that not only cultural and social factors but also geographical characteristics in Andean countries such as the high altitude of the land is associated with low birth weight and height in indigenous babies who live in the highlands (Giussani et al.,
In support of this position, Morales et al. (2004) argues that hypoxia as a result of the high altitude in the villages in the Andes is likely to be a negative factor in children’s growth.

Ecuador is a multicultural country with 71.9% of the population being identified as being of a mixed ethnicity, 13.9% White, 7.2% Black and 7% Indigenous (National Institute of Statistics and Censuses, 2010b). As a result, Ecuador has to face a variety of issues related to communication, education, public policies and health in order to be an inclusive country that serves the needs of all its inhabitants (Rojas, 2003). In support of this position, Karlsen and Nazroo (2002) suggests that ethnic minorities tend to have poorer health and social outcomes when compared with other citizens. For example, in Ecuador, in June of 2014, 41.69% of people living in rural areas, the majority of whom are indigenous, suffered from poverty in contrast to only 16.30% of people living in urban areas of the cities (National Institute of Statistics, 2014). In addition, there is a wide gap in the number of years of schooling between non indigenous and indigenous children; for instance, in Ecuador in 2004 the average years of schooling were 9.6 in non-indigenous children, while in indigenous children it was only 5.9 years (Hall and Patrinos, 2005). Similarly, in 2010 3.7% of the white population was illiterate, whilst 20.4% of the indigenous population was illiterate in the same year (National Institute of Statistics, 2010a). Thus, these figures go some way to showing how indigenous peoples have suffered social inequalities in Ecuadorian society.
Since 1986, which was the year in which the first study on infant nutritional status in Ecuador was carried out, child undernutrition has been declared a social and public health problem in the country due to the results of the survey, which showed that 34% of children under five years old suffered from chronic malnutrition (National Secretariat of Planning and Development, 2009). Indeed, stunting, which is categorized as being a height for age < 2 SD below the international standard, is the most representative type of undernutrition in Ecuadorian children (Larrea and Freire, 2002; Manary and Solomons, 2004). The prevalence of undernutrition in Ecuadorian children differs throughout the socioeconomic hierarchy, ethnicity and geographical locations of the country (Larrea and Freire, 2002). Accordingly, in 2006 31 % of children living in rural areas suffered from chronic undernutrition, in contrast to 17% of children in urban areas. Interestingly, as the figures show the majority of children who suffered from stunting are from the highlands with 32% of cases, in contrast to 16% of children from the coastal region and 23% of children from the amazon (National Secretariat of Planning and Development, 2013). However, chronic undernutrition in indigenous children living in the highlands is the highest in the country with 47% compared with other ethnic groups (Ministry of Public Health of Ecuador, 2013). Interestingly, in Ecuador most cases of child chronic malnutrition do not occur until a child nears the age two. Indeed, only 3% of children under 5 months old show signs of undernutrition; however, the rate increases to 10 % between 6 to 11 months old, whilst in children between 12 months to 23 months the rates increases to 28% (World Bank, 2007).
Chronic malnutrition in indigenous children in Ecuador is a public health problem that has multiple determinants at community, family and individual levels that contribute to maintain the issue among this population (Larrea and Kawachi, 2005). The main determinants are: low weight at birth, low quantity and quality of food, inadequate food distribution between family members, poor diet during pregnancy, lack of access to clean water and the mothers’ nutritional knowledge (Larrea and Kawachi, 2005; Van de Poel, 2008). For instance, a mothers’ nutritional knowledge is more important than her formal education in order to tackle child undernutrition (Appoh and Krekling, 2005).

Even though in Ecuador there has not been an official study which investigates the level of knowledge of indigenous mothers about child nutrition, evidence suggests that in 2001, 29% of illiterate people in Ecuador were indigenous woman living in the highland region of the country (National Institute of Statistics and Censuses, 2009; National Institute of Statistics and Censuses, 2009). As has previously been noted, the highlands is also the region with the highest instances of childhood undernutrition. In addition, the primary care taker of the child plays a prominent role in the nutritional status of the child in Ecuador due to the fact that the care taker, who in most cases is the nursery day care centre worker, older sibling or grandmother, is in charge of preparing food for the child and also the frequency, quantity and quality of food received (Jones et al., 2012). One study carried out in Ecuador with the Salasacas community demonstrates that the majority of children suffering from undernutrition had older siblings taking care of them, which might be the cause of a cycle of undernutrition in which not only the younger sibling but also the older sibling might
suffer from undernutrition (Stansbury et al., 2008). Thus, Rojas (2003) argues that in Ecuador the indigenous child mortality rate is related to food insecurity, undernutrition and inadequate maternal and child health care.

2.2.3. Nutritional Practices in the Highlands of Ecuador

The food supply in Ecuador is sufficient to meet the nutritional requirements of the population despite the drop in production as a result of the destruction caused by the natural phenomenon “El Niño” in 1997-98 and also the economic crisis at the beginning of the decade (FAO, 1995). In line with this, Freire et al. (2013) argues that sufficient, varied and available food does not ensure the adequate nutrition of Ecuadorian indigenous children; consequently, the problem of child malnutrition is not only caused by low economical resources or limited access to food, it is a complex problem in which cultural values, dietary patterns and lack of adequate health promotion strategies focused on child undernutrition also contribute as causes of this social and health problem.

In Ecuador the feeding practices within the population varies notably depending on ethnicity, socioeconomic position and geographical locations. For instance, poor rural households in the highlands region eat carbohydrates from potatoes, barley, quinoa, corn and wheat, whilst protein and micronutrients are rarely consumed by indigenous communities; however, in the Coastal and Amazon regions, fish and chicken are important components of the diet even in poor households (Larrea and Freire, 2002). Records show that in 2004 53.9% of mothers who live in the rural highlands and were part of the lowest quintile of poverty apply exclusive breastfeeding to their child until
6 months and the 71.6% of the total number of mothers were indigenous (Centre of Population Studies and Social Development, 2004). Indigenous mothers of the highlands traditionally start to offer complementary food when their baby is 5 or 6 months old, although the mothers continue to apply the recommendations of exclusive breastfeeding, the complementary food is not adequate (Larrea and Freire, 2002). In 2004, 26% of indigenous mothers gave cow’s milk to their children, 16.9% hot beverages based on carbohydrates and 26.1% pureed vegetables with potatoes (Centre of Population Studies and Social Development, 2004).

2.2.4. Health Promotion Educational Strategies for Indigenous peoples.

Health promotion is a strategy in which the activities of public health organisations encourage people to take control over their own health (Green and Tones, 2010). The main tool to promote health within the population is education. Indeed, health education is an important activity of health promotion, which aims to empower people to make their own choices in order to reach their wellbeing (Naidoo and Wills, 2009). Health promotion professionals should take into account the cultural differences and the reality of the beneficiaries of a health promotion program in order to avoid stereotypes and misinterpretations of the context in which the program will be developed (Kagawa-Singer and Chung, 1994; Huff and Kline, 1999). As a result, health education strategies in indigenous populations have to take into account their views in relation to health and illness and the forms of communication within the communities, it has been suggested a multicultural approach might be developed in the educational materials for indigenous populations (Kirmayer et al., 2003; Wallerstein et al., 2006). A multicultural approach in health promotion incorporates
the culture and knowledge of the community and the acceptance of their ways of communication and their perception of health & illness process in order to empower the population about their health (Frankish et al., 1999; Voorham and Visser, 2003).

The tools of communication used during health campaigns is an important aspect to take into account when a health promotion program is developed, especially when more than one culture coexists in the same society. This is due to the fact that even though the programs tend to want to generalize the information for all audiences and try to be inclusive, the misinterpretation of messages, images and symbols due to inadequate research prior to the campaign being formulated might cause negative outcomes in the beneficiaries (Kar and Alcalay, 2001). However, the majority of health educational campaigns that are developed using images and messages do not take into account the ethnic diversity, culture and educational levels of each population that coexist in a country (Labonte, 1994; Pignone et al., 2005). In support of this, one of the few studies that has investigated the understanding of health promotion educational materials in people with low educational levels carried out by Griffin et al. (2003) showed that illiterate people or people with low educational levels had difficulties to understand the content of educational materials and feel embarrassed to interact with the healthcare professionals which might result in negative outcomes of the program.

Social marketing is a strategy in health promotion which aims to develop awareness and create a favourable context to increase the motivation for the voluntary changing of behaviours through showing the benefits of a health promotion intervention
(Gordon et al., 2006). Furthermore, social marketing and advertising for health education is a cyclical process in which health professionals have an opportunity to create adequate channels of communication and materials to increase the awareness and empowerment of participants (Evans, 2006). The most common strategies to educate people regarding health are written messages and visual elements (Hastings and Haywood, 1991). Health promotion programs for indigenous populations have to take into account indigenous communities’ cultural perspectives, their views of the process of health and illness and the use of so called ‘traditional medicine’ (Panamerican Health Organization, 2010). Furthermore, health promotion educational materials for indigenous populations should be developed following parameters of visual design with colours, photos and info graphics related to their day-to-day reality also the messages should be developed in the native language of the indigenous peoples and in the official language of the country in order to promote a complete user understanding (Bell and Alcalay, 2001; Panamerican Health Organization, 2010; Torri, 2012).

This chapter gave an overview of the main health promotion programs focused on child undernutrition delivered by the Ecuadorian government in the last few years and the published literature in relation to child undernutrition and health promotion programs in an indigenous context. The next chapter is about the methodology of the present study.
3. METHODOLOGY

The following chapter explains the research methodology used during this particular project. Accordingly, this chapter justifies the importance of a qualitative approach in health research; additionally, this chapter describes the process undertaken during the selection and recruitment of participants. Finally, it explains the data collection method and data analysis employed in this piece of research.

3.1. A Qualitative Approach in Health Research

For years the research approach used in health research has been in debate due to the complex relationship between health and illness and the different theoretical trends of researchers (Bowling, 2009). The epistemological position of the researcher influences the way in which knowledge is justified and evaluated; indeed, the epistemology defines the methodology and method chosen for the research (Carter and Little, 2007). In keeping with this, over the last century the positivist perspective of social sciences has developed the idea that knowledge of the real world is separated from an individuals’ comprehension of facts (Green and Thorogood, 2014). The positivist perspective in health and social research emphasizes the importance of testing hypothesis in order to explain and predict a natural phenomenon (Bryman, 2012). Accordingly, a quantitative approach, which is considered to be an objective approach in social research, is based on the reality of the natural world, and therefore, follows the positivism perspective and the idea that it is necessary to test a theory through the analysis of numerical data (Ormston et al., 2014).
However, as a result of the increment of public health problems related to human behaviours, health researchers have needed to implement a qualitative social research approach in health sciences, in order to understand how to enhance public health practice and also public health policy in different contexts of societies (Green and Thorogood, 2014). Accordingly, interpretivism in contrast to positivism argues that the study of a social phenomenon requires the reflection, understanding and interpretation of human experiences rather than the explanation of aspects of the natural world (Silverman, 2011; Bryman, 2012). Consequently, a qualitative methodology as part of an interpretive approach aims to understand health behaviour through the use of written and oral data (Green and Thorogood, 2014). Indeed, qualitative studies allow the participants to express their perceptions, thoughts and experiences in their own perspective and context (Avis, 2005). As a result, the aim of qualitative research in the context of health, is to understand how and why communities and individuals behave in relation to their health (Silverman, 2011; Green and Thorogood, 2014).

In line with this, the researcher plays a prominent role in qualitative studies due to the fact that the interaction between the researcher and the participants during the fieldwork element of project, enriches the quality of the study and provides valuable aspects to generate insights about the data (Avis, 2005). Reflexivity, which is the critical self-conscious dynamic between the researcher and participants leads to the positioning of the researcher in the research process as an important aspect in qualitative research studies (Charmaz, 2014). Accordingly, the researcher should be aware of the importance of reflexivity during the research process and the notion of
working in different contexts and realities. Also the researcher ought to set aside his preconceptions in order to avoid bias during the study (Silverman, 2011).

As a result, a qualitative approach was used in this research project due to the fact that this study seeks to explore key perspectives regarding the nutrition of children, in the highlands of Ecuador and also the understanding of the indigenous mothers’ of health promotional educational strategies focused on child undernutrition.

3.2. **Methodology**

Due to the limited amount of time to develop this dissertation, this study was conducted using the principles of a ‘Grounded theory’ in order to explore and generate new insights about indigenous mothers’ understandings of educational strategies focused on child undernutrition in Cangahua, an Ecuadorian village. Grounded theory is a constant comparative method of research developed in the early 60’s by Glaser and Strauss (Charmaz, 2014). Grounded theory is a methodology in which the researcher develops theory from data collected systematically (Charmaz and Bryant, 2011). Indeed, grounded theory is a useful qualitative approach when the researcher wants to determine new areas of knowledge or to explore how an event has changed over time by collecting and analysing data in order to reach saturation (Bluff, 2005). The main strength of grounded theory is that the researchers and participants interact with each other and the researcher’s perspective is formed by being part of the process (Charmaz and Bryant, 2011). Furthermore, by employing a grounded theory approach the researcher can understand how individuals comprehend their world (Bluff, 2005). Although grounded theory, likewise phenomenology, are methodologies that aim to
understand the participants’ experiences in their world, grounded theory goes further than phenomenology due to the fact that it develops a theory based on how participants perceive their environment (Hancock et al., 2009).

Grounded theory is a prominent approach in health and social sciences due to the fact that it aims to develop a theory based on individuals’ experiences in order to improve health promotion practice or health care (Hancock et al., 2009). Hence, by using a grounded theory approach, I explored the indigenous mothers’ understanding of educational strategies focused on child undernutrition and also which are the key cultural aspects regarding child nutrition in the Cangahua village, in order to develop new insights about child nutrition in indigenous communities in Ecuador and to enhance health promotion practices in this population.

3.3. Data Collection Method

Grounded theory emphasises the idea that the findings of the research should emerge from the data in order to formulate a theory of the phenomena; consequently, this methodology suggests that the researcher should develop interviews or observation in order to reach the overall aim of the research (Hancock et al., 2009).

A ‘Semi-structured interview’ is a prominent method used to generate accounts of the participants’ world, in a grounded theory approach (Green and Thorogood, 2014). In fact, semi-structured interviews give freedom to the interviewee to share their ideas, beliefs and accounts of the issues that are important to them (Green and Thorogood, 2014). Even though semi-structured interviews generally consist of open-ended
questions designed by the researcher, the content and frequency of responses are given by the interviewee (Marshall and Rossman, 2006). However, if the researcher does not find it easy to access the knowledge of the participants, verbal prompts such as questions or noises to encourage the participant to continue the conversation are a useful strategy to explore the issue of the research (Bluff, 2005). In addition, field notes enhance the process of data collection in grounded theory, since it helps the researcher to record their thoughts during the research (Bluff, 2005).

Accordingly, this research project employed face-to-face semi-structured interviews which followed a topic guide rather than focus groups, in order to create an interaction between the researcher and the participants, giving flexibility and liberty to the indigenous mothers to share their ideas about health promotion programs and strategies and their views on child nutrition. On the other hand, during the field work I noticed that some mothers wanted to share their thoughts and feelings as a group. However, as child undernutrition is a sensitive issue that might cause distress in the participants, and also due to the fact that most of the mothers have low educational levels, which for them causes difficulties to read health promotion messages, one to one interviews were considered an appropriate option to give the mothers freedom to share their feelings and thoughts. Additionally, field notes were developed during the data collection process in order to enrich the data collected from the interviews. Due to the fact that the participants speak Spanish and I am a native Spanish speaker the interviews were carried out in Spanish. The interviews took place in the meeting house of the Cangahua community because the place was central to all the neighbourhoods and also it was a familiar place for the participants. I set up a room
before the interviews took place in order to have adequate sound and light to record. The interviews were digitally recorded and transcribed after the interview.

The fact that I had worked previously in the community and also the fact that the leader of the community, who was the gatekeeper, knew me before, made my entrance to work in the village acceptable. After his acceptance, I was put in contact with an indigenous woman who is the leader of health care in the community. I used to work with her before, so she was enthusiastic to see me again in the community. After our first meeting I arranged a meeting with the potential participants of the study. I gave a public speech in which I explained the context and aims of the study thoroughly, in order to minimize any felling of doubt among the leaders and the mothers. Additionally, I explained my personal reasons for why I chose my topic and my interest in the Cangahua village, which helped to make it an atmosphere of reciprocal trust.

Before the interviews took place the participants signed the consent form and I remained the participants of the aims of the study. After that I asked each mother to choose a pseudonym in order to keep her confidentiality during the research process. After that I set up the recording equipment in order to start the interview. I started asking socio-demographic information and then I started asking the questions relating to the topic guide. After each interview I wrote my perceptions of it in my field diary and I transcribed the interview in order to become familiar with the answers and also to start developing initial codes that helped me with the further analysis in order to reach saturation of the data.
As a result it was important to be reflective during the field research and further analysis of the data due to the fact that I had worked as a community nutritionist in the village previously and some of the mothers and the leader of the community knew me. Additionally, in order to decrease any preconceptions about the indigenous context and previous ideas about indigenous nutrition a field diary was a useful instrument to describe my thoughts during the process of data collection.

3.4. **Topic Guide**

The topic guide is an instrument for the semi-structured interviews in which the researcher develops questions some of which are followed by prompts in order to generate the process of discussion (Green and Thorogood, 2014).

The topic guide used in this study was developed in Spanish and was then translated into English by the researcher. The topic guide was developed following the aims of the study. Indeed, the first part of the topic guide started with questions about child nutrition in the Cangahua community. The questions were about the source of the family food and the food habits of the family and children under five years old. The prompt questions were used in topics related to food habits in children under five years old, healthy food and nutritional education. The second part of the topic guide tackles questions related to materials used in health promotion programs, focused on child undernutrition. The educational materials were selected from two health promotion programs delivered by the Ecuadorian government: Nutrition action towards zero undernutrition and ‘Chis-Paz’ food supplement. The questions were
related to the understanding of the images and messages of the materials and the perceptions of the indigenous mothers about the utility of leaflets for health promotion education. The topic guide applied in the study is shown in the appendix 2.

3.5. **Sampling**

Theoretical sampling is a strategy in grounded theory in which the researcher seeks adequate data in order to elaborate categories for developing a new theory (Charmaz, 2014). An important feature of theoretical sampling is the aim of reaching saturation, which is the moment in which the data does not reveal any new insights related to the theory (Silverman, 2011).

The participants used in this study were selected from different neighbourhoods of Cangahua community i.e. Centre, Pucara, Pambamarca, Pitana Bajo and Lote 2. The participants of the research consisted of 11 mothers who have children under five years old, are of indigenous ethnicity, and who were currently involved in health promotion programs developed by the Ecuadorian government and are able to read and write. However, even though all of the mothers can read and write, they had difficulties to read properly due to the low educational levels.

Reaching theoretical saturation was not possible due to the limited period of time for data collection. However, during the data collection and the first coding analysis most of the responses of the participants contributed to the development of new insights about child nutrition and health promotion programs. Additionally, the principles of
grounded theory were applied during sampling, data collection and further analysis of the data.

3.6. Recruitment

Before the recruitment of participants took place, the approval of the ethics committee of the school of health sciences and social care at Brunel University was granted (See appendix 3). After that, in order to access the participants I sent a letter to the community leader (see appendix 4) explaining the aims and outcomes of the study. After I received the approval of the leader I arranged a meeting with the leader of the health sector in the village, who was the gatekeeper, she allowed me to develop a meeting with the potential participants. After the meeting, the mothers who were interested in being part of the study were given the participant information sheet (See appendix 5) and they were able to think and discuss with their friends and family whether they wished to participate. After that if they were interested in being part of the research I gave them the consent form (See appendix 6) to complete and sign.

3.7. Data Analysis Method

In grounded theory the key approach to analyse the data is coding analysis, which helps the researcher to think analytically about the data gathered and identify the salient components of the data which contribute to developing a new theory (Charmaz, 2006). Indeed, the process of coding in grounded theory is a cyclical process which demands detailed revision of the data obtained in the interviews and field notes (Bryman, 2001). The analysis of the data of this study followed the principles of grounded theory methodology.
Firstly, I developed open coding analysis which is the line by line coding of the content of what the participants were saying during the interviews, taking into account reflexivity. At this point the field notes helped me to understand the data and its context. In fact, reflexivity was an important aspect during the first line coding. The importance of the first coding is that I became familiarised with the data and I started developing categories for further analysis.

Secondly, I generated fundamental coding which consists of a reflexive process in which the codes are interconnected to each other in order to reach a higher level of interpretation. In this part of the analysis I became aware of the association of what participants said and the main themes. Finally, during the analysis there was a constant movement backwards and forwards from the initial coding and the main themes of analysis in order to develop concepts that helped me to understand and explain the main categories of the research.

Due to the fact that the interviews of this research were carried out in Spanish, I had some concerns about the translation issues in order to analyse the data. In fact, there is a great debate about translation in cross-cultural studies in qualitative research. As a result, Wong and Pong (2010) argue that translation is a relevant process during the analysis of data because the social position of the translators influences the transformation of the data for further dissemination of results. Indeed, Jagosh and Boudreau (2009) suggest that two professional translators should develop the translation, one translator should translate and the other one recheck the translation.
with the original documents in order to reach validity in the process. However, Temple and Young (2004) argue that the role of the researcher as translator gives the opportunity to the researcher to be close to the data and increase their understanding and insights which are relevant for the analysis of the data. In support of this position Regmi et al. (2010) suggest that the researcher/translator should follow the following steps related to the translation of the results in qualitative research: transcribe the interviews in the original language and develop the first coding. After that create the categories and the main themes and finally translate into English. Accordingly, I decided to develop the coding analysis in Spanish and then translate them into English. In fact, the line by line coding and the interconnection of the codes in order to develop the main themes were developed in Spanish and then translated into English. I decided to conduct the translation due to the fact that my native language is Spanish and I have a proficiency in English. However, in order to increase the validity of the data analysis a professional bilingual translator Spanish-English and English-Spanish helped me with the final revision of the translation.

This chapter gave an overview of the research methodology and how the study was undertaken. The next chapter is about the presentation and analysis of the evidence found from the data collection with the indigenous mothers of the Cangahua community.
4. RESULTS

This chapter discusses the main findings from the semi-structured interviews carried out with 11 mothers in the Cangahua community, in Ecuador, South America. The mothers’ understandings of health promotion educational materials which aim to reduce child undernutrition are shown, and their relation to key cultural aspects regarding child nutrition in the community is considered. The length of the interviews varied between 15-45 minutes. Table 1 shows key socio-demographic characteristics of the study participants.
<table>
<thead>
<tr>
<th>Pseudonym</th>
<th>Age</th>
<th>Marital Status</th>
<th>Type of family</th>
<th>No. Children/No. under 5</th>
<th>Gender of the children</th>
<th>Age of the children under 5 years</th>
<th>Educational qualification</th>
<th>Paid job</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mari</td>
<td>32</td>
<td>Single</td>
<td>extended</td>
<td>2/1</td>
<td>Male</td>
<td>2 years</td>
<td>Incomplete primary school</td>
<td>Housekeeper</td>
</tr>
<tr>
<td>Rosa</td>
<td>28</td>
<td>Widow</td>
<td>extended</td>
<td>3/1</td>
<td>Male</td>
<td>3 years</td>
<td>Incomplete primary school</td>
<td>Cook</td>
</tr>
<tr>
<td>Leticia</td>
<td>22</td>
<td>Single</td>
<td>extended</td>
<td>1/2</td>
<td>Female; Male</td>
<td>2 years; 2 months</td>
<td>Complete secondary school</td>
<td>Auxiliary nursery teacher</td>
</tr>
<tr>
<td>Natali</td>
<td>30</td>
<td>Married</td>
<td>nuclear</td>
<td>4/1</td>
<td>Male</td>
<td>3 years</td>
<td>Incomplete secondary school</td>
<td>Auxiliary nursery teacher</td>
</tr>
<tr>
<td>Anahi</td>
<td>25</td>
<td>Single</td>
<td>extended</td>
<td>3/1</td>
<td>Female</td>
<td>3 years</td>
<td>Complete primary school</td>
<td>Farmer</td>
</tr>
<tr>
<td>Maria</td>
<td>20</td>
<td>Married</td>
<td>Nuclear</td>
<td>1</td>
<td>Male</td>
<td>6 months</td>
<td>Complete primary school</td>
<td>Housekeeper</td>
</tr>
<tr>
<td>Emely</td>
<td>18</td>
<td>Living with partner</td>
<td>extended</td>
<td>1</td>
<td>Female</td>
<td>5 months</td>
<td>Incomplete primary school</td>
<td>Farmer</td>
</tr>
<tr>
<td>Marta</td>
<td>28</td>
<td>Married</td>
<td>Nuclear</td>
<td>3/2</td>
<td>Female</td>
<td>4 years; 6 months</td>
<td>First grade of primary school</td>
<td>Farmer</td>
</tr>
<tr>
<td>Priscila</td>
<td>22</td>
<td>Married</td>
<td>nuclear</td>
<td>2</td>
<td>Female; male</td>
<td>3 years; 8 months</td>
<td>University level</td>
<td>Nursery teacher</td>
</tr>
<tr>
<td>Liliana</td>
<td>25</td>
<td>Married</td>
<td>nuclear</td>
<td>2/1</td>
<td>Male</td>
<td>4 years</td>
<td>Complete secondary school</td>
<td>Farmer</td>
</tr>
<tr>
<td>Maruja</td>
<td>24</td>
<td>Living with partner</td>
<td>Extended</td>
<td>2/1</td>
<td>Male</td>
<td>1 year</td>
<td>Complete secondary school</td>
<td>Farmer</td>
</tr>
</tbody>
</table>

Table 1. Socio-demographic characteristics of the participants
Table 1 shows that the age range of the participants was between 18 to 32 years old. 7 of 11 participants were married and 6 of 11 are living in extended\(^1\) families with their parents or parents in law, whilst the remaining 5 were living in nuclear\(^2\) families. 6 of the 11 mothers had low educational levels i.e. primary school; despite the fact that they finished the first and second year of primary school they do not know how to read properly. Interestingly, all of the participants had paid jobs and most worked as a farmers in nearby villages. Finally, 8 of the 11 mothers had 1 child under the age of five years old and the age range of the children under five years old was between 2 months and 4 years old. 8 of the 13 children were male. However, the majority of the participants have 3 or 4 children under the age of 12 years.

The analysis process resulted in two main categories and eleven themes which are shown in the table 2. Additionally, the field notes which are illustrated in Appendix 7 were included in the analysis of the results.

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\(^1\) According to the Oxford English dictionary (2014a) extended families are families which include other relatives apart from the nuclear family.

\(^2\) According to the Oxford English dictionary (2014b) a nuclear family consists of a couple and their child or children.
<table>
<thead>
<tr>
<th>A. Existing behaviour regarding child nutrition</th>
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<tbody>
<tr>
<td>• Family feeding practices</td>
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<tr>
<td>• Family food habits</td>
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<tr>
<td>• Source of the family food</td>
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<tr>
<td>• Perception of healthy food</td>
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<tr>
<td>• The role of grandmothers in child feeding practices</td>
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<tr>
<td>• The role of health care professionals in child nutrition</td>
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</tbody>
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<table>
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<tr>
<th>B. Study participants understanding of health promotion educational strategies focused on child undernutrition</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Understanding of ‘‘Nutrition actions towards zero undernutrition’ leaflet</td>
</tr>
<tr>
<td>• Understanding of Chis-Paz supplement leaflet</td>
</tr>
<tr>
<td>• Participants perceptions of purpose of Chis- Paz food supplement</td>
</tr>
<tr>
<td>• Perception of the use of the leaflets as a source of information of the two health promotion programs</td>
</tr>
<tr>
<td>• Participant suggestions for educational strategies focused on child nutrition</td>
</tr>
</tbody>
</table>

Table 2. Categories and themes of the study

4.1. Existing Behaviour Regarding Child Nutrition in Cangahua Community.

This section of the chapter discusses the families’ feeding practices, food habits, source of family food, perceptions about healthy food for children and the role of grandmothers and health care professionals in child nutrition.
• Family feeding practices

Five of the eleven participants of the study said that their food habits were the same for all members of the family in relation to quality and preparation.

[…] I always prepare the food for all my family (long pause) it doesn’t matter the hour I wake up every day and prepare the food. All my family eat the same [...] the two meals that we usually eat per day is the same for all of us. I give to my father, my husband my brothers and my children the same food. (Leticia: 22 years, 2 children under 5, aged 2 years and 2 months)

Interestingly, Leticia in her testimony implied that her baby of 2 months did not eat the same food as the rest of the family; however, she did not say about breastfeeding or special food for the baby. The data shows that all the participants saw the menu and food preparation as the responsibility of the women in the family. All the participants worked eight hours every day, so did not have enough time or money to prepare different food for their children under five years old.

However, one of the five mothers who gave the same food to all the members of the family said that she prepared different food for her child under five. However, this was only when the child was sick, otherwise the child ate the same family food.

Sometimes when my child is sick I prepare different food for him. For example, I give everything cooked. I give him soup when he is ill to relieve the pain. (Natali: 30 years, 1 child under 5, aged 3 years)

3 Most of the mothers made long stops (2-3 minutes) during the conversation. The conversation with some of the participants were not fluent.
On the other hand, six of the eleven mothers said that they give different food to their children under five years old

I prepare different food for my child. For him I buy and prepare a bit of meat every day. I try to give him eggs and milk because I don’t have resources\(^4\) to give that food to the others. I give to my baby a bit of chicken, eggs, milk, vegetables […] because he needs food to grow up intelligent and healthy. (Mari: 32 years 1 child under 5, aged 2 years old)

According to the observation and testimony of the participants they understand the importance of an adequate nutrition in the early life of a child. However, the lack of money is a serious issue among the participants and this is one of the principal causes that they do not have access to a better quality diet for their young children in comparison to other members of the family.

- **Family food habits**

The food habits of the eleven participants are based on the crops that they cultivate in their own farms. Usually the space for cultivating is near their houses and it is a small space in which their cultivate products according to the altitude and climate of the region.

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\(^4\) When the participant said resources, she is referring to money. In her testimony she said resources.
We eat what we produce here in the mountain. We eat potatoes, beans, onions, quinoa\(^5\), wheat, corn and barley. This is what we eat here. (Priscila: 22 years 2 children under 5, aged 3 years old and 8 months)

In line with this, the main meals that the eleven participants prepare are preparations based on the food that they cultivate. In fact, the consumption of meat, chicken, eggs, vegetables and fruit is not common in their diet.

I usually prepare soup with potatoes and barley. Also I like to prepare machica.\(^6\) I usually make hot beverages with quinoa. I also like to prepare food with morocho\(^7\) (smile) I prepare sweet morocho and morocho soup with potatoes. Once a week I tend to put in the soup a bit of meat or chicken in order to give flavour to the soup […] not always. (Maria: 20 years 1 child under five, aged 6 months)

On the other hand, one of the eleven mothers said that once a week she tried to prepare a different kind of food based on protein.

On Saturday or Sunday […] I like to prepare guinea pig with potato (smile) my husband helps me killing the animal. (Liliana: 25 years, 1 child under 5, aged 4 years old).

Interestingly, eight of the eleven mothers mentioned that the feeding practices of their children are based on the food that they usually eat in the nursery centre.

\(^5\)Quinoa is a plant which is rich in protein and widely cultivated in Los Andes (The Oxford dictionary, 2014c)

\(^6\) Machica is a preparation of toasted barley flour mixed with sugar and cinnamon. It is usually prepared to make hot beverages in the Andes (The Oxford dictionary, 2014d)

\(^7\) Morocho is a white grain similar to corn which is prepared in soup and hot sweet beverages. It is common in the Andes of Ecuador (Unigarro, 2010)
In the morning I usually give my child an egg with a hot beverage of sweet morocho and tortillas\(^8\) of wheat. Then he goes to the nursery centre. I know that they give to my baby healthy food. He eat there four meals, but in the night I also give him a soup. (Rosa: 28 years, 1 child under 5, aged 3 years old).

- **Source of the family food**

The eleven mothers said that the food that they usually eat come from the crops that they cultivate in their houses.

We always eat organic\(^9\) food. Organic food is the food that we cultivate here in the mountain. (Maria)

However, nowadays due to the fact that most of the participants work near the city they acquired products that are common in the diet of people who live there. Eight of the eleven mothers buy products in stores which they call “food from the city”.

Even though we eat what we cultivate here in my house, sometimes […] I think that once per month I buy food from the city such as noodles, bread and rice. Not always I buy that food (long pause) I buy that food from the city when I have money or when the family has a lot of hunger. (Liliana)

It is important to mention that the participants usually buy the food in Cayambe which is a city near Canghua and surprisingly the prices of the food in the supermarkets or

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\(^8\) Tortilla is a plain and circular food made from wheat or corn flour (The Oxford dictionary, 2014e).  
\(^9\) Organic food is the one that is cultivated without the use of artificial chemicals or pesticides.
small stores are higher than in Quito, the capital of the country, as I discovered when I visited a supermarket during my time in Cangahua:

In the afternoon I wanted to buy milk and cookies but in Cangahua I couldn’t find the cookies that I wanted, so I decided to take the bus and travelled to Cayambe. When I arrived at Cayambe I found a supermarket and I realised that the price of the cookies and milk were the double of Quito. I made comment to the owner of the supermarket about the price of the food and he did not reply to me. Also, I saw that the fruit, vegetables and meat are more expensive than Quito maybe for that reason the participants do not have much variety in their diet. (Field notes, Canagahua, 28 June 2014).

In line with my own observation of the supermarket, five of the eleven participants said that when they buy the food of the city i.e. Cangahua they usually buy a large quantity of kilograms of food because in this way the food is cheaper than buying less. Also, they share the expenses and the food with each other.

When I go to Cayambe to buy food I go with my sister and her mother in law and my cousins, so we buy a lot of rice and we share the money and the food (long silence) it is better in this way because I save money because the food is expensive. (Emely: 18 years 1 child under 5, aged 5 months)
• Perception of healthy food

Ten of the eleven mothers said that healthy food are the one that help their child to grow up healthy; interestingly by healthy food they all meant the food that they cultivated in the mountains

Healthy food is the food that keep my baby strong and without illnesses (long pause) it is the food that we cultivate here. For example, potatoes, morocho, quinoa, wheat. Also, I know that healthy food is eggs, vegetables and fruit. (Priscila)

Even though fruit, vegetables and eggs are not common foods in the diet of the participants, Priscila said that these kinds of foods are also healthy which are important to prevent illnesses in her children.

On the other hand, one mother said that unhealthy food is the food that causes illnesses. In fact, she made a relationship between unhealthy food and sugar which cause cavities.

Unhealthy food is lollipop, ice cream and popcorn […] it causes illnesses and caries. (Emely)

Most of the children in Changhua attend every day a public nursery day care centre created by the Ecuadorian government called the ‘Good living child care centre’ (CIBV). In this centre work mothers who are training to be nursery teachers. The children spend more than five hours per day in the centre and they eat breakfast, lunch and dinner there. The menu of the CIBV is developed by the mothers and the food is
provided by the government. When I was at the day care centre conducting interviews in June 2014, I was invited to eat there:

On Friday, after finishing an interview with one mother in the nursery day care centre, I was invited to eat with the teachers and the children. I decided to say yes and helped the teachers to serve the plates for the children. The first plate was soup with potato and quinoa and the second plate was rice, salad and beans and pineapple juice. However, I saw two plates with egg. I asked them for whom are the plates with egg and they replied that for the gatekeeper and me. I think that they did that because they saw me as a guest? (Field notes, Cangahua, 28 June 2014)

Thus, the children were not given eggs that day although eggs are a great source of protein and sometimes an egg is the only source of protein that the participants have access to, due to the high prices of meat.

- The role of grandmothers in child feeding practices

All eleven participants said that the person who taught them about child nutrition, the portions, quality and quantity of food to give to their children were their mothers.

The person who taught me how to prepare the food for my child was my mother. She knows a lot about the food for babies. She has a lot of children and grandchildren. My mother always helps me with the instructions and recipes. (Marta:28 years 2 children under five, aged 4 years and 6 months)
Six of eleven participants live in extended families and the opinion and advice of older members of the family such as their mother or mother in law is valuable and important.

My mother and my mother in law know about food and preparations, especially for children […] they know about healthy food. (Maruja:24 years, 1 child under five, aged 1 year).

Additionally, the participants said that most of the grandmothers took care of their grandchildren after they returned from the nursery day care.

I usually leave my job at five in the afternoon, so my mother picks up my child from the nursery day care centre. My child enjoys her company. (Anahi:25 years 1 child under five, aged 3 years)

After finishing the interviews in a neighbourhood called Pucara on 28 June, 2014, which is situated 15 minutes away -from the centre of Cangahua, I noticed that the majority of the children were picked up from the nursery day care centre by their grandmothers.

Before returning to the centre of Changhua I observed that the person who picked the children up from the nursery day care centre were normally their grandmother. Interestingly, the majority of them do not speak Spanish properly. They speak Quichua their own native language (Field notes, Cangahua, 28 June, 2014).
The role of health care professionals in child nutrition

Cangahua community has one medical centre which is located in the centre of the town. Two nurses and three doctors work there between 8 am to 4 pm, Monday to Friday. Every day the medical centre is crowded. In order to gain access to the doctor or nurse, the people from the community have to take a turn and arrive on time for their appointment. The people who are in charge of giving nutritional education to the mothers are the nurses and the paediatrician.

When my baby was born the doctor tell me about breast feeding […] the nurse here explains me about the correct nutrition to my child and now she also gave me the Chis Paz. (Anahi)

Eight of the eleven mothers mentioned that they would like to receive information about the quantity of food that a child needs to eat and also they want to know more about how to prepare healthy food.

Once I went to the doctor and the doctor told me that my child had a low weight (long pause) the doctor told me that I do not give healthy food to my child or I do not give enough food to him […] but I give food to my child always[…] sometimes, I don’t have enough money to buy a lot of food but I give to my child the food that I can buy with the money that I have (long pause) But I want that the doctor give me information of healthy preparations to give to my baby because he just told me that my baby is short and low weight […] I want my child to be healthy. (Mari)
4.2. Study participants understanding of health promotion educational strategies focused on child undernutrition.

This section of the chapter discusses the mothers understanding and implementation of two health promotion educational leaflets from two programs delivered by the Ecuadorian government: “Nutrition actions towards zero undernutrition” and “Chis-Paz” food supplement. Also, this section discusses the participants’ suggestions for educational strategies.

This part of the interview was developed after the questions about food behaviours in which the participants did not have to read, they were asked to tell their experiences about their diet and nutrition. However, in this part of the interview about health promotion programs. I asked them to read messages about child nutrition and the mothers felt shy and nervous.

During the first part of the interview even though the mothers were not fluent in the conversation and they made long pauses, they felt confident talking about their food habits. However, as soon as I asked the mothers about health promotion programs they asked me if I am working for the government, I was surprised and I replied no. After that when I asked them to read the messages they became very nervous and the volume of their voices decreased and the pauses between sentences became longer. I noticed that they felt uncomfortable when I asked them to read or to understand written messages. (Field notes, Cangahua, 1 July 2014)

- Understanding of “Nutrition actions towards zero undernutrition” leaflet
The health promotion program leaflet, “Nutrition actions toward zero undernutrition” has two components. It is evident that the image in the centre of the leaflet was taken in the highlands of the country because the mother is wearing traditional clothing from the region and the house behind the girl is a traditional house from the mountains.

The leaflet has three written messages: the first, the importance of giving healthy food to a child in the first years of life in order to help the child to grow up strong and intelligent. The second, the importance of complementary food after 6 months and the third about extended breastfeeding until the age of 2.
○ Understanding of the image.

The eleven mothers all saw the image as illustrating the importance of including healthy food such as fruit in their child’s diet.

The mother is giving an apple to her baby (long pause) it is important to give healthy food […] I like the image because it is in the mountains.

(Rosa)

Interestingly, all the participants said the importance of being near the child while he or she is eating.

The mother is paying attention to her child because she is watching her baby while the baby is eating. Also, the baby girl is eating fruit that is healthy. (Natali)

The girl is eating and the mother is watching her child […] they are enjoying time together because the girl is happy. (Emely)

Additionally, three mothers commented about the colours and the environment in which the picture was taken.

I like the colours of the photo because it shows me that it is in the mountain. Also the girl looks healthy […] she is eating an apple but we can’t find apples or fruits here in Cangahua. (Mari)

○ Understanding of the messages

Seven of the eleven mothers had difficulties to read and understand the messages due to the fact that they had low educational levels.
Sorry but I can’t read properly (smile) I don’t understand the meaning of the phrases. Can we read together? […] (Marta).

Six of the eleven participants said that the first message is about the importance of giving food to the child in order to grow up healthy and intelligent.

The first food that I give to my child helps him to grow up healthy and intelligent (long pause) also the child has to eat fruit because it is healthy and helps the development of my child. (Mari)

Five of eleven mothers understood that the second message was about complementary food. Additionally, they mentioned the age of six months as an important age to start giving food to their child.

When the baby is six months old we have to continue breastfeeding but also because the baby has a tiny stomach we have to give him a small portion of food such as vegetables and hot beverages. (Rosa)

Nine of the eleven mothers said that the third message demonstrates the importance of extended breastfeeding in order for the baby to have an adequate immune system. However, the participants said that they had stopped breastfeeding around the age of 1 year 6 months approximately, due to the fact that the child starts to have teeth and also because the mothers had to work.

The phrase in the leaflet said to me to continue breastfeeding my child until two years (smile) it is not possible […] I gave to my child until one year and four months because he started to have teeth and it hurts
me a lot and also my mother took care of him because I had to work again. (Priscila)

- **Understanding of Chis-Paz supplement leaflet**

  **Illustration 2. Chis Paz Health Promotion Program (food supplement)**

  ![Illustration of Chis Paz Health Promotion Program](http://www.inclusion.gob.ec/mies-y-su-proyecto-allimentarionatricional-integral-promueve-la-alimentacion-saludable/)


  The leaflet of Chis-Paz food supplement shows the process of how to include Chis-Paz in a child’s meal. The leaflet indicates the six steps of how to prepare Chis-Paz through-the use of cartoon images and written messages. The leaflet was distributed in all the regions of the country without any change for indigenous communities.
None of the eleven participants understood the written messages and images of Chis-Paz leaflet.

Honesty, I don’t understand too much about the leaflet (long silence) but I understand that I have to wash my hands and I have to give a lot of food to my baby (long silence) I don’t understand. (Emely)

For me it is not clear. These photos show me that I have to wash my hands before preparing the food and after and also I have to give food to my baby […] I don’t understand if I have to give to him the big plate or the tiny plate. Sorry, I can’t understand it properly. (Mari)

This paper says that I have to wash my hands always and I have to prepare healthy food […] I have to give few food to my baby (long silence) I don’t have to give the big plate because he will have stomach-ache. I can’t understand all. (Rosa)

Thus, although the intention of the images for Chis-Paz was to explain to the mothers how to prepare the food supplement, what the mothers understood were that the images related to washing their hands and feeding the children, which are not related to the purpose of the leaflet. They also became confused by the images, particularly those of 4 and 5 which showed different sizes of dishes, which the participants called “big plate” and “tiny plate.”
Participants perception of Chis-Paz food supplement

The perceptions about the food supplement were different between the eleven participants. Four of the eleven participants did not know the purpose of Chis-Paz and why the government gave the supplement to their children.

I don’t know why I have to give to my children Chis-Paz the doctor gave me it and I just give to my child (long silence) one of my neighbour told me that it helps to clean the stomach of the baby. (Maruja)

I don’t know the reason of why the government give Chis-Paz to us (smile) but I give to my children because the nurse of the medical centre told me that it is good for my baby’s health. (Anahi)

Seven of the eleven participants knew about the food supplement Chis-Paz.

Chis-Paz is good for the health of my baby (smile) it helps him to grow and increase his weight and also to be healthy. (Natali)

I think that Chis-Paz helps my child the one that has 3 years old to learn in the nursery school and grow healthy. At the beginning Chis-Paz caused diarrhea to my child and I wanted to stop giving it (long silence) then I went to the doctor and he told me that is normal so I feel relief and now my child is healthy. (Priscila)

I think that the government give Chis-Paz to our babies because they are skinny and Chis-Paz improves the health of my baby. (Leticia)
Perception of the utility of leaflets as a source of information from two health promotion programs

In Ecuador, the majority of health promotion programs focused on nutrition use leaflets as the main source of information. Indeed, the leaflets from the Chis-Paz and Nutrition actions towards zero undernutrition contains educational information related to child nutrition.

Eight of the eleven participants from the study said that leaflets as a source of information are not useful due to the fact that they do not know how to read properly because of their low level of education and also they are not familiar with some vocabulary in the text.

I want to know how my baby girl has to eat [...] sometimes I don’t understand the words in the leaflet that the nurse gives me. (Emely)

 [...] when I see the image of the leaflet I understand that I have to give fruit to my children but when I read sometimes I don’t understand one word and then I stop reading the leaflet (smile) honestly I don’t like to read. (Maria)

Sometimes I understand better Quechua than Spanish (smile) and some words I am not familiar with so I don’t like to read the leaflets. (Marta)

However two of the eleven mothers mentioned that the leaflets delivered by the health promotion programs helped them to know about how to feed their children.
I think that the leaflets are useful I like to see the images and the colours of them (smile) I think that I can understand the information about nutrition with the leaflets. (Leticia)

- Participant suggestions for educational strategies focused on child nutrition

In the Cangahua community most activities are carried out in groups, especially the ones that involve education. As a result, at most meetings all the family members, especially the women are present. The eleven participants mentioned that they prefer oral education and workshops in which they can develop practical activities in order to learn about child nutrition than other methods of education. Also the participants mentioned the importance of having the opportunity to talk between themselves in order to increase their knowledge about nutrition.

I think that the messages and photos of the leaflets don’t give me enough information about how to give food to my baby […] most of the time I don’t understand or I don’t pay attention about the messages. Most of us we don’t know how to read well […] as you see for me it takes too much time to understand the messages that you showed me before […] I want to be part of workshops it will be nice, I mean I can share my ideas with the group and also I will learn better (smile) I understand more when someone talks to me. (Priscila)

I would like to receive a workshop in order to learn about how to give food to my child (smile) when someone talks to me and explains me the things it´s easy for me to understand. (Maria)

For me it’s not enough to read the leaflets in order to know about Chis-Paz […] I would like to be part of workshops (smile) we only received leaflets, but they are not enough to learn things (silence) the
information of the leaflets is for people from the cities […] here in the mountains we prefer to have education in workshops. (Natali)

I noticed that immediately after I stop asking about the images and the written messages of the leaflets all the participants were relieved and when I asked them about suggestions to improve the educational strategies they were very enthusiastic to talk to me. One participant Priscila ask me if she could call her friends Liliana and Maruja to answer the question together and they asked me if I could give them a workshop about child nutrition. (Field notes, Cangahua, 30 June 2014).

This chapter shows the results of the study carried out in the Cagahua community. The main findings of the study were:

1. Six of the 11 participants gave more protein, fruit and vegetables to their children under five years old than to the rest of the family. The other 5 participants did not give their young children different food.

2. The family food is predominately from their own crops: potatoes, beans, onion, quinoa wheat, corn and barley. The mothers usually prepare soup and sweet and salty hot drinks.

3. However, due to the fact that the mothers work near the city they are used to buying noodles and rice in Cayambe, a city near Cangahua, yet this food from the city as they call it, is prepared once or twice per month.
4. Ten participants said that healthy food is the one that they produce and it helps their child to grow up healthy and intelligent.

5. The grandmother plays a prominent role in the child feeding practices due to the fact that the mother or the mother in law of the participant usually teach them about dishes to feed their grandchildren.

6. Eight of the 11 mothers said that the doctor or nurse of the community explained to them about child nutrition but that the information was not enough.

- **Health promotion programs understanding:**

7. The majority of the participants did not understand the messages of both leaflets, especially the leaflet about Chis-Paz. However, the images from the first leaflet were better understood due to the fact that the participants made reference to the fact that the image is in the highlands.

8. Four participants do not know the purpose of the Chis-Paz supplement

9. All the 11 participants of the study said that they prefer oral education through workshops rather than written education through leaflets.
5. DISCUSSION

This chapter discusses and evaluates how the findings of this study relate to published literature in the field. In particular, this chapter focuses on findings related to health promotional leaflets. This chapter also provides suggestions for future research on the topic of health promotion and public health, as a result of the findings of this study and finally it considers the strengths and limitations of the research.

5.1. Discussion of the Findings

5.1.1. Existing Behaviours Regarding Child Nutrition in the Cangahua Community

- Indigenous family food: feeding practices, food habits, source of food and perception of healthy food.

Beliefs, thoughts and values are key cultural aspects regarding health in the indigenous communities of Andean countries (Pan American Health Organization, 2008a). In line with this, the indigenous populations of Latin America have developed their own knowledge, practices and behaviours related to nutritional process (Montenegro and Stephens, 2006). Accordingly, the feeding practices of indigenous families are based on their culture, knowledge, environment and economic resources (Pan American Health Organization, 2010).
In the indigenous population of the highlands of Ecuador the role of women in the production, selection and preparation of food is prominent; in fact, women are responsible for the feeding practices of the family (Schoenfield and Joarbe, 2006). This study highlights this particular in the case of one of the participants who said that she has to wake up early every day in the morning to prepare the food for her extended family before working eight hours as an auxiliary nursery teacher in a nursery day care centre in the centre of Cangahua.

Intra-household food distribution is a factor that denotes food security and welfare of family members (Pinstrup-Andersen, 2009). In line with this, Engle and Nieves (1993); and Messer (1997) argue that in some cultures there is a difference between the quality and quantity of the diet in relation to the gender and age amongst members of a family. In the same vein of research, one study carried out by Larrea and Freire (2002) argues that a key factor regarding the feeding practices and nutritional outcomes in indigenous communities is how food is distributed between the members of a family. The results of the present study partly support this, since participants gave different food in terms of quality to their children. For instance, one participant said that she prepares a small amount of meat every day and also tries to give eggs and milk to her child, who is under five years old, although she would like to be able to give the same quality of food to the other family members, she could not because of economic issues. However, the findings also contradict this because some mothers provided the same food to all the family members. For example, one participant said that the two meals that she and her family usually eat are the same for all her family members.
Food habits of a population are determined by several factors related to culture, social environment, tradition and nutritional education of the communities (Cox and Anderson, 2004). In support of this, Corr (2002) argues that in the indigenous communities of the Ecuadorian Andes, food has an important meaning in relation to ones status in society due to the fact that it is an important cultural symbol. In line with this, the food habits of the indigenous communities in the highlands of Ecuador differs from other ethnicities and regions of the country (Larrea and Freire, 2002). In rural households in the highlands of Ecuador the consumption of protein, fruit and vegetables are rare, whilst the consumption of carbohydrates is high because of the crops produced in the highlands of the Andes (Freire et al., 2013). The results of this study confirms that all the participants’ diets are based on the crops that they cultivate in their houses. In fact, one participant mentions that the family food habits are based on the food from the mountains and that she rarely bought food from the city (meat, chicken, fruit and refined food products). In line with this, in indigenous communities of Ecuador the preparation of meals is a complex activity which involves the selection of food, flavours, textures, and collective memories (Unigarro, 2010). Accordingly, one participant of the study said that every day she prepares soup in which potatoes and another carbohydrate such as quinoa, barley or morocho are the main ingredients and also she said that occasionally she puts in some chicken, to give flavour to the soup. However, one mother said that on weekends she usually prepares a special meal with guinea pig and potatoes and all this process is an important moment for the family in terms of status, nutrition and their overall welfare.
The sources of food for indigenous communities are based on the local crops, traditions and culture (Kuhnlein and Receveur, 1996). Accordingly, as can be seen in the results of this study the principal source of food for the participant’s families is based on their crops which are potatoes, quinoa, wheat, morocho, onions and corn. However, as one participant highlights, when she has money, she tries to buy noodles, bread and rice, at least once per month. This supports the position put forward by Evans et al. (2001) i.e. that globalization and the rapid migration within a country from rural areas to big cities is now a prominent factor that has changed the food choices of indigenous communities from local crops to refined products such as bread and noodles. This is true for the majority of participants of this study, although they do not migrate, they work in nearby cities such as Cayambe in which they can buy refined food products. However, the low socioeconomic status of the indigenous population still causes a lack of food variety due to the fact that fruit and protein food items are more expensive than refined products such as noodles. (Riley and McCarthy, 2007). In support of this position, one participant said that when she buys food items in the city it tends to be things such as rice and noodles and seldom fruit and protein, she also tends to share the expenses and the food with other families in order to save money.

The understanding of healthy food differs worldwide; however, indigenous populations perceive healthy food as natural products that can be obtained from their environment without any additives (Kuhnlein et al., 2006). In support of this position the participants in this study said that healthy food is the food that they cultivate in their houses. In addition, the indigenous populations believe that food has an
important meaning and value related to health and wellbeing, Damman et al. (2008). Interestingly, one participant of the present study said that healthy food is food that prevents illnesses.

- **Indigenous child nutrition: The role of the grandmother and health care professionals.**

According to the culture of indigenous communities the hierarchy of the communities depends on age and gender; in fact, the grandmother plays a prominent role within indigenous communities (Pan American Health Organization, 2010). One study carried out in the indigenous communities of Malawi suggests that grandmothers have a great deal of influence in child feeding practices due to the fact that the grandmother gives the nutritional information regarding breast feeding and complementary food to her daughter or daughter in law (Bezner-Kerr et al., 2008). The results of this study support this position, as can be seen by the fact that all of the participants said that their mothers taught them how to feed their babies. Interestingly, one participant said that her mother-in-law guided her with regards to the recipes and preparation of the dishes for her extended family.

One of the few studies carried out in South America regarding indigenous peoples in 2012 by Jones et al. in Bolivia with 44 indigenous communities in which the majority of the mothers reported that they did not have both family support from their mothers or mother in law and governmental day care centres to take care of their children whilst they were working, which was attributed as a contributing factor that caused nutritional deficits in the indigenous children. On the other hand, one study carried out
in 3 indigenous villages of the Salasacas community in the highlands of Ecuador by Stansbury et al. (2008) suggests that the majority of the children of the study went to nursery day care centres provided by the government and after that their older brothers took care of their younger siblings, and this was seen as a possible cause of growth failure in the infants. However, the results of the present study demonstrates that all the mothers have the support of a nursery day care centre, which is called CIBV (children day care centre of the wellbeing) whilst they are working and after the nursery day care centre the grandmother of the children took care of them. However, it is possible that in this study the grandmothers continued to feed their grandchildren after the nursery centre in which the children eat three meals.

The importance of a comprehensive and culturally appropriate health care system for indigenous communities, which takes into account the traditional medicine and practices related to health and illness is a well-researched area. (Stephens et al., 2006). One study carried out by Darwin with indigenous patients suggests that there were communication difficulties between the indigenous population and health care professionals even though the health care professionals had an interpreter during the diagnosis, treatment and prevention (Cass et al., 2002). Similarly, in the present study one mother said that the paediatrician had told her that her baby had a low weight and height because she did not feed him properly, without any further explanation or suggestion and the mother replied that she fed him every day. In fact, this situation highlights the lack of appropriate communication between the health care professionals and the indigenous participants regarding child nutrition. In addition, although all the mothers said that the doctor had told them about the importance of
breast feeding and child nutrition, they wanted to receive more information relating to appropriate meals for children and child feeding practices.

5.1.2. **Understanding of Health Promotion Educational Strategies Focused on Child Undernutrition (Nutrition towards Zero undernutrition and Chis-Paz food supplement Programs) and Indigenous Mothers’ Suggestions for Health Educational Strategies**

Health education is an important activity of health promotion, which aims to empower people to make their own choices in order to reach their wellbeing (Naidoo and Wills, 2009). In line with this, health promotion education strategies in indigenous population have to take into account the traditional medicines and various forms of communication within the populations of the communities. As a result, it has been suggested that a multicultural approach should be developed when producing educational materials for indigenous populations (Kirmayer et al., 2003; Wallerstein et al., 2006). The majority of studies related to the understanding of educational leaflets in indigenous populations are related to health care treatments rather than health promotion, which might be an issue to compare them with the present study duet to the fact that the purpose and content of leaflets of health promotion differs from leaflets designed for treatment. As a result one study carried out by Weinman (1990) suggests that written messages are a prominent strategy to educate people regarding health care due to the fact that written messages help people to recall the information which results in an adherence to the treatment provided by health professionals. However, people who are illiterate or with low educational levels do not have a proper understanding of written educational materials due to the fact that these materials are
not properly designed for these people; indeed, one study carried out by Griffin et al. (2003) showed that illiterate people or people with low educational levels tend to feel embarrassed or nervous to interact with health professionals, which might result in negative health outcomes.

The majority of the participants of this study did not finish primary education. As a result, one indigenous mother said that she cannot read properly and she asked me to read with her the messages of the leaflets related to child nutrition. Another participant also said that the vocabulary of the messages was difficult to understand. Another participant also said that she did not like reading, she prefers verbal communication in order to learn how to feed her baby. Additionally, the majority of the participants understood with some difficulty the basis of the leaflet regarding ‘Nutrition towards zero undernutrition’. However, none of the participants understood the written messages in the leaflet relating to the food supplement Chis-Paz. As one participant said, for her the information provided in the leaflet is not clear and she cannot understand. Thus, the information from the leaflets was confusing for all of the eleven mothers that participated in this study.

Illustrations are codes that each society interprets according to their culture, experiences and beliefs (Finan, 2002). As a result, illustrations are important tools to improve the comprehension of written messages; in fact, cartoons and photos are widely used in health promotion educational materials (Griffin et al., 2003). The photos used in the leaflet for the ‘Nutrition toward zero undernutrition’ program were easy to understand for the participants. As can be seen by the fact that one mother
instantly identified the image as having been taken in the highlands of Ecuador because of the landscape and the clothes used by the woman. Another participant also said that she liked the colours of the picture because it reminded her of the mountains. Another participant also said that she liked the photo because the woman in the picture is enjoying the time with her daughter. On the other hand, Kitching (1990) argues that sometimes illustrations are not an adequate source of information, especially when the image is not related to the peoples’ reality or when the image does relate to the text. In the present study none of the mothers understood the images from the Chis-Paz leaflet and the relationship between the images and the text, which tried to indicate how to prepare the food supplement. The majority of the mothers concentrated their attention on the first and the last illustration of the Chis-Paz leaflet. As one participant mentioned she thought that the leaflet was to teach her the importance of washing her hands before feeding her baby, whilst the leaflet actually tries to teach the steps for preparing the Chis-Paz supplement. Additionally, the leaflet shows two different sizes of plates. As a result, all the mothers were confused because they did not understand whether to give a lot or a small amount of food to their children. Thus, photos are more likely to be more successful than cartoons as a tool to educate participants in similar projects.

In the indigenous cultural context, the majority of activities related to communication regarding health are developed in groups of extended families, neighbours and close friends in which women have a prominent role to preserve the knowledge related to the process of health and illness throughout time via verbal communication (Pan American health organization, 2010). Interestingly, in support of this position, in the
present study one mother suggested conducting the interview in a group with her two friends. Thus highlighting the importance for indigenous women to develop activities together as a group.

A multicultural approach, taking into account the languages of indigenous peoples, in which verbal communication is the key tool, might be a prominent approach to enhance health education in indigenous peoples (Lopez and Sichira, 2008). In fact, one study carried out by Rowley et al. (2000) with indigenous peoples demonstrates that workshops and verbal education helped to improve the health knowledge and health outcomes in relation to diabetes in adults. The results from the present study show that all the participants suggested that they prefer verbal education such as workshops rather than written education such as leaflets, in order to learn about child nutrition. Indeed, one mother suggested that she wanted to attend workshops about nutrition and learn together with other mothers. Another participant also said that she learned better when the health care professional explained to her with examples and talked to her. Finally, another participant also said that when the doctor informed her about the nutritional status of her child, which is chronic malnutrition, she wanted to obtain solutions and guidance via verbal messages rather than written messages. Thus, verbal education delivered via workshops might be a more successful strategy to educate the indigenous mothers of the Cangahua community regarding topics related to child undernutrition.
5.2. Implication of the Findings in Health Promotion and Public Health

The results from the present study generated insights into how a group of indigenous mothers understood two leaflets which were used as educational materials for two different programs provided by the Ecuadorian government to reduce undernutrition in children from the indigenous communities in the country.

Accordingly, the implications of this study in health promotion and public health are important in terms of recommendations for similar future campaigns. Firstly, as the majority of participants said that the phrases and words used in the leaflets are not appropriate for people in the mountainous regions due to issues with illiteracy and the content of messages. The participants emphasized the importance of verbal communication in order to learn topics related to child nutrition. They said that they learned better via listening rather than reading. Consequently, workshop and group activities are more appropriate educational methods that take into account the cultural context of indigenous peoples in which the main source of communication is verbal and this should be a principal factor when formulating health promotion and public health programs and supporting educational strategies, in order to make them comprehensible and well received within the communities.

Health promotion practitioners should have some understanding about the context, culture and the roles of indigenous people within the community in order to appropriately educate the population. The health promotion professionals should develop educational activities which are related to the daily life of indigenous women, who are responsible for the production, selection and preparation of food in
indigenous communities of Ecuador. Even though all the indigenous women that took part in this study work as housekeepers, farmers or auxiliary nursery caretakers they also take care of their crops after or before work. As a result, the most appropriate time for educational activities should be as part of their daily activities tending to their land, a space in which they can share their thoughts and learn with the facilitator, neighbours and relatives through verbal communication and practical examples. Similarly, the health promotion facilitators should give the opportunity to the participants to practice and familiarize themselves with the new concepts and ideas about child nutrition, helping to generate satisfaction in the participants and consequently the impact of the programs will hopefully improve.

In addition, policy makers have to create and plan health promotion programs taking into account the fact that Ecuador is a multicultural country with different ethnicities and languages. As a result, the content of the leaflets, specifically the illustrations and messages should be familiar across the differing contexts of the country. As the participants of the study said, the image of the ‘Nutrition toward Zero undernutrition’ leaflet was familiar to them because of the clothes used by the woman and the landscape, which reminded them of their community, which in turn helped them to understand the purpose of the leaflet. On the other hand, the images used for the Chis-Paz food supplement, which were cartoons, were not familiar to the participants, which caused confusion when trying to understand the aim of the leaflet. In addition, the policy makers have to take into account the vocabulary used in the messages, in order to have a positive impact on the population. Consequently, the terminology used should be familiar, and vary depending on the context and the level of education of the
population. Also, the majority of the target population for the health promotion and social programs focused on child undernutrition in Ecuador are people with low socioeconomic status and with low educational levels; consequently, the written messages should be concise in order to improve comprehension and gain the attention of the population. Finally, the health promotion materials should be developed in Spanish and Quechua (the language native to the Ecuadorian Indigenous community) in order to reduce inequalities and promote inclusion within the population.

5.3. Suggestions for Further Research Regarding the Findings

This is one of the first studies to explore mother’s understanding of health promotion educational materials focused on child undernutrition in the Cangahua community in the highlands of Ecuador; as a result, it is important to develop additional research which could help to improve health promotion interventions in these populations.

Further areas of research might include studying how educational materials developed in other indigenous communities of Ecuador have been received, to know if the results of the present study could be transferable to other communities not only in the Highlands region but also in the Amazon region. Further research should also be developed in order to explore more in depth to what extent the care taker of children, either the grandmother, older siblings or CIBV (governmental nursery day care centre) workers, has an impact on the nutritional status of indigenous children in Ecuador, in order to improve future health promotion educational interventions. Finally, another possible future area of research could be developed to compare the understanding of health promotion educational materials in both Quechua and Spanish in order to find
out if one of the issues of understanding the materials is related to the language used or the content of the messages.

5.4. Critique of the Study

The critique of the present study was developed according to Spencer et al’s quality framework for qualitative research (2003) and also based on questions developed by the Critical Appraisal Skill Program CASP-UK (2013).

5.4.1. Strengths of the study

The aim of the present study was to explore the understanding of indigenous mothers about health promotion educational materials in the Cangahua community in Ecuador. As a result the methodology used for this study was qualitative due to the fact that it allows the participants to share their thoughts, beliefs and experiences regarding child nutrition and health promotion programs. Additionally, due to the fact that this study is one of the first that explores the indigenous mothers’ understanding of health promotion educational materials focused on child undernutrition in the highlands of Ecuador, grounded theory principles was the chosen method to develop the research because it allows the researcher to explore new areas of knowledge in health promotion, in order to develop and improve policy practices..

Furthermore, the questions used in the topic guide were developed based on the aims of the research and with language appropriate to the context of
the indigenous peoples; additionally, the images from the health promotion programs selected to explore the understandings of the indigenous mothers were chosen from two current and prominent programs delivered by the Ecuadorian government, focused on the reduction of child undernutrition in Ecuador.

During the first analysis of the interviews open coding was developed after each interview finished, in order to help me to get familiar with the data and to understand the key points of the research for further analysis. Finally, the fact that I lived in the community for three weeks and I kept a field diary helped me to keep my personal reflections about the research process, not only in relation to the interviews but also in relation to observations about the community.

5.4.2. Limitations of the study

This research project employed face to face semi structured interviews which followed a topic guide rather than focus groups, in order to give the flexibility and liberty to the indigenous mothers to share their ideas about health promotion programs and their views on child nutrition. However, during the data collection I noticed that one mother asked if she and her friends could participate as a group, this event helped me to reflect on whether focus groups might be a more appropriate method for further research into attitudes and understanding within indigenous communities.
In one of the questions relating to the perception and practices of using healthy food and the role of the primary caretaker of children, the mothers highlighted the prominent role of the nursery day care centre staff and the grandmother in terms of being responsible for the nutrition of their children. However, a further question relating to whether the grandmothers continued to feed the grandchild/ren after the nursery day care centre should have been developed due to the fact that the participants said that the grandmothers often take care of their children after the nursery day care centre closes.

Finally, the data collection and analysis of the results were conducted in Spanish and then translated into English. However, even though the translations were revised by a professional translator Spanish – English and English- Spanish in order to verify that the context and content of the data was correct, the translation aspect is an issue in cross-cultural qualitative studies because of the use of specific expressions proper to the cultural context of the participants.

This chapter gives an overview of how the findings from this research project are related to publish literature on the topic of how indigenous mothers of the Cangahua community understand health promotion educational materials focused on child undernutrition and the cultural aspects regarding nutrition in the indigenous communities in Ecuador. The next chapter presents the conclusion and final recommendations in relation to health promotion and public health interventions.
6. CONCLUSION

This dissertation explored two aspects regarding undernutrition in indigenous children in the Cangahua community (Highlands of Ecuador). The first point investigated were the cultural factors regarding child nutrition in the community and the second and central point of the dissertation was the indigenous mothers’ understanding of health promotion educational materials, which aimed to reduce child undernutrition in the community.

The role of woman regarding the nutritional aspects of their family involves the production, selection and preparation of food and was evident within the participants of the study. The family food of the participants were based on the crops that they cultivate in their houses (potatoes, quinoa, morocho, wheat, corn and barley) and the main dishes prepared were soups and sweet and salty hot drinks. However, the food given to the majority of children under five years differed in terms of quality from the other family members and occasionally included: eggs, chicken and meat.

The study also identified that the grandmother plays a prominent role in the child feeding practices of the community, due to the fact that the mother or the mother in law of the participants usually learnt from them about dishes to feed their grandchildren. The grandmother also often took care of the children after the public nursery day care centre provided by the government (CIBV) closed during the weekdays. On the other hand, the health care professionals did not have adequate communication with the participants regarding aspects of child nutrition, as one
mother said, the paediatrician had told her that her son suffered from undernutrition because she did not give adequate food to her child, but this was without further explanation; however, the mother had wanted to know which foods to give to her son in order to improve his nutritional status.

The health promotion materials used in this study were selected from two main programs focused on child undernutrition delivered by the Ecuadorian government: ‘Nutrition towards zero undernutrition’ and the ‘Chis-Paz’ food supplement. Even though the purpose of the leaflet from the ‘Nutrition towards Zero undernutrition’ program was to inform the population about the importance of breastfeeding and complementary food and the purpose of the leaflet for the Chis-Paz food supplement was to explain to the population how to prepare the food supplement via six simple steps, the participants were not confident about the information provided via this type of educational strategy. The majority of the participants did not understand the written messages of both leaflets due to the fact that the participants had low levels of education, and indeed one of them needed help to read the messages, and also one participant said that the messages had been developed for people from the ‘city’ rather than people from the ‘mountains’. On the other hand, the photo used in the ‘nutrition towards zero undernutrition’ program were instantly recognizable to the participants and easy to understand for them because of the landscape and the clothes used by the woman were from the highlands region of the country. However, the images from the Chis–Paz food supplement were confusing for the participants, especially in the images 2, 4 and 5 because they did not understand the relationship between the words and the images.
The implications of this dissertation are important for health promotion and public health campaigns, due to the fact that existing health promotion educational materials are not adequate for indigenous peoples and their needs. The main source of communication among indigenous peoples in the Ecuadorian Andes is via verbal communication rather than written communication and take place during normal daily life activities such as farming. Traditionally educational activities are developed in groups according to the community’s hierarchy in which older people play an important role because of their knowledge and wisdom in topics related to the health and illness process and traditional medicine. Thus, any new health promotion educational materials focused on child undernutrition should be developed with a multicultural approach in which the cultural context of the community have to be taken into account via the use of group activities such as workshops with verbal communication and real examples related to the indigenous peoples daily reality. In addition the illustrations and messages of written materials should be developed in Spanish and Quechua with short messages and tested with the participants and community leader in order to prove the efficacy and utility of the materials. It is important to mention that the majority of the studies regarding indigenous peoples are carried out with indigenous of Australia and Pacific Ocean, which denotes the necessity of more research in relation with indigenous peoples of Andean Countries. Further research via group methods such as focus groups or group interviews should be developed with indigenous peoples regarding health promotion in order to improve the quality of life of this population.
7. BIBLIOGRAPHY


Pan American Health Organization (2008a) Social determinants of health of indigenous peoples of the Americas. Available at:


APPENDICES
Appendix 1: Chis-Paz food supplement
Appendix 2: Topic Guide

Title of the study: Indigenous mothers’ understandings of health promotion educational materials which aim to reduce child undernutrition in Cangahua Village (Highland of Ecuador).

Child nutrition

- What does your family usually eat?
- Is the food the same for all the members of the family?
  Prompt if necessary:
  - What does your child/do your children under five years old usually eat?
- Where does the food that you and your family eat usually come from?
- Is there any particular difference about the food that you give to your child/children?

Health Promotion Educational Materials

- Have you seen these pictures and information before?
- What do you think about these pictures?
  Prompt if necessary:
  - What do they make you think about?
- How do you interpret the messages in the two leaflets?
- How do you understand the text?
  Prompt if necessary:
  - What do you think of the message of the leaflets?
- Do you think that these leaflets are important? Why/why not?
- Have you ever heard of Chis-Paz?
- Do you know why the Government gives you this product (Chis-Paz)?
- Have you ever included Chis-Paz in your child/children meals? If yes, how often you use it? How do you use it? If no, why not?
- Do you believe that the brochures provide you with enough information?
- Do you think information about the nutrition of your child/ren could be given to you in a different way? If yes, how?
Illustration 1. Nutrition action towards cero undernutrition Health Promotion Program


Illustration 2. Chis Paz Health Promotion Program (food supplement)

Appendix 3: Approval Letter Research Ethics Committee

School of Health Sciences and Social Care
Research Ethics Committee

Proposer: Maria Jose Mendoza Gordillo – MSc Health Promotion and Public Health

Title: Indigenous mothers’ understandings of health promotion educational materials which aim to reduce child undernutrition in Cangahua Village (Highland of Ecuador)

Reference: 14/5/HPR/04

LETTER OF APPROVAL

The School Research Ethics Committee has considered the amendments recently submitted by you in response to the Committee’s earlier review of the above application.

The Chair, acting under delegated authority, is satisfied that the amendments accord with the decision of the Committee and has agreed that there is no objection on ethical grounds to the proposed study. Approval is given on the understanding that the conditions of approval set out below are followed:

- The agreed protocol must be followed. Any changes to the protocol will require prior approval from the Committee.

Please note that:

- Research Participant Information Sheets and (where relevant) flyers, posters, and consent forms should include a clear statement that research ethics approval has been obtained from the School of Health Sciences and Social Care Research Ethics Committee.
- The Research Participant Information Sheets should include a clear statement that queries should be directed, in the first instance, to the Supervisor (where relevant), or the researcher. Complaints, on the other hand, should be directed, in the first instance, to the Chair of the School Research Ethics Committee.
- Approval to proceed with the study is granted subject to receipt by the Committee of satisfactory responses to any conditions that may appear above, in addition to any subsequent changes to the protocol.
- The School Research Ethics Committee reserves the right to sample and review documentation, including raw data, relevant to the study.

Paul Roden
Deputy Research Ethics Officer, School Research Ethics Committee
School of Health Sciences and Social Care

27 June 2014
Appendix 4: Cangahua Community Leader letter

GOBIERNO PARROQUIAL DE
“CANGAHUA”
FUNDADA EL 29 DE OCTUBRE DE 1796
CAYAMBE PICHIÑCHA ECUADOR
TELEF: 275475 68594280
l.e.comunidades@outlook.com
www.gobparrocualiag.gov.ec

OF. No. 00147  S – 2014

Cangahua, 06 de Mayo de 2014

Señores:
COMITÉ DE ÉTICA BRUNEL UNIVERSITY LONDRES
Presente:

De mi consideración:

Reciba un cordial y atento saludo en nombre de quienes hacemos GAD Parroquial de Cangahua, a la vez le deseamos toda clase de éxitos en sus funciones diarias.

Yo Manuel María Ucuanango, PRESIDENTE DEL GADPR DE CANGAHUA; Cantón Cayambe Provincia de Pichincha, Ecuador. Por medio del presente me dirijo a ustedes con el fin de comunicarles mi aceptación para que la Señorita María José Mendoza Guevara, tenga acceso a la parroquia de Cangahua y sus comunidades con el fin de realizar su investigación y las entrevistas necesarias a las madres de la comunidad como parte de su disertación de maestría.

Por la favorable atención que se digna dar al presente, anticipamos nuestros debidos agradecimientos, reiterándole nuestros sentimientos de consideración y estima.

Atentamente,

Sr. Manuel Ucuanango
PRESIDENTE GADPR ADMINISTRADOR
Cangahuá, 6 May 2014

Research Ethics Committee
School of Health Sciences and Social Care
Brunel University
London

I, Manuel Maria Ulcuango Farinango President of the Cangahuá Community, Cayambe Town, Pichincha Province, Ecuador, inform you that I agree that Miss María José Mendoza Gordillo may have access to the Cangahuá community and its member villages in order to carry out her research including the necessary interviews with the mothers who live in the community as a part of her Master degree dissertation.

Kind regards,

Mr. Manuel Ulcuango

President and Administrator of the Community of Cangahuá.
Appendix 5: Participant information sheet.

Important information that you need to know before taking part of the study

Title of the study: Indigenous mothers’ understandings of health promotion educational materials which aim to reduce child undernutrition in Cangahua Village (Highland of Ecuador).

You have been invited to take part in this research. Before you decide to participate it is important to you read carefully this information sheet. You can also discuss with others about being part of the research and you can reply within one day whether to take part or not in the study.

This research is being sponsored by Brunel University in London UK. All the results will be part of the dissertation of the researcher.

What is the purpose of the study?
The purpose of this study is to explore your perceptions about the nutrition of your child, as well as your understanding of the messages and images of health promotion programs to reduce undernutrition. In addition, the researcher would like to know your suggestions to improve health promotion education strategies.

Why have I been invited to participate?
Ten mothers will be part of the study. The inclusion criteria to participate are the following:

- Mothers who live in Cangahua village.
- Mothers who are indigenous.
- Mothers with children under five years old.
- Mothers who are able to read and write.
• Mothers who do not have severe mental health problems or cognitive disability.
• Mothers who have been involved in health promotion educational interventions delivered by the Ecuadorian Government or International Organizations.
• Mother who can give fully informed consent to participate in the study.

Do I have to take part?
Participation in this research is voluntary. It is entirely your decision whether to take part. If you do decide to participate and then you decide to withdraw this is also your free choice. There are no adverse consequences should you decide not to continue participating.

What will happen to me if I take part?
The research consists in an interview of approximately 45 minutes. It will be digitally recorded. The interview will be a normal conversation without any previous preparation. It will take place in a private room in the meeting house of the community at the time and date that is convenient to you.

What are the advantages of taking part in the study?
The main advantage of taking part in the study is that you can share your ideas and feelings in order to improve the health promotion programs which aim to reduce child undernutrition.

What are the possible disadvantages and risks of taking part?
The topic of child undernutrition might cause possible distress. If you feel upset or anxious the interview will stop and you can speak with a friend, nurse or doctor of the community. It will be your decision whether to continue with the interview after that.

What if something goes wrong?
If any of your questions are not answered satisfactorily by the researcher or you wish to make a formal complaint, you can contact the Supervisor, Bella Vivat,
bella.vivat@brunel.ac.uk or Elizabeth Cassidy, Chair of the School of Health Sciences and Social Care Research Ethics Committee at Brunel University, elizabeth.cassidy@brunel.ac.uk. Additionally, if you want to stop the interview because you feel upset or anxious you can contact either the medical centre of Cangahua Village phone number +5932792478 or the leader of Canhagua Village phone number +593987916089)

Will my taking part in this study be kept confidential?
All the information that you provide to the researcher will be strictly confidential. Only the researcher will know this information. In order to analyse the information and write the final report the researcher will ask each participant to choose a false name that will be used in order to keep your real name secret.

If you should say anything which raises concerns about the health of you or your child, the researcher will ask for your permission to pass these concerns on to the community nurse or doctor. If the researcher should have any particular concerns for the safety of you or your child, she will tell the nurse or doctor of her concerns.

Who has reviewed this study?
This study has been approved by the Research Ethics Committee of the School of Health Sciences and Social Care at Brunel University.

Who can I contact for further information?

Dr. Elizabeth Cassidy
Chair of School of Health Sciences and Social Care Research Ethics Committee
Mary Seacole Building 3/41
Brunel University
Uxbridge
UB8 3PH
United Kingdom
Telephone: +44 (0)1895 268736
Email: elizabeth.cassidy@brunel.ac.uk

Dr. Bella Vivat - Dissertation Supervisor

Research Lecturer - Health Studies
Mary Seacole Building 1/11
Brunel University
Uxbridge
UB8 3PH
United Kingdom
Telephone: +44 (0)1895 268850
Email: bella.vivat@brunel.ac.uk

Maria Jose Mendoza Gordillo
Postgraduate student of Health Promotion and Public Health
Brunel University London - UK
Email: hp13mjm@my.brunel.ac.uk
Telephone: +593998558499 (Ecuador).

Many thanks for reading.
Appendix 6: Consent form

Title of the study: Indigenous mothers’ understandings of health promotion educational strategies which aim to reduce child undernutrition in Cangahua Village (Highland of Ecuador)

Your address…………………………………………………………

Your telephone no…………………………………………………

Please complete by yourself the entire sheet Please tick the appropriate box

Have you read the Research Participant Information Sheet?

Have you had an opportunity to ask questions and discuss this study?

Have you received satisfactory answers to all your questions?

Who have you spoken to?

Do you understand that you will not be referred to by your real name in any report concerning the study, but by the name you have chosen?

Do you understand that you are free to withdraw from the study:

• at any time?

• without having to give a reason for withdrawing?

• without affecting your future care?
I agree to my interview being recorded.

I agree to the use of direct quotes from my interviews using the name that I have chosen when the study is written up or published.

Do you agree to take part in this study?
## Appendix 7: Field notes

<table>
<thead>
<tr>
<th>Day</th>
<th>Notes</th>
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<tbody>
<tr>
<td>Trip to Cangahua, from Quito</td>
<td>It was about 06:45, very early in the morning, when we left from Quito with our destiny to Cangahua. The trip was not very long, even though the traffic was a little heavy in the Northern Pan-American Highway up to Calderon and Carapungo areas. The community we are visiting is about an hour away from the City of Quito and 10 minutes before Cayambe. Despite all predictions, we arrived to the community at 08:10, where we were to meet Liliana the gatekeeper of the community at 09:00, so we decided to have some breakfast in Cayambe while we waited for her.</td>
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<tr>
<td>Arriving to Cangahua and met the gatekeeper</td>
<td>After breakfast we arrived in Cangahua at about 09:30 a.m., Lili Perez who is one of the members of the Parish Board in the health area did not arrive yet to the place of the meeting, so we decided to look for her in the provisional community house (the community house which is in front of the Central park of Cangahua, is at the moment under remodelling), but we were informed that she had already left to meet us. When we met with Lily she was very nice and friendly, once into our car she directed as to the place where we will stay during our time in the community. I stayed in a hostel surrounded by a big land. Nutrition Students from the Catholic University and members of the Peace Corps usually use this place as a residence. I performed a pilot interview to identify the understanding of the interview guide, as well as to identify possible errors in the research. By this time, I chose Mrs. Mari, an employee of the hostel, as a subject for the pilot interview.</td>
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</table>
| Implementation of pilot, talks about the consumption of chis-paz | It was 05:35 p.m., before it gets late, I decided to start the implementation of the pilot interview to Mari, who very kindly accepted the proposal. I interviewed her in the kitchen of the hostel as the interviewee wished. It was decided to use a voice recorder. The following observations are drawn from the interview with Mari:  
* for the interview to be anonymous, I asked the person to choose a name which will be the pseudonym for the research, she chose to be Mari.  
* Feeding her family is based on the production of her own land, buying extra products according to her financial possibilities.  
* Her family structure is an extended family, she lives with her parents, her sister and her two children.  
* Work and migration are as a result of her family structure and the dynamic of it.  
* she understands the importance of a varied diet with fruits and vegetables, unfortunately it is limited by the luck of money.  
* she has only a slight knowledge about the promoting government propaganda about health. She knows about Chris Paz and ambiguously accepts its usefulness in the care and health of the children.  
* She implicitly and explicitly expresses the need for workshops and training about child nutrition and above all, training on the use of Chis Paz.  

The interview finished and Mari returned to her activities. Soon after, Lili comes to visit me with her daughter, with whom we could talk.
about their activities of these days. They also talked about the cold weather in the upper communities in Pambamarca Area. Of this informal conversation I was able to emphasize what the daughter of Lily mentioned about the acceptance of Chis-paz Paz by the community indigenous mothers. The daughter of the gatekeeper as student of child, development, practiced in communities around the area and she knew at the first hand that many mothers do not like Chis Paz because of the secondary effects such as diarrhoea.

Before 19:30 they left the room and we were ready to have a good rest as tomorrow morning we will go to Pucara Community at the CIBV.

Final Comments of the day

Nutrition: According to what Mari stated, food consumption of this region is based on agricultural production itself. Although there is a basic understanding of the importance of a varied diet, money becomes an obstacle to obtain the products.

Health promotion materials: Mari also sets the ambiguity standard to the presence of government health promotion materials. She also mentioned the importance of training in relation to Chis Paz.
  • How many mothers see the consumption of Chris Paz as damaging? (important question)

Day 2

Trip to Pucara neighbourhood

The previous night was agreed to meet Lili at 9:00 am Cangahua Central Square to take car to go to Pucara, a neighbourhood which is 15 minutes from the centre of the community and I went with by two young men who were volunteers of Peace Corps related. The transportation between neighbourhoods is a problem, taking into account the cost of mobilizing and distances.

We arrived in the community in about 15 minutes, not so much the distance, but a difficult road (cobbled streets). Mothers were waiting and received me well. In order to do my interview in a classroom of a children's I had to find a comfortable space for interviews.

All children were sitting watching a TV video of festivals and his teacher mentioned that today they will leave early because of the football game.

In the nursery day care centre there is advertising in the about the nutrition of children in both Spanish and Quichua. This time the interviews was conducted with 3 mothers.

Interview with Rosa (pseudonym):

1.- She is a little nervous when the interview begins, and the noise outside the classroom does not help.
2.- She has basic knowledge about feeding children.
3.-she emphasizes the fact that the year and a half is good to breastfeed a baby because after that period breast milk is not nutritious.
4.-Despite knowing Chis Paz, she has no knowledge of why and how this supplement is given.
5.-Her children have consumed Chis Paz at some point but in the nursery day care centre.

Interview with Leticia (pseudonym):

1.-The family structure corresponds to an extended family.
2.-The diet is based on their own agricultural production.
3.-She does not understand government advertising about how to prepare Chis Paz.

Interview with Natalia (pseudonym):

* The diet is based on their own agricultural production.
* Mentions that feeding children is different from adults.
* She has basic knowledge of infant feeding.
* Despite knowing about Chis Paz, She doesn’t know of any health potion materials.
* She said that the consumption of Chis Paz is important because there are nutritional deficiencies.
* She knows that the supplement contains iron.
* Her first child did not consume Chis Paz.
* She says that when children are malnourished Chis Paz can hurt, because it causes diarrhea.
* She says they need workshops and training from the government in terms of food and nutrition.

Once I finished the interviews, the members who worked in the nursery day care centre invited me to lunch, it was about 11:30 am. I ate soup with potatoes, rice with salad and egg, and pineapple juice. However, the children received small portions of beans and salad (about a spoon), lots of rice and they were not given egg. After thanking the hospitality and saying goodbye, we started our return journey; communities are often widely dispersed among themselves and find transportation is somewhat complicated, so we walked to Cangahua Center. About a 15 minute walk down, we stopped a truck which took us and a indigenous mother with her daughter to Central Park of Cangahua.

Medical centre

In Cangahua before going for lunch, I went to the medical centre of the community, where I spoke with the nurse, and she received me with open arms, because She knew me as I had worked in the community for two years. She gave me opening for tomorrow I could conduct interviews with mothers in that place.

After talking with the nurse I went to the vestry to see if any other mother had appeared to be part of the study.

Evening Transcript

After lunch afternoon passed without much novelty, being a perfect time to transcribe the interviews obtained so far. I must admit that one of the problems that has made me uneasy, is not being able to access the internet, and I want to communicate with Bella to tell her about the research process. However, to my surprise, members of the Peace Corps
put internet in their room and I shared their WIFI signal.

Final Comments of the day

Products consumed: it is repeated that they eat their own crops, which are reduced to potatoes, onions, barley, wheat (typical products of the floor). So far, we can say that the consumption of animal protein is minimal. The buying of extra products involves a sacrifice of mobility and money, so they rarely do.

Being with Liliana helped me to the mothers of the day care centre Foremost the mothers get nervous because of the interviews.

Day 3

Interviews at the medical centre

In Cangahua, It is very cold now and we had a blackout. I woke up not so early, just after 8h00 am. I had breakfast and went as fast as could to the medical centre, where the nurse received me very kindly. I feel happy for how mothers want to contribute to my research. The medical centre was full of people, several indigenous mothers were there with their children, I was assigned a room outside of the medical centre

Interview with Anahi(pseudonym)

* She mentions that she gives fruits and coladas to her daughter which makes a difference between the food of the other members of the family
* Her diet is more diverse than the local products, they eat vegetables, meat and fruits.
* She does not know about health promotion programs
* She says that her daughter diet is deficient
* She does not know what Chis Paz is, and likewise excludes promotional leaflets.

* Despite this, she thinks there is no need to create or implement new methods of health promotion.
* Her family structure is extended family.
* Her education is incomplete and works in a floriculture.

Interview with Martha (pseudonym)

* Her diet is based on their own agricultural production, but also as protein from their own animals.
* Feeding their children with fruits, and especially mentions that access to them is easy.
* Knows about the leaflets of Action towards zero undernutrition.
* No knowledge about feeding children.
* Knows about Chis Paz advertising, but does not understand the content

* She has given Chis Paz to his 3 year old son.
* She said the need for workshops and training about food and nutrition.
* She lives with her husband. Nuclear family.

Interview with Maria

* Their diet is based on their own agricultural production
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<th>Interview with Emely:</th>
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- Make extra purchases like rice, noodles, meat and chicken once a month in Cayambe.
- Relates food with intelligence.
- Consider giving her baby fruits and coladas when he will be able to eat.
- Her mother and doctors of the medical centre taught her about food.
- No known about Chris Paz publicity
- Stresses the need for workshops and training about food and nutrition.
- She lives with her husband and family nuclear

<table>
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<th>Evening in Cangahua</th>
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I completed the interviews in the medical centre and I went to the vestry to see if there are more answers from other mothers. I found Manuel, the leader of the community. He was very kind and between jokes, invited me to the festivities of the community in which they choose the queen of the community called ñusta in Quechua it means the queen of the sun.

I left the house vestry and went to the hostel for lunch. These days Mari has taken care of my food. I feel very happy because she is a good cook and the food from the Andes of Ecuador is delicious, I haven’t eaten this delicious food for a long time. Mari is always very friendly and makes me feel at home.

The afternoon passed by taking some notes and transcripts of importance on the responses of mothers and I began to perform basic coding data analysis.

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<th>Final comments</th>
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The government does not realize that there are still illiterate people, the health promotion materials are made feasible to people who can read, discriminating against those who cannot, and causing problems.

Although participants are excited to participate in the research, I feel that there is a little nervousness of some mothers regarding the interview, especially around knowledge about health promotion programs.

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<th>Day 4</th>
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Lote 2 neighbourhood

I agreed to meet Lili at 9 to go to lote No. 2 to make the last interviews. I got up early, had breakfast, I wore a lot of cloths (they said that it is very cold in these areas). When I met Lili, we took the same van that we went to Pucara last time. In this occasion the trip was longer.

We arrived at the nursery day care centre. When the children saw me, they began to cry, Lili explained to me that children are often afraid of strangers because they think they are doctors and that they will have
injections.

Interview with Priscilla

* Her food comes from her own crops.
* Sometimes she buys in Cayambe
* She does not know about the health promotion programs
* She recognizes that fruits are a good food, and the need to avoid junk food like sweets and bad snacks.
* She knows about Chis Paz, and mentions that some children had reactions such as diarrhea but with the suspension supplement within a week the child will assimilate it better.

Interview with Liliana (pseudonym)

* She lives with her husband. Nuclear family.
* Her husband helps at home cooking.
* She stopped breastfeeding because her child did not want it anymore; instead she gave the baby coladas since the baby was 4 months old.
* She recognizes that the advertising of Chris Paz is not easy to understand and that many mothers are illiterate.

Interview with Maruja

* She eats what she produces and buy some products in Cayambe.
* His mother taught her about child nutrition
* Accepts the importance of food for growing

Mr. Salgado, the owner of the van that I went with, told us about a traditional drink, a juice that comes from a plant, Mr. Salgado said that he had about 20 liters of this juice, so we could do try a little, so we did. He lives about a half block from Central Park, so he stopped at his house to get the juice. He brought the juice and he gave it to Lili who served us, I took 2 glasses of the flavored juice as I liked it very much. It is typical juice within the community during the holiday called Intirraimpi party. In this festivity they thank the sun the earth for the crops provided.

Community mothers of Lot No. 2 Company had much more information about health promotion and nutrition. Although this neighbourhood is seen as a poor sector, mothers have a higher standard of literacy.

Community mothers of Lot No. 2 Company had much more information about health promotion and nutrition. Although this neighbourhood is seen as a poor sector, mothers have a higher standard of literacy.

Something that makes think a lot is that one mother said that they did not received information about the possible side effects of Chis Paz, so the mothers get scared and stop giving the supplement to their children.

* How many of members of the ministry of public health can speak Quichua?

* Have they taken into account implementing health promotion programs considering the distances between the neighbourhoods and the medical centre?

Lili has been always very friendly with me. I have been very well welcomed by Lily in Cangahua. As relevant data I agreed to hold a
workshop with the study participants. I was sad to say goodbye to Mari and Lily. I hope to return soon and continue working in the community and other communities like them. After these two weeks I’m very interested in Cangahua and to do more research in indigenous communities in my country.