

Context behind Nutrition Challenges in Nepal: Focusing on Health Education in Schools

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Abstract

Background: The Federal Democratic Republic of Nepal, has made significant progress to reduce malnutrition. As Nepal, succeeded in reducing stunting at the fastest rate in the world between 2001 and 2011 (Cunningham, Headey, Singh, Karmacharya, & Rana, 2017), the aim of the paper is to analyze the background of Nepal's improvement of nutritional challenges.

Methods: First, interviews were conducted to a gain deep understanding of how Nepalese people perceive nutrition improvement in their country. Second, to provide an overview of health education, a literature review and was conducted. Third, interview was performed again to understand the local people's view of school education.

Results: First, interviews revealed that while there are positive aspects of nutrition improvement in Nepal, government interventions have not led to changes in people's health behaviors. Second, the literature review showed a significant difference in the quality of health education between public and private schools. Third, Nepalese people were found to have low expectations of public schools, which hindered improved nutrition.

Conclusion: Analysis of the transtheoretical model indicates that although the government is capable of transforming people's nutrition-related behaviors by strengthening the governance of health education, the weak governance of public schools in Nepal counteracts improvement of the nutrition of the children who attend them.

Keywords: Nepal, nutritional improvements, health education in school

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Their contributions played an essential part in making this project comprehensive and fruitful.

List of abbreviations

BPEP	Basic and Primary Education Programme Implementation Plan
CDC	Curriculum Development Center
ECED	Early Childhood and Developmental Education
EFA	Education For All
HAZ	Height-for-Age Z-scores
SDGs	Sustainable Development Goals
SHN	School Health and Nutrition Program
TTM	Transtheoretical Model
WASH	Water and Sanitation
WHO	World Health Organization

1. Introduction

1.1. Background Information

The Federal Democratic Republic of Nepal, which is located between China and India, has a total population of 29,164,578 of diverse ethnic background including 125 ethnic/caste groups (Government of Nepal Office of the Prime Minister and Council of Ministers National Statistics Office, 2023). The country is landlocked, with diverse geographical features and hilly terrain in a relatively small territory. Of the total land area, 15% is in mountainous areas, 68% in hills areas, and 17% is on plains (Government of Nepal, Ministry of Education, Science and Technology, 2022). Most of the land is dominated by the Asian monsoon. Agriculture is the main occupation and tourism based on the mountains is one of the main sources of income in Nepal (Shrestha & Aryal, 2010).

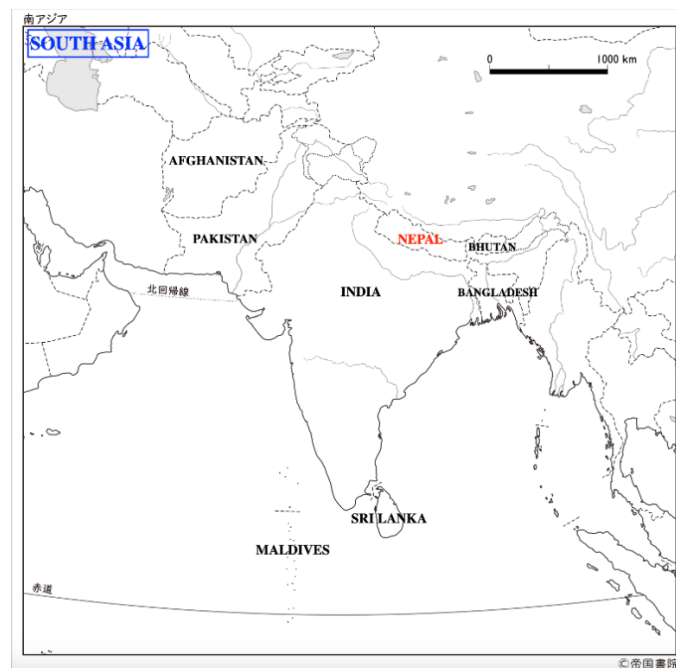


Figure 1.1-1. Maps of South Asia

*Source: Created by the author based on a blank map by Teikoku Shoin

Nepal is divided into seven provinces, with 6,116,866 people living in province 3, where the capital Kathmandu is located (Government of Nepal Office of the Prime Minister and Council of Ministers National Statistics Office, 2023). According to the 2011 census, 123 languages are reported as mother tongues, and approximately 40% of the total population speaks Nepali as their mother tongue. Ten religious categories were reported in the 2011 census, with Hinduism accounting for 81.3% of the population, followed by Buddhism (9%), and Islam (4%) (Government of Nepal Ministry of Foreign Affairs, n/a). The literacy rate of all adults (ages 15 and above) was 71% in 2021 (The World Bank, 2023) . The schooling system in Nepal consists of a minimum of one year of preschool education, which is also known as Early Childhood and Developmental Education (ECED), eight years of basic education (grades 1-8), and four years of secondary education (grade 9-12) (Protiva Kundu, 2023).

In recent years, Nepal has integrated the SDGs (Sustainable Development Goals) in national development frameworks. The country has stated, “Prosperous Nepal, Happy Nepali” as a comprehensive national goal and is implementing the 15th Development Plan (2019/20 – 2023/24). This is a long-term vision that is aimed to provide the population equal opportunity, dignity, and a high standard of living with a socialist-oriented economy and ubiquitous education (Government of Nepal National Planning Commission, 2020). According to the United Nations, assessment of SDGs implementation over the past four years have shown some promising results, especially in four sectors. First, the incidence of poverty has decreased to 18.7% as of fiscal year 2017/18 (SDG1). Second, a significant reduction in the prevalence of underweight, stunting, and wasting in children under five years of age is reported. Third, infant mortality, maternal mortality, and child mortality decreased. Fourth, gross enrollment rates for basic and secondary education were 93%

and 46%, compared to the 2019 targets of 98.5% and 72%, respectively (SDG 4) (United Nations, 2022).

Nepal experienced a civil war, known as “Nepalese Civil War” (hereinafter referred to as “the civil war”) that was caused by political instability in the past. In February 1996, the Maoist party declared a people’s war against the monarchy and the elected government out of dissatisfaction with the direction of social and political change. In 2006, the second People’s Movement was launched, with continuous rallies and demonstrations held throughout the country. After this popular movement restored the multi-party system, a peace agreement was signed between the Maoists and political parties in November 2006, ending the decade-long civil war (Deepak Thapa & Alexander Ramsbotham, 2017). The civil war left approximately 17,800 people dead, and 8,500 public facilities, including schools, government offices, and bridges, destroyed (Take Toru, 2020).

In April 2015, a major earthquake measuring 7.8 hit the country, followed by several strong aftershocks that caused loss of life, infrastructure, and property. The main 2015 earthquake destroyed many buildings and infrastructure both in urban and rural areas (Goda et al., 2015). It is reported that the earthquake caused extensive damage with nearly 30,000 casualties (UNICEF, 2016).

Despite experiencing such political instability and massive natural disasters, Nepal has made progress on the SDGs. Nepal has also made progress in its recovery and development in areas other than the SDGs. For example, based on the Nepal Living Standard Survey, the poverty head-count has decreased by 17% in 15 years in the country, from 47.76 in 1995/96 to 25.16% in 2010/11, making Nepal one of the most successful countries in the world (UNDP, 2021).

Another example is the remarkable progress made in the nutrition area. Nepal has been highlighted for good practices and significant improvement in nutritional issues. In Nepal, about two-thirds of the children were stunted in the 1990s, making undernutrition a serious challenge compared to other countries. However, between 2001 and 2011, the country succeeded in reducing stunting at the fastest rate in the world (Cunningham, Headey, Singh, Karmacharya, & Rana, 2017). Nepal is also given high recognition for its nutritional improvements despite its historical background of major political transitions, the civil war, and major earthquakes (Conway et al., 2020a). Previous studies have shown that factors contributing to improved nutrition status in Nepal were poverty reduction, improved access to health care, improved sanitation, and increased educational opportunities (Conway et al., 2020a).

The malnutrition issues can be divided into two broad perspectives: undernutrition and overnutrition. First, according to WHO, undernutrition refers to wasting (low weight-for-height), stunting (low height-for-age), and underweight (low weight-for-age) (World Health Organization, 2023). Access to nutrition can be translated into access to food, which is directly connected to human life. Needless to say, it is important for humans to obtain the nutrition they need in their daily lives to maintain body functions for life. However, even today, the world is still not well-fed, and there are still people without access to even the bare necessities of food. It is reported that between 691 million and 783 million people worldwide faced hunger in 2022, and it is estimated that the SDGs target for hunger eradication will not be met by 2030 at the current rate of progress (World Health Organization, 2023). Child malnutrition is particularly serious, and WHO calculates that 149 million children under the age of 5 years old were stunted in 2020 (World Health Organization, 2023). Although several risk factors can cause malnutrition,

including nutrient deficiencies and poverty, strong epidemiological evidence suggests that children with malnutrition are more vulnerable to infectious diseases that can be fatal and life-threatening (Walson & Berkley, 2018). For instance, it has been reported that children in malnourished situations are at higher risk of diarrhea, both in terms of incidence and severity (Ferdous et al., 2013). As such, improving the nutritional status can also reduce the risk of contracting infectious diseases.

Second, overnutrition includes overweight, obesity, and diet-related non-communicable diseases, which have been of increasing concern besides undernutrition in recent years (World Health Organization, 2017). Since the 1980s, Asia, South America, North Africa, the Middle East, and urban areas of sub-Saharan Africa, have undergone a series of lifestyle changes, including eating and physical activity habits. With rising incomes due to socioeconomic development and the expansion of international companies due to globalization, not only access to food has become easier today, but diets have also shifted from traditional to modern, globalized diets. This “nutrition transition” to modern dietary patterns characterized by excessive intake of sodium, sugar, and saturated fatty acids has been associated with obesity and chronic diseases (Clemente-Suárez, Beltrán-Velasco, Redondo-Flórez, Martín-Rodríguez, & Tornero-Aguilera, 2023). Indeed, one third of the world’s population being overweight or obese now, and 62% of these reportedly living in developing countries and those low- and middle-income countries are facing the challenge of both undernutrition and overnutrition as a result of urbanization and socioeconomic development (Nomura Marika, Yamaguchi Miwa, & Nishi Nobuo, 2022). This simultaneous and multiple presence of both undernutrition and overnutrition in a given population/household/individual is recognized as the “double burden of undernutrition” (Nomura Marika, 2022).

Ensuring that people have access to the food they need and a balanced diet not only protects individual health, but also promotes national development. Improved nutrition has an impact on physical and mental development, intellectual capacity, and individual productivity. These improvements would contribute to both individual productivity and national strength by promoting the country's human capital (Siddiqui, Salam, Lassi, & Das, 2020). In other words, improved nutrition is not limited to the health sector, but is closely related to other sectors as well. In fact, healthy and nutritious eating habits in childhood influence children's development (U.S. Department of Health and Human Services and U.S. Department of Agriculture, 2015). As it also has a lifelong impact on their lives once they reach adulthood, nutrition issues are often recognized as being part of education. Education can promote behavioral changes, encourage people to make healthier choices and form healthy habits. In Japan, for instance, school lunches are now considered of education as they contribute to the sound physical and mental development of children, and improve the dietary habits of the nation (Kishiyama Eriko & Kurotani Hidehisa, 2021). Promoting child development through adequate nutrition is the foundation of society, as it will help to secure a productive future workforce. In this sense, nutrition issues are not only a matter of maintaining the life of each individual, but also of society as a whole in relation to well-being, education, and economic policy. As public health aims to solve health problems of society as a whole in the context of society and the environment, analysis and research of remedial measures for this nutrition challenge is one of the critical issues.

This study attempts to understand people's health behavior using the transtheoretical model (TTM). The TTM describes the process of people's behavior change in five stages: precontemplation, contemplation, preparation, action, and maintenance. An overview of

these five stages according to Glanz, Rimer, & Viswanath as follows (Glanz, Rimer, & Viswanath, 2015). The results obtained in this study will be discussed based on this TTM.

1. Precontemplation

People in this stage are not willing to change their health behaviors because they do not have enough information and do not know what health outcomes their behaviors will produce. People in this stage are not ready to accept interventions because they are not motivated to change their behavior to begin with.

2. Contemplation

People in this stage are beginning to think about changing their health behaviors and understand the pros and cons of behavior change. They are in the readiness stage of changing their health behaviors.

3. Preparation

People in this stage are actually planning to change their behavior in the immediate future. They may already have taken some small steps and are willing to change their behavior.

4. Action

These are people who have specifically changed their health behavior to modify their behavior or to acquire a new health behavior.

5. Maintenance

These are people who have modified their health behavior and are able to maintain it. They are the ones who are working to prevent relapse and have become more confident in their ability to maintain their health behavior change.

1.2. Objectives

The purpose of this paper is to analyze the background of Nepal's improvement in nutrition challenges, which have highly regarded in previous studies (Conway et al., 2020a). Specifically, three studies were performed to achieve this purpose. The first study was to identify local views of nutrition improvement in Nepal as exploratory research. Interviews were conducted to determine how local people perceive the nutritional improvement in Nepal. The second study aimed to identify, based on literature review, how school education is related to and has had an impact on nutrition improvement in the country. The third study was in-depth research to identify how Nepalese people perceived school.

This paper is composed of five sections. Each section is briefly outlined below.

1. First section: Background information of this study was discussed, as despite its historical events, Nepal has achieved improvement in nutrition status.
2. Second section: Statement on the first study conducted as exploratory research. Semi-structured interview was performed.
3. Third section: Describes the second study as verification on literature. Literature review and textbook review was conducted.
4. Fourth section: Description of the third study, which are in-depth research by using semi-structured interview.
5. Fifth section: A summary of this study. The results obtained through the three studies were organized using TTM.

2. First Study

The purpose of this section is to reveal locals' perceptions of the nutritional improvement in Nepal. To achieve this objective, an interview was conducted.

2.1. Background

According to WHO, the prevalence of stunting in children under the age of five years has decreased from 39.2% in 1990 to 21.9% in 2018 (World Health Organization, 2019). By geographical region, from 1990 to 2018, the prevalence of stunting in under-five-year-old in South Asia region is trending downward, yet it is higher than the global average. Among these, Nepal, which is also located in South Asia, has made progress in reducing the prevalence of stunting from approximately 66% to 36% between 1996 and 2016 (Conway et al., 2020a).

According to Conway et al., there are four factors that have been identified as contributing to Nepal's achievement of improved nutrition. The first is the achievement of poverty reduction. Poverty reduction and wealth accumulation have been identified by various previous studies as determinants of Nepal's achievement of reducing stunting. Second is the contribution of the government and aid agencies to health policies. Both the implementation of health programs, such as the National Immunization Program since the 1980, and the utilization of health services have contributed to improve child health. Third is investment in education. As a part of the "Education for All (EFA)" initiative, particularly education of fathers, had a significant impact in the areas of health and nutrition. Fourth is the improvements in water and sanitation (WASH) environment. Improved access to clean water and reduced open defecation have reduced the spread of infectious diseases and reduced poor nutritional status. (Conway et al., 2020b).

2.2. Objectives

The first study was attempted to understand the detailed reality of these nutritional improvements in Nepal. Given these backgrounds, the author decided to clarify how those who are familiar with the local situation in Nepal perceive the state of nutritional improvement in the country.

2.3. Methods

This section details the interviews used as a method of analysis. In this study, the author conducted a pre-interview with one individual and an interview survey with another two individuals.

2.3.1. Interviewee

The purpose of the interview is to understand how local people view the situation of nutritional improvement in Nepal.

For the selection of interviewees, the author first conducted a pre-interview with a person who is familiar with the local situation in Nepal. This pre-interview was conducted with a person (Interviewee A) who is engaged in NGO activities in the health care field in Nepal. She is a woman in her fifties, is engaged in NGO activities in Nepal, and has herself been to Nepal. The purpose of this pre-interview was to prepare for the main interview, including an opportunity to introduce the interviewees. Since this was the first time for the author to conduct an interview on nutritional improvement in Nepal, it was necessary for the author, a Japanese interviewer, to learn about the points to consider when interviewing Nepalese before conducting the main interview. During this pre-interview, the author shared the purpose of the study and asked the interviewee for advice

on developing this study. Although the details of this pre-interview are not described in detail, the author was able to receive useful advice on how to structure the main interview. The author also asked interviewee A to introduce people considered appropriate for achieving the objectives of this study.

The author specifically, asked to introduce people who fulfilled the following three points. The first is a person who has lived in Nepal and is familiar with the local situation. To understand local people's perception of the situation of nutritional improvement in Nepal, it would be appropriate to have a person who was born and raised in Nepal and has first-hand experience in the country. The second was a person with knowledge in the field of health. Topics related to "nutrition" such as diet and health are relatively close to our daily lives. However, it is difficult for those who are not familiar with the health field to view "nutrition issues" from a public health perspective rather than on a personal level. Since the purpose of this study was to gain a better understanding of Nepal's nutrition challenges as a population issue, people with knowledge related to health, medicine, and public health seem to be appropriate for conducting an interview. Third, the interviewees were to be either Japanese or English speakers. Since the author uses Japanese and English, persons who could use either language were considered as interviewees. Although it was possible to conduct the interview with a Nepali speaker through an interpreter, it was thought that the interpreter might not be able to grasp detailed nuances. In that sense, it was decided to select a Japanese or English speakers as interviewees.

As a result, two interviewees, Interviewee B and Interviewee C, were introduced by Interviewee A. Interviewee B is a female of around her 30s, born and raised in Kathmandu, the capital of Nepal. She has completed a master's degree in public health and is currently living in Japan. She is fluent in English. Interviewee C is also a female

in her 30s with a master’s degree in public health. She was born and raised in Kathmandu, and is currently living in Japan. She is also fluent in English. Although the author did not directly ask about the interviewees’ ethnicity/caste, both interviewees attended private schools in Nepal and studied at graduate schools in Japan, so it seems that they are in the upper class in Nepalese socio-cultural context. In this paper, pseudonyms are used for all names to ensure the anonymity of the interviewees.

2.3.2. Methods of the Interviews

Interviews of two individuals who could be interviewed were conducted in June 2023. Specific details are provided in the table below.

Table 2.3.2-1. Methods of Interview

Date	Interviewee	Method	Language	Time
June 7, 2023	Interviewee B	Online Interview (via Zoom)	English	About 1 hour
June 10, 2023	Interviewee C	Online Interview (via Zoom)	English	About 1 hour

The interviews were recorded using video and written transcripts. Online interviews were recorded with the permission of the interviewees. To avoid any possible malfunctions during the recording process, the interviews were also recorded by taking notes.

The purpose of this interview was to determine how local people perceive the improvement of nutrition challenges in Nepal. It was determined that semi-structured interviews would be appropriate to achieve this objective. The interviewer (the author) asked the interviewee to answer two mandatory questions: (1) “What do you think of

Nepal's high reputation in the area of nutrition improvement?" and (2) "What are your reasons to think so?"

In addition, the interviewer asked them to talk freely about other topics related to nutrition, food, and health that were discussed during the interview, and to expand on these topics. The interviews were conducted in English with interviewees B and C, and each lasted approximately one hour.

2.3.3. Procedure of Analysis

To achieve the objective of this interview, "How do local people perceive the situation of nutrition improvement in Nepal", data analysis was conducted using the following four procedures in reference to the grounded theory approach.

First, verbatim report of the interview was prepared. Second, narratives related to interview objectives were selected. To specific, the following two types of data were selected as categories from the verbatim data: the part that related to (1) "the evaluation of nutritional improvement as a country," and (2) "people's health awareness related to nutritional improvement." Third, subcategories and concepts were generated by interpreting two selected narratives. Then, the relevance of those concepts was examined to generate subcategories. Two category names were also refined. Fourth, the relationships between generated concepts, subcategories, and categories were examined and summarized in a table. The detailed results are shown in Table 2.4.1-1. and Table 2.4.2-1. in the following section. In this study, category, subcategory, concept, and comments by interviewees are shown as follows: " ", category; [], subcategory; < >, concept; and { }, comments by interviewees.

2.4. Results

In this study, ten <concepts> and five [subcategories] were generated. By organizing the “concepts” and [subcategories] according to the perspective from which to evaluate nutritional improvement in Nepal, two “categories” were found: (1) “evaluation from a national perspective,” and (2) “evaluation from the individual perspective.” Six <concepts>, and three [subcategories] were categorized as “category 1” whereas four <concepts> and two [subcategories] were categorized as “category 2.”

2.4.1. Category 1: “Evaluation from a national perspective”

Table 2.4.1-1. Category 1: “Evaluation of Nutritional Improvement from a National Perspective”				
Subcategory	Concepts	Meanings	Comments by interviewees	Speaker
			*Note: Text in parentheses is added by the author.	
Success as a Country	Success in reducing malnutrition	Nepal has achieved improvement in malnutrition issues.	Regarding nutrition, I agree that Nepal has improved a lot, in terms of eliminating nutrition, stunting, and wasting. It’s a fact.	B
			Despite of all of these issues, there is improvement in nutrition issues, and malnutrition issues in Nepal.	C
	Government-driven interventions	The government has viewed nutrition issues as an important problem and has taken a major role.	I think the most successful reason for this is, you might want to go to policy review, Nepal has done several policies and implementation for preventing stunting and malnutrition from primary level to third level.	B
			That (improvement in nutrition) is shown by maternal mortality rate, in stunting, and malnutrition and we cannot ignore the improvement by the government. Actually, the people do not believe much (in government), but the government is doing well with malnutrition and pregnant woman getting malnourished.	C

			There is a strict policy for treating children with malnutrition, and observation of physician or primary health center nurses, who observe and treat malnutrition and stunting very carefully.	B
Conditions in Urban Areas	Adequate food access	Adequate food is available in urban areas in general.	looking at the big picture, yes, I think people have good access to food (in Kathmandu) compared to other regions.	C
	Migrant workers to urban areas	There are barriers to the food environment for people from rural areas working in urban areas.	but still there could be a place in Kathmandu, where people and children don't have good access to food. For example, Kathmandu is full of people who come from other places for work and these people rent houses - one small room, with three people living in the same room. Whole day parents work, they don't care for the child, and in that situation, yes, the child is not getting enough food, the mother is not breastfeeding enough, and that situation is possible in Kathmandu.	C
			There are many brick factories in Kathmandu. These are not machine made bricks but hand-made bricks, so people apart (living away) from Kathmandu only come to Kathmandu for 6 months, because either 6 months would be rainy season when they cannot make bricks, so they usually come around September and would finish by March, April. They come to	C

			Kathmandu and near the brick factory people make a small house and during the 6 months they would be there. And among these families, I would say that the nutritional status is not good because all day parents are working at the brick factory, both father and mother, children are left alone at home, sometimes elder child.	
Conditions in Mountain Areas	Remaining challenges	Improving the nutritional situation in mountainous areas is still a challenge.	I think they (the government) are working hard (on nutrition issues in mountain areas) and the reduction rate of stunting from 50% to 30% is the result of the hard work but still along with 50% stunting is still a high rate.	C
	Limited food access	It is difficult to grow crops in mountainous areas with limited available resources.	In term of situation, because it's not their choice but (they cope with) what (is) available, the government cannot do anything to grow in a mountain area, because that is how the land is. So, it can only grow millet, potato millet...so what they do is utilize the resources, teach them how to use everything that is available.	C

As for the first category, “evaluation of nutritional improvement from a national perspective,” three subcategories, [success as a country], [conditions in urban areas], and [conditions in mountain areas] were generated (Table 2.4.1-1.). The results of the three subcategories are as follows.

1. [Success as a country]

Nepal is recognized as a country that is achieving <success in reducing malnutrition> and <government-driven interventions> was revealed as the underlying reason for that. Both interviewees B and C stated that Nepal has shown improvement as a country. In reality, interviewee B said {Regarding nutrition, I agree that Nepal has improved a lot, in terms of eliminating nutrition, stunting, and wasting. It’s a fact} and interviewee C said {Despite of all of these issues, there is improvement in nutrition issues, malnutrition issues in Nepal}. The reasons given for this were <government-driven interventions>. It was stated that {we cannot ignore the improvement by the government}.

2. [Conditions in urban areas]

In urban areas, there is generally <adequate food access>, whereas situations are different among <migrant workers to urban areas>. Interviewee C said {looking at the big picture, yes, I think people have good access to food (in Kathmandu) compared to other regions}. However, the situation appears to be different with migrant workers coming to urban areas. {Kathmandu is a full of people who come from other places for work} and it is possible that some of their nutritional status is not good because {whole day parents work, they don’t care for the child} and {children are left alone at home}so that {children are not getting enough food}.

3. [Conditions in mountain areas]

In mountain areas, nutritious status is recognized as <remaining challenges> because of <limited food access>. Interviewee C said {I think they (the government) are working hard (for nutrition issues in mountain areas) and the reduction rate of stunting from 50% to 30% is the result of the hard work but still along with 50% stunting is still a high rate}. As interviewee C's statement {it's not their choice but (cope with) what (is) available, the government cannot do anything to grow in the mountain area, because that is how the land is.}, the harsh environment for growing crops and limited food access were recognized as hindering the mountain areas to achieve proper nutrition status.

2.4.2. Category 2: “Evaluation from the individual perspective”

Table 2.4.2-1. Category 2: “Evaluation of Nutritional Improvement from an Individual Perspective”

Subcategory	Concepts	Meanings	Comments by interviewees	Speaker
			*Note: Text in parentheses is added by the author.	
Cultural factors	Attitudes toward pregnant women	Pregnant women's health is a high priority.	There are cultural factors too. In Nepal, pregnancy, I think is the only stage of life which is considered very important, the pregnant woman is given more priority in every setting.	B
	Raising children in a large family	The entire family is involved in the care of the child.	Children, they are taken care of by their grandparents, because we have this extended family cultures. Families live with grandparents. So, there is good care of children. So they can grow really well.	C
Environmental factors	Environment in which parents grew up	Parents raise their own children as they were raised.	There are so many things going on in their life, which they consider more important. For example, they don't have enough money for the next day, so there are so many things around their life, they don't take child nutrition as first priority because that's how they grew up, and if I survived, my child will also survive, and it's not a big deal.	C

			Even if parents and grandparents love their children, that is how they grew up themselves, and that is how the whole community is raising their children, so, they don't see any problem with how they feeding their child because they don't know the consequences so child nutrition is not a conscious priority.	C
	Community values on nutrition	The community shares the same values.	The whole community is living in the same way, I would say they don't have motivation to change.	C
		"Nutrition" is not a topic of conversation.	We never talk about nutrition, generally they don't care if children are fed enough or not.	C

Regarding the second category, “evaluation of nutritional improvement from an individual perspective,” two subcategories, [cultural factors] and [environmental factors], were generated (Table 2.4.2-1.). The results of the two subcategories are as follows.

1. [Cultural factors]

In the context of Nepal, <attitudes toward pregnant women> is considered a priority as interviewee B stated {pregnancy, I think is the only stage of life which is considered very important}. Also, <raising children in a large family> was found as a cultural factor in the country. Interviewee C described that {because we have this extended family cultures, family live with grandparents. So, there is good care of children. So, they can grow really well}.

2. [Environmental factors]

For the subcategory [environmental factors], two concepts, which are <environment in which the parents grew up> and <community values on nutrition>, were generated. It was found that parents raise their own children as they were raised. Interviewee C {There are so many things going on in their life, which they consider more important.} {they don’t take child nutrition as first priority, because that’s how they grew up, and if I survived, my child will also survive}. It was also mentioned {even if parents and grandparents love their children, that is how they grew up themselves, and that is how the whole community is raising their children, so, they don’t see any problem with how they are feeding their child}. <Community values on nutrition> is another factor which affects an individual’s health behaviors. As a community lives in the same way and shares same values, it was pointed out that people {don’t have motivation to change}.

2.5. Discussion

Based on the results, the improvement of the nutrition challenge in Nepal should be carefully judged, even though it has high reputation in previous studies. The interview results indicate that the improvement in nutrition challenges was indeed viewed positively by those who live/have lived in the country. Nevertheless, it is difficult to evaluate the country as a successful case in nutrition issues for the following two reasons.

The first reason is that Nepal has a variety of geographical and socio-cultural diversity. From a geographical perspective, lifestyles in the country differ greatly between the urban area (Kathmandu), the mountainous regions, and the southern part of the country. For instance, the hilly areas of the Central Nepal Development Region are considered to have relatively good child nutritional status within Nepal (Hasebe Yukiko, 2016). The interviews revealed that the people in the mountains still face challenges related to nutrition and diet, as they live subsistence lifestyles with limited food availability due to the harsh growing environment for crops. In addition, it was noted that the nutritional status of children in migrant labor households in Kathmandu may be poor, although Kathmandu is considered to have relatively good access to food. Therefore, it can be considered that the nutrition challenges in Nepal differ not only between urban and mountainous areas, but also within the same urban area, with actual conditions varying widely from region to region.

The country is also socio-culturally diverse, with 125 ethnic/groups in the country along with 123 native languages (Government of Nepal Ministry of Foreign Affairs, n/a). Although it was not discussed in the interview, ethnic and caste differences are reported to have different effects on children's health. Acharya suggests growth chart

assessments for height, weight, and subcutaneous fat thickness and gender for ages 2-6, with consideration for caste differences as it affects the child development (Acharya, Upadhyaya, & Kortmann, 2006). In fact, a study on the relationship between standard values for child nutritional status and ethnic and socioeconomic status in the hilly areas of the central region (Brahmin, Chhetri, Newar, Taman, and Tibetan) showed that the growth pattern of Taman children tends to be close to that of non-wealthy Brahmins and Chhetri until 7 months, but then were found to be lower than those of both (Hasebe Yukiko, 2016). Nepal has different food resources and lifestyles according to geographic distributions, as well as diverse cultures according to ethnicity, caste, and socioeconomic status. Accordingly, these diversities need to be taken into account to understand the nutrition status in the country.

The second reason is that it is questionable whether the health awareness of Nepalese people has changed in the process of improving the nutrition status in the country. Based on the interview, it can be considered that people's health awareness can be divided into three types: (1) those who have health-related knowledge and practice it, (2) those who have health-related knowledge but do not (cannot) practice it, and (3) those who do not have health-related knowledge and cannot choose healthy behaviors. First, it was revealed that people living with extended families recognize the importance of providing an adequate environment for child development. As stated in the interview, some families place the highest priority on the development of their children. These are people who both understand and practice the importance of child nutrition. Second, however, knowledge does not always lead to actions. Interviews revealed that people living in mountains have limited access to food, because of the unsuitable environment for growing crops. This indicates that even if people have adequate health-related knowledge, they cannot practice

it due to the limited environment. Third, there are people who neither have health-related knowledge nor healthy behaviors. As shown by the statement, “Even if parents and grandparents love their children, that is how they are grew up themselves, and that is how the whole community is raising their children,” some parents did not clearly understand the impact of malnutrition on child development and they raise their children as they grew up.

Furthermore, considering that the country has experienced the Nepalese Civil War (the civil war), among parents who survived the civil war, it could well be that they are unaware of the effects of a healthy diet on their bodies in the first place. Previous studies have pointed out that investment in education is one of the reasons why Nepal has achieved improved nutrition, by leading behavioral changes in fathers and mothers. However, as the current generation of parents may have been deprived of educational opportunities for about 10 years due to the civil war, it should be cautious to conclude that education had an impact on parental behavioral change toward health.

Given the socio-cultural and geographical diversity of Nepal, and the people’s health awareness, it is considered that a single evaluation of the improvement in Nepal’s nutrition issues may not fully reflect the actual situation of the country.

3. Second Study

The purpose of this section is to provide an overview of health-related education especially by comparing public and private schools in the country.

3.1. Background

In Nepal, education is considered as one of the factors that led to improvements in the nutrition challenge as it promotes health behavior change. However, the findings of the first study suggest that further research is required to understand the impact of education on improvement of nutrition in the country.

This is because despite a minimum of one year of ECED and 12 years of compulsory education in Nepal, there are differences in health behaviors among the Nepalese population. The first study revealed that health-related knowledge and behaviors can be divided into three categories in Nepal: (1) those who have health-related knowledge and practice it, (2) those who have health-related knowledge but do not (cannot) practice it, and (3) those who do not have health-related knowledge and cannot choose healthy behaviors. In addition, considering that people had limited access to education not only during the civil war but also in the post conflict situation, it seems difficult to surmise that education has contributed to improving nutrition issues. For these reasons, analysis of the health education system in Nepal was conducted to gain understanding of impacts of education on nutrition issues.

3.2. Objectives

The purpose of this section is to identify the impact of education on nutrition issues in Nepal by analyzing education, especially health education, in the country.

3.3 Methods

This section describes the methods used in the second study, which are literature review and textbook review.

3.3.1. Literature Review and Textbook Review

This second study used two methods of analysis. The first was a literature review. A literature review was conducted to gain a comprehensive understanding of the education system in Nepal. This literature review included academic papers, reports of government organizations, such as the Ministry of Education. In addition, as several development aid organizations have been implementing support in the education sector, reports of those organizations were also included in the review for understanding the actual field.

The second method was a textbook analysis of health education. Schools in Nepal can be categorized into two main types: public schools and institutional schools. Public schools are run by the government or public funds, whereas institutional schools are financed by tuition fees (Sharma, 2023). In this study, schools operated by the government or public are referred to as “public schools” and schools operated by tuition fees, not by the government, are referred to as “private schools.” Although both types of schools can be subdivided into narrow categories according to their characteristics, such as private schools that train the so-called elite of the wealthy and those that are operated similarly to a charity, this study will proceed with these two categories as a first step towards understanding Nepalese schools and health education, this study will focus on private and public school. For that reason, in this study, the terms “public school” and “private school” will be used consistently.

3.3.2. Procedure of Analysis

To understand the development of education in Nepal, the book “Conflict, Education and People’s War in Nepal” was closely reviewed. This 198-pages book by Sanjeev Rai describes the transition of Nepal’s education system, with a particular focus on its relationship to the civil war. Then, as further literature review, academic articles, policy papers in English and Japanese were reviewed to understand the education system in Nepal. In addition, to obtain an overview of educational policies, including the curriculum, published by the Ministry of Education, and the Curriculum Development Center (CDC) were investigated.

For the textbook analysis, health textbooks used in public schools and private schools were examined. Textbooks used in public schools are developed by the CDC and are available online in PDF version. The textbooks used in private schools were obtained through an acquaintance of the author who lives in Nepal. This acquaintance was asked about the availability of textbooks on health used in private schools. As a result, the acquaintance provided photographs of a portion of a health textbook used in the 5th and 8th grades that describes nutrition. These textbooks are written in English.

A comparison was made of the content in the available private school textbooks that is also covered in the public schools. The nutrition-related unit in the 5th grade is commonly covered in both public and private schools, in the “Food and Nutrition” unit in public schools and in the “Malnutrition” unit in private schools. Analysis of the contents of “Introduction,” “Carbohydrates,” and “Protein” were conducted because those were comparable among the units. The relevant sections of the two textbooks were transcribed. This was because the private school textbooks were obtained through

photographs, which made some parts difficult to read. Also, since public school textbooks were written in Nepali, the content translated by the translation application (Google Lens) Next, analysis was conducted focusing on the content of the textbooks, the number of terms used, and the commonality of the content of the textbooks.

3.4. Results

As a result of analysis, an overview of Nepal's nutrition-related policies was obtained.

3.4.1. Main Nutrition related Policies and Education in Nepal

By analyzing four documents: “School Health Promotion Programme: Medium Term Plan 2008 – 2012,” “National School Health and Nutrition Strategy, Nepal,” “Multi-Sector Nutrition Plan 2018-2022”, and “National Health Communication Policy 2012” the following were revealed.

The Second long-term Health Plan is being implemented almost in parallel with BPEP, from 1997 to 2017. This plan identified School health services as the key areas of health intervention. As for nutrition, The National Nutrition Policy and Strategy in 2004 was implemented to guide nutrition programs. Also, the Nepal Health Sector Program: Implementation Plan declared health communication as a cross-cutting issue. By this time, the education and health sectors are becoming more connected. In addition, thereafter in 2006, the School Health and Nutrition Programme stated the importance of physical, mental, emotional developmental and educational status of children. This trend continues in today's society. For example, The Agriculture Development Strategy (2015–2035) stated that food-related poverty would be reduced from 27.6% in 2016 to 13% in 2026 and 6% in 2036. In this way, health has been promoted in Nepal as a cross-cutting issue, with particular emphasis on its linkage with the education sector.

Table 3.4.4-1. Main Policies and Plans related to Nutrition and Education in Nepal

Names of Policies and Plans	Year	Main Points
Basic and Primary Education Programme Implementation Plan (BPEP)	1999-2004	Focuses on increasing access, especially for girls and disadvantaged children, and reducing overcrowding in grades 1 and 2. Creates an appropriate physical environment in schools by supporting the construction of toilets and drinking water facilities
National Health Education, Information and Communication Centre (NHEICC)	1993-today	The focal point of the Ministry of Health population for the planning, implementation, monitoring and evaluation of health communication activities.
Second Long Term Health Plan	1997-2017	School health services, diarrheal diseases, helminths, oral health, HIV, STIs, malaria, eye and hearing problems, drug addiction, and basic trauma were identified as key areas of health intervention.
The National Nutrition Policy and Strategy, 2004	CHD 2004	Intended to guide nutrition programs and activities in the health sector.
School Health and Nutrition Programme (Ministry of Health and Population, Ministry of Education)	2006	Develop physical, mental, emotional and educational status of children.
Nepal Health Sector Program: Implementation Plan (NHSP: IP)	2004-2009	Health communication was recognized and accepted as a cross-cutting issue for all health programs.

Nepal Health Sector Program II (NHSP II),	2010-2015	Prioritize and include public health promotion programs in health education and communication.
Multi-Sector Nutrition Plan (MSNP) (National Planning Commission)	2013-2017	Calls for nutrition-specific and nutrition-sensitive programs to address undernutrition.
		• Health
		• Education: Education plays a major role in improving the nutrition knowledge and behavior of future generations; the main nutrition programs of the MoE under the MSNP were the provision of mid-day meals in schools, improvement of water, sanitation, and hygiene (WASH) facilities in schools, and inclusion of nutrition topics in the curriculum.
		• Water and Sanitation
		• Agriculture and Livestock
		• Women Children and Social Welfare
	2012	• Local governance
National Health Communication Policy	2012	Maintain healthy lifestyles for the masses by promoting health services, programs, and healthy behaviors, preventing and managing disease, and increasing access to and utilization of health services.
Nepal's new 2015 Constitution (Government of Nepal)	2015	The basic right of all citizens to food and basic medical care was stated.
The Agriculture Development Strategy, 2015–2035 (Ministry of Agriculture Development)	2015	It stated that food-related poverty would be reduced from 27.6% in 2016 to 13% in 2026 and 6% in 2036

The Nepal Health Sector Strategy, 2016-2021 (Ministry of Health and Population)	2015	Nutrition was recognized as a multisectoral issue and related programs and activities under the following three action areas was included:
		Maintain comprehensive extension and use of services
		Programs to scale up
		Programs to assess and revise
Nepal Health Sector Strategy 2015-2020 (Ministry of Health and Population)	2015-2020	Aims to guarantee every citizens' access to basic health services as a fundamental right.
The Nepal Water Supply, Sanitation and Hygiene Sector Development Plan, 2016-2030 (MSWW)	2016	It highlights actions to enhance nutrition, such as frequent hand washing with soap, safe disposal of fecal matter, safe handling and disposal of drinking water, regular nail trimming, bathing, and tooth brushing

*Source: Created by the author based on “School Health Promotion Programme: Medium Term Plan 2008 – 2012” (School and Adolescents Health Unit, Family Health Bureau, Ministry of Healthcare & Nutrition, Health & Nutrition Division, & Ministry of Education,) , “National School Health and Nutrition Strategy, Nepal” (*National school health and nutrition strategy, Nepal*, n/a), “Multi-Sector Nutrition Plan 2018-2022” (Durbar, 2017), and “National Health Communication Policy 2012” (Ramshahpath, 2012).

Currently, education in Nepal is governed by the Ministry of Education, Science and Technology. According to the regular reports on the school sector by the Government of Nepal, the mission of the education in the country is to develop a capable, creative, and value-oriented citizens who would contribute to economic and social transformation of Nepal (Sharma, 2023). The school education system in Nepal consists of three parts: at least one year for preschool education, eight years of basic education (grades 1 -8), and secondary education (grade 9 – 12). The provision of free compulsory basic education and free secondary education is mandated by the Nepalese Constitution.

As for school education, there are mainly two types of schools: public schools (also known as community schools) and institutional schools (Protiva Kundu, 2023). Of the 36,032 schools across the country, 79.5% (28,659) are public schools while the remaining 21.5% (7,373) are institutional schools (Sharma, 2023).

Educational content also varies by type of school. Public schools are required to followed a government curriculum and use textbooks developed by the Curriculum Development Centre (CDC), whereas it is not necessarily in the case private schools (Protiva Kundu, 2023). In public schools, the curriculum is taught in the mother tongue or local language (Nepali), so that a different language of instruction than at home does not pose a barrier to the children's ability to learn (Government of Nepal, Ministry of Education, Science and Technology, 2022). As with physical infrastructure, quality education also requires an adequate curriculum, teacher's guides, children's materials, book corners, and reference materials for learning. Among the public schools, in total, 9,617 (55.1%) reported having teacher's guides, 8,706 (49.8%) had materials for children, 5,408 (31.0%) had a library corner, 7,683 (44.0%) had a printed curriculum, and 4,978 (28.5%) had reference materials (Sharma, 2023).

Working circumstances for teachers also differ between public and private schools. In public schools, salary scales for permanent teachers are similar to those of civil servants. Teachers employed in the private sector are only required to comply with the minimum wage stipulated in the labor law, have no standard salary structure. In addition, teachers in public schools are expected to be involved in extra-curricular activities, such as deputation during elections, which is not required of teachers in private schools (Protiva Kundu, 2023).

3.4.2. Nutrition Education in Public and Private Schools in Nepal

To begin, analysis was conducted on the content covered in the subject of health in the fifth grade. The results of the analysis are shown in Table 3.4.2-1. In the public schools, health is included in the subject, “Health Physical and Creative Arts.” The health-related contents are covered in six units: (Unit 1) Personal hygiene, (Unit 2) Environmental sanitation, (Unit 3) Food and nutrition, (Unit 4) Disease, smoking and drinking, (Unit 5) Safety and first aid, and (Unit 6) Exercise and physical exercise (shaded yellow in Table 3.4.2-1). These six units cover a total of 65 pages, with Unit 6 “exercise and physical exercise” having the fewest pages (8 pages) and Unit 2 “environmental sanitation” having the most pages (15 pages), for an average of 10.8 pages per unit. In private schools, health is included in the subject “Health Physical and Creative Arts,” which includes six subjects: (Unit 1) Human body, (Unit 2) Community health and mental health, (Unit 3) Malnutrition, (Unit 4) Diseases, safety and first aid, (Unit 5) Sexual and reproductive health, and (Unit 6) Physical education. and reproductive health (shaded green in Table 3.4.2-1.). These six units cover a total of 172 pages, with Unit 5 “Sexual and reproductive health” having the fewest pages (16 pages) and Unit 3 “malnutrition” having the most pages (38 pages). The average page volume for these six units was 28.6 pages.

Based on these findings, it is clear that the subjects related to health are covered in six units in both public and private schools, but the number of pages of texts covering it larger in the private schools. Commonalities in the content of the two textbooks included nutrition, diseases, first aid, and physical education. Meanwhile, as a difference, sanitation content is treated in two units in the public school textbook, whereas no unit in the private school corresponds to the same content. Also, although sex and reproduction, mental health, and the human body are covered in private schools, they are not found in public school textbook.

Table 3.4.2-1. Comparison of Subject Contents of Health Education (Grade 5)

	Subject Name	Contents		Page Volume
		Unit	Contents	Page
Public Schools	Health Physical and Creative Arts	Unit 1	Personal hygiene	12
		Unit 2	Environmental sanitation	15
		Unit 3	Food and nutrition	10
		Unit 4	Disease, smoking and drinking	11
		Unit 5	Safety and first aid	9
		Unit 6	Exercise and physical exercise	8
		Unit 7	Athletics and Gymnastics	14
		Unit 8	Casual, local and ball games	11
		Unit 9	Yoga	7
		Unit 10	Human body	19
		Unit 11	Printing, pottery and manufacturing	11
		Unit 12	Singing and playing	14
		Unit 13	Dance and acting	9
Private School	Health Physical and Creative Arts	Unit 1	Human body	31
		Unit 2	Community health and mental health	32
		Unit 3	Malnutrition	38
		Unit 4	Diseases, safety and first aid	37
		Unit 5	Sexual and reproductive health	16
		Unit 6	Physical education	18
		Unit 7	Athletics and adventure activities	22
		Unit 8	Games	30
		Unit 9	Yoga	17
		Unit 10	Art, line art and colours	16
		Unit 11	Printmaking, claywork and collage making	11
		Unit 12	Singing and playing instruments	19
		Unit 13	Dance and acting	16

*For public school textbooks, Google Translate was used to translate from Nepalese to English.

Next, the content of “Introduction,” “Carbohydrates,” and “Proteins” in Unit 3 of both textbooks were analyzed. The results are presented in Table 3.4.2-2. below. In the public school textbook, the “Introduction” has using 205 words, with only the title highlighted in red. There are no specific pictures illustrating this part. In the private school textbook, the explanation is given in 266 words with two pictures, and the important parts are explained in blue or red letters. As for the “Carbohydrates” part, it is explained in 39 words in public school and 144 words in private schools. The private school has more than three times as many words as the public school, and one picture is included. For the description of “protein,” the public school gives a 30-words explanation, compared to 114 words for the private school. Both include a single illustration, yet, there is no caption for the public school.

Table 3.4.2-2. Comparison of Subject Contents of Health Education

	Public School			Private School		
	Explanation in Textbook	Words	No. of Figure	Explanation in Textbook	Words	No. of Figure
Introduction	There are many types of food. Balanced food should be eaten for proper nutrition. How much food to eat depends on a person's age, body size and what they do. Those who work hard should eat more healthy food, while those who work less should eat less. More nutritious food than required is harmful for the body. Even if there is a lack of nutritious food, various health problems appear in the body. Food should be stored in a safe manner to prevent the nutrients from getting lost. There are plenty of nutrients in the foods around us. For nutrients, local foods should be mixed and eaten in a suitable way.	205 words	None	Nutrition is the process by which we consume food in order to support the life process. It is a biochemical and physiological process in which ingestion/digestion/absorption and egestion along with biosynthesis of various chemical substances take place. Ingestion is the process to consume food, digestion is the process to break down complex chemical in food into simpler chemical substances and then absorption takes place. Now egestion is the process to excrete the waste after digestion. Biosynthesis process includes the formation of various necessary body building micro compounds such as protein, lipid, amino acid, etc. Moreover, catabolism process that is carried out side by side in which complex compounds from food are broken down into a simpler form.	266 words	2 (Fig: Nutrition , Fig: Balanced diet)

3.1 Introduction to nutrition

We eat different types of food. Nutrients in such foods are used in the body with the help of the digestive system and is called nutrition. Food contains substances that are useful to the body, which are called nutrients. Nutrients give our body strength, growth and protection from various diseases.

Nutrients needed for the body are obtained only through a balanced diet. Fruits, green vegetables, grains, pulses, fish, meat, milk, curd should be eaten to get nutrients. Eating nutritious food and drinking enough water is beneficial for health.

For example, cellular respiration in which glucose is oxydised into energy (ATP = Adenosine Tri-Phosphate) along with carbon dioxide, and water.



(Glucose) (Oxygen) (Carbon dioxide) (Water) (Energy)

Therefore, nutrition is an important part of our life. It is important for our health and proper development. Better or utmost nutrition means utmost infant, child, youth, mother/maternal health, better immune system, safe pregnancy, safe delivery, low or no risk of non-communicable diseases, etc. It is related to prosperity and longevity of a person, family and community as a whole.

Balanced diet is the combination of different food items in an appropriate proportion so that the daily requirement of nutritional values is fulfilled. It provides all the necessary nutrients such as calories (glucose), protein, vitamins, minerals, roughage (edible fiber), etc. into our body. They are necessary to keep us physically active, mentally alert and socially adjustable.

Carbohydrates	<p>Carbohydrates</p> <p>Carbohydrates are obtained from grains like rice, corn, wheat, barley, and millet. Bread, rice, dhindo, chiura etc. are dishes made from grains. Carbohydrates are also obtained from sugarcane, potato, sugarcane, honey, etc. It gives strength to the body.</p>	39 words	1 (No caption)	<p>Carbohydrate</p> <p>Carbohydrate is a source of energy. We need energy to perform day-to-day activities such as playing, running, walking, reading, writing, etc. It is necessary for both physical and mental activities. More carbohydrate is required for people who work hard. It is the main source of energy. It is called an energy-yielding nutrient. Cells get energy in the form of ATP only when carbohydrate breaks up in the presence of oxygen. This process is called oxidation. Consumption of an excess amount of carbohydrate is not good because the excess amount is stored in the form of fat and deposited in the body. It causes obesity. It makes us weak and dull. It can further damage the pancreas and cause diabetes. Extra fat can be the cause of high blood pressure, heart attacks, etc. We can get carbohydrate from rice, wheat, potatoes, sugarcane, sugar, sweet potatoes, barley, etc.</p>	144 words	1 (Fig: Sources of carbohydrate)
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Protein	<p>Protein</p> <p>Eggs, fish, meat, milk, cheese, yogurt, almonds, all types of pulses and legumes are the main sources of protein. It helps with the growth and development of the body.</p>	30 words	1 (No caption)	<p>b. Protein</p> <p>Protein is a complex chemical compound of carbon, hydrogen, oxygen, nitrogen, etc. It is necessary for body growth and development. Protein is necessary for the formation of new cells and tissues. It increases the number of cells and tissues and helps in the recovery of wound. Therefore, protein is necessary for growing children, a pregnant woman, i.e., pregnant mother and for mothers after delivery. Extra consumption of protein in our food gets converted into fat and is deposited below under the skin and in muscles. It is also stored in the liver in the form of glycogen. We can get protein from meat, eggs, fish, liver, milk, cheese, butter, nuts, beans, soybeans, peas, etc.</p>	114 words	1 (Fig: Sources of protein)
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*Text coloring is as in the original text.

Finally, comparisons were made between the content covered in the three parts of are “Introduction,” “Carbohydrates,” and “Proteins” in Unit 3 in public schools and private schools. Each of the descriptions in the textbooks was extracted and these were listed in a table. Then, if the description appeared in the textbook of public school or private school, it was marked with a “●” and compared. The results are shown in Table 3.4.2-3. through 3.4.2-5.

Table 3.4.2-3. Comparison of the Contents of “Introduction to Nutrition”

Introduction to Nutrition		Public School	Private School
Nutritional Effects	The source of one's ability to work	-	-
	physically	●	●
	mentally		●
	as a member of societies		●
	Help in the development of the body	●	●
	Protects against disease	●	●
	Nutriton and health problems	●	
Processes in the body	It is a food intake process	-	-
	ingestion		●
	digestion	●	●
	absorption		●
	egestion		●
Foods and nutrition	It is found in a variety of foods	●	●
	Use of local foods	●	
	Storage of foods	●	
	Importance of balanced foods	●	●
	Examples of foods	●	
Function of Nutrients	Specific examples of nutrients		●
	Chemical term		●
	Nutrition is important for all generations		●

The “Introduction” part was explained from 18 different perspectives, including the fact that nutrition is necessary for human activity and the process of food digestion. Of these, both public and private schools explained that nutrition is essential for physical activity and development, and protects against disease. Both textbooks describe three points: (1) nutrients are digested by the body, (2) nutrients are found in a variety of foods, and (3) that a balanced diet is important. Public school textbooks mention 10 perspectives, whereas the private school textbooks explain 14 perspectives. Public school textbooks are characterized by references to the use of locally available food and to food storage methods. The private school textbook was supplemented with slightly more detailed explanations of nutrients that are necessary not only for the body, but also for mental health and for working as a member of society. It also mentions the process of food digestion in more detail and more from a chemical perspective than the public school textbook.

Table 3.4.2-4. Comparison of the Contents of “Carbohydrates”

Carbohydrate		Public School	Private School
Effects of Carbohydrate	The source of one's ability to work	●	●
	physically		●
	mentally		●
	People who need Carbohydrate		●
	Health problems of excess intake		●
Processes in the body	It is a food intake process	-	-
	Absorption after decomposition		●
	Accumulated as fat		●
	Chemical term		●
Types of carbohydrates	Examples of foods	-	-
	grains	●	●
	name of cooking	●	
	honey	●	

Regarding the “Carbohydrates” part, 13 perspectives are discussed, including the function of carbohydrates and the foods in which they are found. In both public school and private school textbooks, carbohydrates are mentioned as a source of activity and that they are found in grains. In public school, in addition to those, more specific examples, such as the name of the dish and the fact that honey also contains carbohydrates, are mentioned, and explained in four sections. In private schools, meanwhile, explanations are given from nine different perspectives. The textbook of private school not only mentions that carbohydrates are necessary for the body, but also that they are necessary for both body and mental health, and who should intake them. It also mentions that excess intake of it is harmful to the body and how it is digested by the body.

Table 3.4.2-5. Comparison of the Contents of “Protein”

Protein		Public School	Private School
Effects of Protein	The source of one's growth	●	●
	The source of one's development	●	●
	Forming new cells and tissues		●
	People who need protein		●
Processes in the body	It is a food intake process	-	-
	absorption after decomposition		●
	accumulated as glycogen		●
	Chemical term		●
Types of Protein	Examples of foods	-	-
	eggs, meat and fish	●	●
	dairy products	●	●
	nuts	●	●
	pulse	●	●

For the “Protein” part, the textbook provides explanation from 11 perspectives, which include that it is necessary for growth. In both public and private schools, explanations were given for the fact that protein is necessary for growth and that it is found in eggs, meat, fish, dairy products, nuts, and pulses. There were no explanations found only for public schools, and explanations were given from the six perspectives common to private schools. In the private school textbook, by contrast, the textbook also explained the processes of protein absorption in the body’s cells, using chemical terms. The private school textbooks cover eleven of these topics, and overall cover more areas than public school textbooks.

3.4.3. The Impact of the Civil War on School Education

During the civil war, schools were no longer a place of education but became recruitment centers and battlegrounds. The civil war, which began as resistance of Maoists against the government, resulted in the deaths of approximately 13,000 people,

including students and teachers (Sanjeev Rai, 2018). At the time of the civil war the schools were not “zones of peace” but rather “zones of war” with children and teachers being sent out to fight in the civil war (Shakya, 2011). School children and teachers in most parts of the country were forcibly removed from their schools to attend Maoist political training and mass rallies of the CPN-M (Pherali, 2012).

Not only the Maoists, but also the Nepalese army were sending young people under the age of 18 to military units. Children were assigned to jobs such as cooks who traveled with the military and prepared meals; porters who carried ammunition, food, clothing, medicine, and other supplies; and spies who posed as members of the opposing armed group to gather information from teachers, community leaders, and others to provide to the Maoists (Kohrt & Harper, 2008). In rural areas, it is estimated that 3,000 teachers were forced to leave, which affected an estimated 100,000 students directly (Thapa and Sijapati 2004). Schools were often taken over as shelters for both armies preventing teaching and learning there (Watchlist 2005).

As for private schools, these were targeted by the Maoists because they provided English-medium education for children from socially privileged groups and were run as a business. The Maoists aimed to end the two-tiered education system, they demanded changes in the private school’s management, for instance, reduction of school fees, the removal of references to the monarchy at school events, including national anthem (Pherali, 2012). Schools that did not comply with their demands were often subjected to violent attacks on their buildings and infrastructure (Pherali, 2012). In the post-conflict Nepalese society today, it is recognized that children should be protected from natural disasters, infectious diseases, conflict, and violence (Government of Nepal Ministry of Education, 2016).

3.5. Discussion

Based on the above results, the following two points can be mentioned. The first discussion is that the differences between public schools and private schools have increased as peace progressed from the time of the civil war as shown in Figure 3.5.1-1. below.

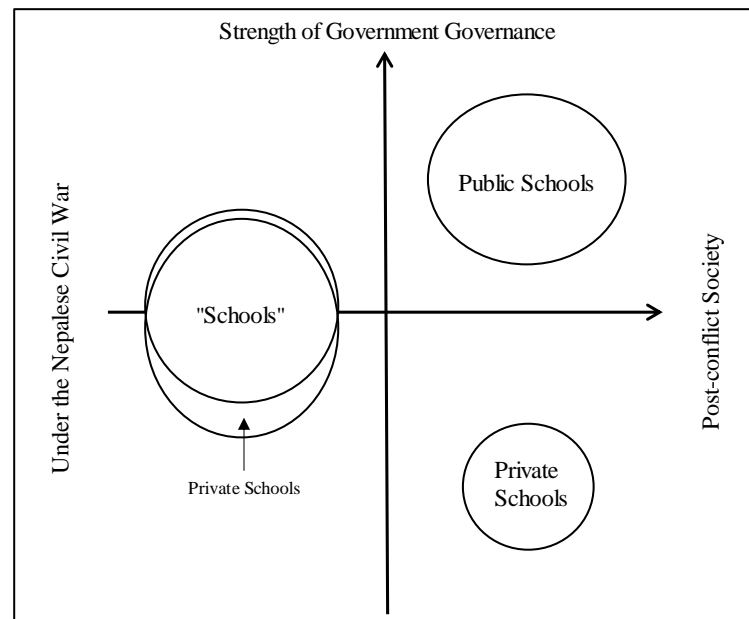


Figure 3.5.1-1. Government governance and schools before and after the civil war

During the civil war, schools, regardless of type, were involved in battle. Both public and private schools did not function as a place for education and did not protect both children and teachers from the war. Under such a situation, teachers and children were forced to attend military activities, which directly affected educational opportunities for children. This conflict and political instability have severely weakened educational governance, leading to politicization of educational decisions, corruption, and loss of professional motivation for teachers (Pherali Tejendra, 2017). In terms of being targeted

for attack during the conflict, both public and private schools were treated the same. In other words, as shown on the left side of Figure 3.5.1-1., there is less difference between public and private schools under conflict conditions, and they could be considered as “schools” in one category.

As social conditions became more peaceful after the civil war, the differences between public schools and private schools seem to become more apparent (the right side of Figure 3.5.1-1.). Today, public schools are government-funded and required to follow government curriculum. In contrast, private schools are allowed to provide education based on their own curriculum, instead of receiving funding from the government. Public schools and private schools differ in teaching language and educational content. For example, as shown in Table 3.4.2-1., there are differences in the amount and content of nutrition-related education in the textbooks among public schools and private schools.

Given this background, the function of schools in Nepal varies according to the social conditions of the time, which means that the impact of education on nutritional improvement also varies from period to period. Under the civil war, schools did not function as places of education, and children were forced to leave school or engage in military activities. For this reason, it is difficult to believe that schools contributed to the improvement of children’s nutrition under the civil war. Based on the aforementioned results, it is possible that interest in health education has gradually increased in Nepal as the conflict has ended and peace continues to prevail. It would be difficult to say that schooling as well as students have returned to normal immediately after the civil war ended. It can be considered that health education in the country has not been divided into the two poles of the civil war and post-conflict societies, but has gradually transformed as social conditions have changed.

The second discussion is that people may not have high expectations of schools, the education system because of the experience of the civil war. In Nepal, the social and political instability caused by the civil war may have led to distrust of public schools, especially those under government control. As trust in educational institutions improve educational outcomes (Niedlich, Kallfaß, Pohle, & Bormann, 2021), if trust in the school is low, its educational benefits may be limited.

In Nepal during the civil war, schools did not function, and in that sense, schools, regardless of their type, were homogeneous. After the end of the civil war and as peace progressed, it became apparent that there were differences in education between public and private schools. In addition, it was indicated that people may have less trust in schooling due to the effects of the civil war.

4. Third Study

The purpose of the third study is to find out what kind of values people have toward schooling in the country.

4.1. Background

School-based health play an important role in promoting lifelong dietary practices by providing the skills, social support, and environmental reinforcement (Guidelines for school health programs to promote lifelong healthy eating.1997). In Nepal, however, the country experienced a decade of the civil war when schools did not function adequately as places of education.

Trust in educational institutions have positive effects such as reduction of problem behaviors of students and improve educational outcomes (Niedlich, Kallfaß, Pohle, & Bormann, 2021). Considering this historical background of the country, people may not feel that public schools are particularly meaningful. When values and expectations of schooling are low, even if access to and quality of education are improved, the impact will be limited. For this reason, it is essential to understand the expectations and values of schooling for people in Nepal to promote nutrition improvement through education.

4.2. Objectives

The aim of this section was conduct in-depth research to identify Nepalese people's view of schools by conducting interviews. While the influence of education in improving nutrition is considered significant, it is possible that Nepalese people do not have a high level of trust in schools.

4.3. Methods

Details of the interviews conducted in this third study as follows.

4.3.1. Interviewee

To understand the Nepalese people's view of school, which was the purpose of the study, it is necessary to seek the cooperation of people who are familiar with the local situation, such as those who were born and raised in Nepal or have stayed in Nepal before. Accordingly, the author asked the interviewees from the previous interview to cooperate with this study in the interview again. Since the interviewee had already participated in the previous interview while understanding the background and purpose of the author's research, it seemed that they would be suitable for this interview as well. As a result, the author was able to obtain the cooperation of one Nepali (Interviewee C), who had cooperated with the previous interview in the first study.

4.3.2. Methods of Interview

The interview was conducted in September 2023. The interview was conducted online and recorded with the interviewee's permission. Specific details are provided in the table below.

Table 4.3.2-1. Methods of Interview

Date	Interviewee	Method	Language	Time
September 10, 2023	Interviewee C	Online Interview (via Zoom)	English	About 40 minutes

The interview was recorded by video and written transcripts to avoid possible technical failures during the recording process. The interview was conducted in English and lasted approximately forty minutes.

The purpose of this interview was to clarify how Nepalese people view school, including its role, its significance, and their trust in school education. It was considered

that a semi-structured interview would be appropriate to achieve this objective, the interviewer (the author) asked, “What do you think about going to school in your country?” as mandatory question. The interviewer also asked interviewee C to talk freely about how the interviewee feel about school education. According to the previous research above in the second study, the environment surrounding education in Nepal differs between public and private schools. For this reason, the interviewer was careful to ask what kind of values and images the interviewee has regarding public and private schools.

4.3.3. Procedure of Analysis

To understand how local people view school education, data analysis was conducted in reference to the grounded theory approach. In this study, four procedures were used for data analysis.

First, a verbatim report of the interview was prepared. Second, narratives related to interview objectives were selected. To be specific, the following four types of data were selected as categories from the verbatim data: the part that related to “impression of schools,” the part related to “teachers’ views on schools,” the part describing “incentives to attending schools,” and the part that describes the “difference between private and public schools for school choices.” Third, subcategories and concepts were generated. Then, concepts were generated by compiling similar data related to four categories. Also, subcategories were generated by examining the relevance of those concepts. Based on the generated concepts and subcategories, each of four categories names were refined as well. Fourth, the relationships between generated concepts, subcategories, and categories were examined and summarized in a table. The detailed results are shown in through Table 4.4.1-1. to 4.4.4-1. in the following section. In this study, the category, subcategory,

concept, and comments by interviewees are shown as follows: “ ”, category; [], subcategory; < >, concept; and { }, comments by interviewees.

4.4. Results

In this study, 13 <concepts> and seven [subcategories] were generated based on the method described above. By organizing the <concepts> and [subcategories], the Nepalese views of schools could be divided into four “categories.” (1) “impression of school education,” (2) “teachers’ view of school education,” (3) “incentives to attending schools,” and (4) “difference between private and public schools.” Five <concepts>, two [subcategories] were categorized as “category 1,” two <concepts> and one [subcategory] were categorized as “category 2.” “Category 3” consists of four <concepts> and two [subcategories]. For “category 4,” two <concepts> and two [subcategories] were generated.

4.4.1. Category 1: Impression of Schools

Table 4.4.1-1. Category 1: “Impression of School Education”

[Subcategory]	<Concepts>	Meanings	{Comments by interviewees}
			*Note: Text in parentheses is added by the author.
Public schools	Economic background	Public schools are for lower income families.	Public school or government school, which is considered as a not very good education system in Nepal. <u>The quality of education is not very good so it's a concept that public or government school are for people from a poor economic background.</u> So middle class family or upper-class families they prefer to send their children to private schools.
			Generally public schools which are free of course, are for lower economic families and students do not have to pay anything. (For private schools,) it depends on whether it is a very small schools or a very big school, and so the fee for the school also depends on what kind and how big the school is.
	Limited educational resources available	Public schools have a uniform curriculum with limited materials.	If it is a public school, the same textbook is used throughout the country and the curriculum is the same, and usually in the government school the language of teaching would be the Nepali language.
			In Nepal, <u>it is difficult to find teaching materials in Nepali, there is not much variety,</u> which means people will either <u>use the curriculum of government schools,</u> or if its in private schools, would use an English curriculum with foreign books.
	Less government attention	The government is not eager to invest in public schools.	Over the year, for some reasons, the government is not paying much attention to improvement of public school, which means, let's say, the buildings are not very advanced, the facilities are not very good.

Private schools	Diverse educational contents	Curriculum in private schools is diverse.	The curriculum is not the same, again, even in private school they are different organization.
			PABSON is an organization of private schools in Nepal, and so nowadays there are several similar organizations that opened and the school chooses to join the organization which means that curriculum within the organization (is followed), maybe also the study style within the organization would be similar. <u>Another branch, another organization, another umbrella, the school they have would be similar.</u>
			In Nepal, it is difficult to find teaching materials in Nepali, there is no variety, which means people will either use the curriculum of government schools, or if it's in <u>private schools, (they) would use English curriculum with foreign books.</u>
	Quality education	Private schools offer a higher quality of education because students can learn in English.	The teachers in public schools, their English language background is not that strong, (but in private schools, the) teaching method is in English, so there is a gap between public and private, where people from public school, because the students and the teachers are not very fluent in English, but from private schools, the teachers have advanced level of English and students also have a good level of English, <u>so the way they see the government school is not very good, and over the years it was built up, so that now it is visibly clear that people who attend the government schools are (from) a poor economic background.</u>

As for the first category, “impression of School Education,” two subcategories were generated (Table 4.4.1-1.). The results for each of the two subcategories as follows.

1. [Public schools]

[Public schools] are recognized as a place for lower <economic background> because of its <limited educational resources available> and <less government attention>. Since the {student does not have to pay anything} in public schools and it is {considered not very good education system}, public schools are seen as a place {for poor economic background}. The underlying factors of private school preference was <limited educational resources available> in public schools. In public schools, {the same textbook is used throughout the country and the curriculum is the same}. In addition, <less government attention> to public schools was revealed. It was stated that {over the year, for some reasons, the government is not paying much attention to improvement of public school}.

2. [Private schools]

[Private schools] are recognized as offering <diverse educational contents> with <quality education>. With <diverse educational contents>, private schools offer <quality education>, especially education in English. Teachers in private schools are recognized to {have advanced level of English and students also have a good level of English}. For this reason, {the way they see the government school is not very good, and over the years it has built up, so that now it is visibly clear that people who attend the government schools are from a poor economic background}.

4.4.2. Category 2: Teachers' View on Schools

Table 4.4.2-1. Category 2: "Teachers' View of Schools"

[Subcategory]	<Concepts>	Meanings	{Comments by interviewees}
			*Note: Text in parentheses is added by the author.
Working environment	Job security	Teaching position in public schools is secure compared to that in private schools.	Usually when it's a government school, the teacher would be a government official, which means <u>most of the time they have a permanent job, while if it's a private school, most of the time, because it is a private school, the teacher's job would not be permanent.</u>
			A private job is not as secure as a government job
			Because, in government schools, teachers have more facilities, pension system, job security, higher salaries, <u>job is relatively easier than in private schools, so because of that security, teachers prefer government schools,</u> but it is a difficult process because they have national exam, they have to pass the examination and then get the job,
	Monitoring of teachers' performance	Private school teachers are keener in quality education because they are monitored.	and there is always a higher authority keeping an eye on them (= teachers), do this, you have to do this, <u>it's like consistence pressure, while there is no pressure in government schools</u>
			Also, the teacher's job is permanent, nobody is monitoring them for the quality of education they are providing, <u>they have this attitude that no one have the right to take me off this job,</u> the teachers themselves are laid back.... <u>they are not active in providing quality education.</u>

For the second category, “teachers’ view of schools,” one subcategory [working environment], and two concepts which are <job security> and <monitoring of teachers’ performance> were generated (Table 4.4.2-1.). It was found that <job security> differs between public and private schools. Teachers in public schools, {most of the time they have a permanent job, while if it’s a private school, most of the time, because it is a private school teacher’s job would not be permanent}. As state, the {job is relatively easier than at private schools, so because of that security, teachers prefer government schools}, public schools are the favored place to work. Differences were also found between public schools and private schools in terms of <monitoring of teachers’ performance>. Teachers in private schools are always monitored by a higher authority which was described as {consistence pressure} in the interview. In contrast, teachers’ performance is not monitored in public schools, which leads to have {an attitude that no one has the right to take me off this job} and being {not active in providing the quality education}.

4.4.3. Category 3: Incentives to attending schools

Table 4.4.3-1. Category 3: “Incentives to Attending Schools”

[Subcategory]	<Concepts>	Meanings	{Comments by interviewees}
			*Note: Text in parentheses is added by the author.
Incentives to attend public schools	Economic burden	Because of free education/program	Generally, one incentive to go to public school (for lower class) is, because the education is free.
			there are different programs, let's say there is distributing clothes to the children, or everyday providing food to students, there are nutrition programs where students are provided at least, let's say lunch for a day which means giving encouragement to send their children to school, just because they get one time food for free.

	Chances of obtaining scholarship	Because of the likelihood to get a scholarship, some students transfer to attend public schools	for us usually it's to one to twelve, usually two schools, sometimes one. So we don't have, so after elementary school, students do not change their schools, so usually if I think about the school, it's from class one, elementary school first year to class ten which means high school first year. and after class ten there is "one big exam" we call it School Leaving Certificate or nowadays its change the name SEE. It is considered a big exam to graduate from junior high first year which we call class ten and after class ten, sometimes some schools have opportunities to continue to class eleven and twelve, which means high school second year, high school third years, sometimes they have to change the school, usually they (students in private schools) change the school (to public schools), there are separate schools just for high school second year and third year and we call it college. Since the SEE is the national exam, everyone gets the same questions, so this time they will have to register with a government school and they have the certificate of SEE from the government schools, so later on, when they apply for the scholarships in high schools or university, <u>they can show the government certificate so that they can have higher a chance of having a scholarship or getting a government job.</u>
Incentives to attend private schools	Advantage in finding a job	Because Private schools have a better chance of getting a job.	<u>Definitely, private schools have the upper-hand, one basic reason is that public schools are not facilitated, for example language, student who passes government school, they do not have good score in English language, which is now required to some extent to finding a job.</u> It's usually preferred if people have at least some understanding of English language, because when you compare people who only speak Nepali language, in that case, private schools have a slight upper hand.

			<p>Second, the government schools may or may not have various facilities, let's say computer labs, so in some cases, there are computers but there may not be teachers who are qualified enough to teach students how to use computers. So they may or may not have knowledge about computers, so when applying for the job, computers are necessary. <u>To get a job it is necessary to use computers, in that sense, it would be a disadvantage (in public schools).</u></p>
	More facilities in private schools	Because of better school environment.	<p>Another example is that private school usually have sport club, students are exposed to many sports, while the government schools, most of the cases they do not have separate sport clubs or sport teachers</p>

The third category “incentives to attending schools” consists of two subcategories [incentives to attend public schools] and [incentives to attend private schools] were generated (Table 4.4.3-1.). The results of the two subcategories are as follows.

1. [Incentives to attend public schools]

One of the reasons why public schools are chosen was because of its <economic burden>. Especially for families in lower economic classes, free education is one incentive to attend. As pointed out that {there are nutrition programs where students are provided at least, let’s say, lunch for a day which means giving encouragement to send their children to school, just because they get one time food for free}, it was also found that another program could be the reason to go to schools}.

2. [Incentives to attend private schools]

Private schools are chosen because of its <advantage in finding a job>. As shown in the statement {student who pass government school, they do not have good score in English language, which is now required to some extent to finding a job}, attending private schools to obtain higher English skills. It was also stated that public schools are not equipped with computer facilities and that there are no teachers with computer skills. Accordingly, it was pointed out that {to get a job, it is necessary to use computers, in that sense, it would be the disadvantage} in public schools.

4.4.4. Category 4: School Choices

Table 4.4.4-1. Category 4: “School Choices”

[Subcategory]	<Concepts>	Meanings	{Comments by interviewees}
			*Note: Text in parentheses is added by the author.
No choice	Access to school	Because Public schools are the only option.	Sometimes, <u>they don't have a choice because the region is out of reach, very difficult to reach, in hilly place and people have to walk far, in that case private school might not be a choice.</u> There might be any government school, the <u>government school is the only option.</u> In that case, they might be happy and motivated to go to school.
Schools as places for education or work	Differences in views of school between parents and teachers	Public schools are preferred as places for education, but teachers prefer private schools to work.	<u>In terms of students, the preference is private schools, but in terms of teachers, the preference is the government schools, not private schools</u>
			<u>So, if I'm a teacher in a government schools, I'm so happy with my job but I would never want my children to study at my school, in the government school</u>

The fourth category was “school choices” with two subcategories, [no choice] and [schools as places for education or work] (Table 4.4.4-1). Each subcategory consists of one concept.

1. [No choice]

It was pointed out that sometimes, especially in mountainous areas, public school is the only option because <access to school> is limited. This finding is based on the statement {sometimes, they don't have a choice because the region is out of reach, very difficult to reach, in hilly place and people have to walk far, in that case private school might not be a choice. There might be any government school, the government school is the only option. In that case, they might be happy and motivated to go to school}.

2. [Schools as places for education or work]

The interview revealed that there are <ifferences in the view of school between parents and teachers>. As the interviewee said {if I'm a teacher in government schools, I'm so happy with my job but I would never want my children to study at my school, in the government school}, public schools are preferred in terms of working environment, whereas students may prefer to attend private schools.

4.5. Discussion

Based on the results above, the following two points can be stated. First, unless the gap in education between public and private schools narrows in Nepalese society, health disparities will not improve either. Interview revealed that public schools are perceived as “places for low-income families.” This was due to, for instance, the diversity of curriculum and education at private schools. In fact, the educational systems of private and public schools in Nepal are different. Looking at nutrition-related subjects as an

example, private schools were more likely to have broad contents covered in textbooks. In terms of learning environment, parents tend to choose private schools whenever possible, as private schools are better equipped.

In contrast, it was found that public schools were preferred to private schools as a place to work. In public schools, once employed as teachers, they are not monitored and have less fear of losing their jobs. In private schools, however, teachers are constantly evaluated for their performance, and if they perform poorly, they could be fired. For this reason, it is clear that public schools are preferred for job security. This situation reinforces parents' choice of private schools. Public schools continue to be perceived as places for low-income families because of their uniform curriculum and uninspiring teachers. Private schools, however, offer more content, a better learning environment, and teachers are constantly evaluated, so that students prefer to choose private schools as long as their financial resources allow.

Under these circumstances, it can be said that the value of private schools is being re-enforced: private schools are superior. As the second study revealed that the content of education itself differs between public and private schools, the health education received differs depending on which school a student attends.

Second, Nepal may have lost the opportunity to improve nutrition through schooling that could have been achieved with strong government governance in public schools. Public schools in Nepal have lower expectations than private schools and parents try to send their children to private schools as far as possible. In addition, public schools do not function to control teacher performance. In other words, if expectations of public schools were high and the government had been able to adequately regulate their educational

content, it would have been possible to contribute to improved nutrition for the children attending these schools.

In Sri Lanka, one of Nepal's neighboring countries, implementation of the School Health and Nutrition Program (SHN) has been making great achievements. According to Drake et al., in Sri Lanka, the program was implemented under strong policy and targeted measures by the Ministry of Education, the Ministry of Health and the Health Coordinator in collaboration with the Ministry of Education to address the challenges of malnutrition and mental health among school-aged children. This SHN aimed to involve all stakeholders with the development of a policy for a legal structure to promote health in the school community. The SHPP was an inclusive program for the education and health sectors, which included several interventions such as school health screening, school feeding especially in rural areas and small schools, and health education. One of SHN's characteristics is the integration of health education into general education. Within this framework, health is integrated into broader education as the acquisition of life skills. For example, self-awareness, decision-making, social skills, are taught beyond health subjects. In addition, teaching manuals have been developed to enable teachers to help children acquire health and life skills rather than merely acquiring knowledge, and so that the children can obtain the necessary skills through the teachers' classes. Another feature is the existence of "school health clubs," not only at the national level, but also at the school level. In this "school health club" initiative, all schools and teachers are responsible for cleaning hand washing stations, ensuring drinking water, and managing the nutritional status of children. It also helps the students themselves to acquire health behaviors such as the prevention of non-communicable diseases and risk factors on their own. In this way, the positive impact on children's health in Sri Lanka has been attributed to the joint

implementation of strong, comprehensive, cross-sectoral measures by education and health (Drake et al., 2014).

Meanwhile, Nepal had a period of time during the civil war when the school system stopped functioning. The decade-long conflict has worsened relations between citizens and the state (Pherali Tejendra, 2017). Moreover, although several policies related to education and health are in place today after the end of the civil war, the governance is not strong. As interviews revealed, people do not have high expectations of public schools, which have weak school monitoring and evaluation systems. In addition, the diversification between public and private schools has increased, with private schools having more and better quantity and quality of health education. As such, Nepal has missed an opportunity to promote nutrition improvement through school education, especially in public schools, even though it should have been able to achieve it.

As such, in Nepal, education in private schools is perceived to be superior, and the actual educational content is extensive in private schools than in public schools. Accordingly, the health-related knowledge gained varies greatly depending on whether one attends a public or private school. In addition, with a weak school monitoring system in public schools, the country may have missed an opportunity to accelerate nutritional improvement through schooling, even though it could have achieved it.

5.1. Conclusion

This paper has conducted three studies to analyze the background of Nepal's improved nutrition challenges which have highly regarded in previous research (Conway et al., 2020a). The results of three studies in this study were understood comprehensively using the transtheoretical model (TTM). The TTM describes the process of people's behavior change in five stages: precontemplation (people who are not willing to change), contemplation (the readiness stage), preparation (people who are planning for behavior change), action (people who have changed their health behavior), and maintenance (people who have modified their health behavior). Using this TTM, the results of the three studies conducted throughout this study can be organized, as shown in the following Figure 5.1-1.

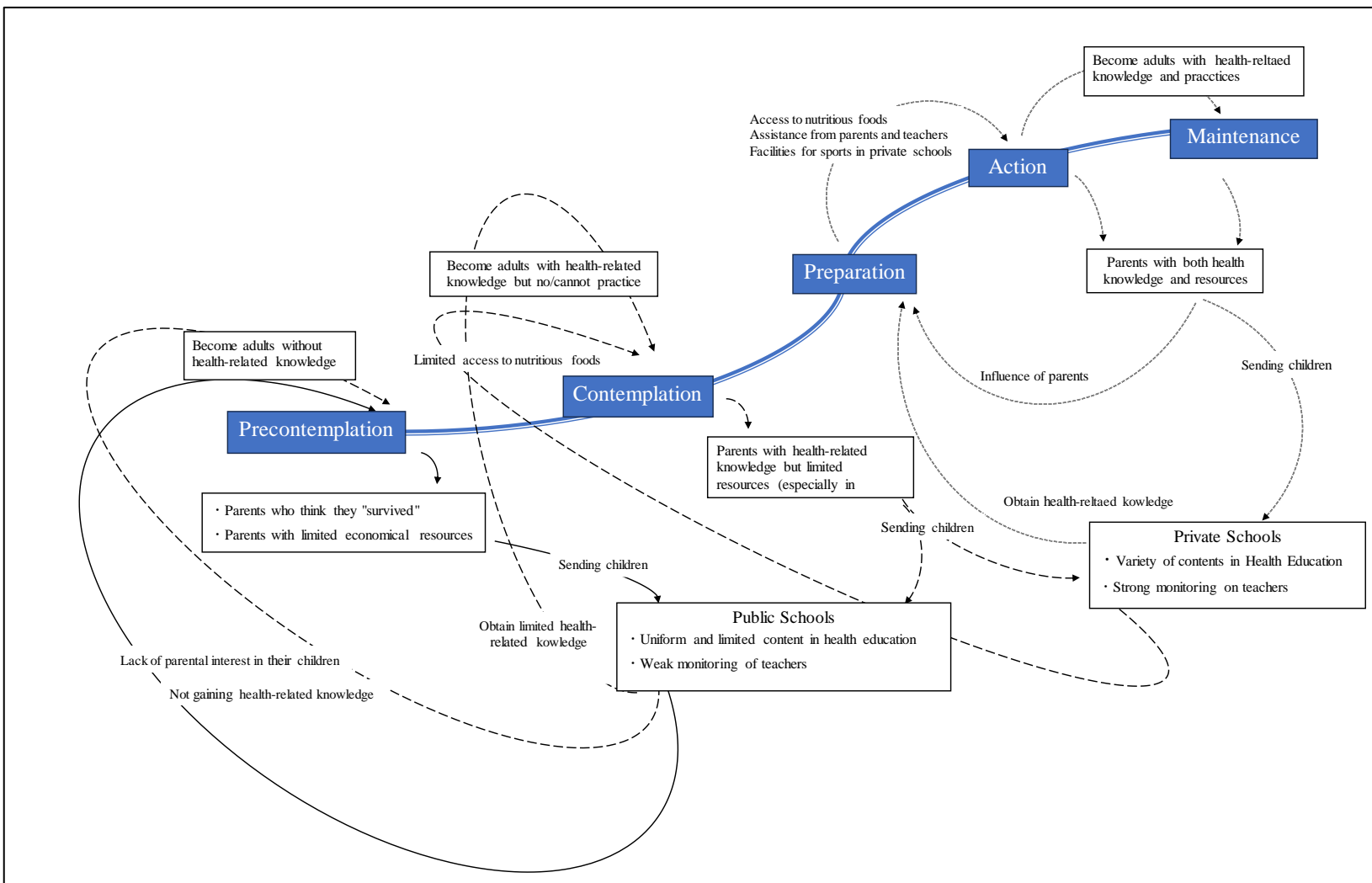


Figure 5.1-1. Conceptual Diagram based on TTM

First, children from families with parents who lack adequate nutritional knowledge, which is the precontemplation stage, are more likely to reach adulthood without having acquired adequate health knowledge as well. In Nepal, it was revealed that the impact of nutrition on health may not be fully recognized. The interviews in the first study revealed that some people do not have a high concern for nutrition because they are able to live (stated as “survive” in interview) without any special attention to nutrition. These parents can only raise their children as they were raised. They often do not have the capacity in their daily lives to make their children’s health their priority. Children from such families are more likely to attend public schools that do not charge school fees. However, as shown in the second study, the amount and content of health education in public schools is limited compared to that in private schools. In addition, monitoring by the government is weak in public schools, and teachers are not evaluated on their teaching. Furthermore, as the third study showed that people’s expectations for public schools are not high, it is questionable whether parents and children are motivated to attend school in such environment. Also, the health of the children is not a priority for parents. Given this situation, children of parents who do not have sufficient health-related knowledge will attend public schools yet will not achieve behavioral change due to limited health education. As a result, children with parents in precontemplation stage will remain in the precontemplation stage themselves as well.

Second, children with parents in the contemplation stage will remain in the precontemplation or contemplation stage and will be unable or unwilling to practice behavior change. In the context of Nepal, people living in mountainous areas are likely to be considered as in the contemplation stage. Health education in public schools is more limited than in private schools, but not completely absent. Interventions are also

implemented in public schools to improve children's health. So, some parents who have graduated from public schools are probably concerned about nutrition and health, and some may actually be willing to take action. However, the natural environment, especially in mountainous areas, is harsh and the crops that can be grown are limited. Because of this, some parents are unable to put their nutritional knowledge into practice, even when they have actually learned about it. Children from these families, who learn about nutrition in either public or private schools, grow into adulthood without being able to put it into practice because of the environmental factors. In addition, if children attend public schools, it is quite possible that health education there is inadequate, and children may reach adulthood without gaining any health-related knowledge. For this reason, inadequate health education in public schools is likely to cause some children to drop from the contemplation to the precontemplation stage. Based on the above, children with parents in contemplation stage cannot or reluctant to practice behavior change and will not be able to move to the preparation stage.

Third, children who have parents with health-related knowledge and practice are more likely than those without such parents to acquire healthier behaviors. In the Nepalese context, this refers to people who raise their children in large families, including extended family members, with emphasis on the health of the children as the priority. Many of these families live in urban areas, in contrast to those in mountainous areas. They have access to nutritious food, and are more concerned about their children's health. These parents are at a stage where they already have knowledge about health-related knowledge and are practicing or maintaining it. It is quite possible that the children in these families have received home education in health from their parents. Accordingly, children from such families would have the advantage of developing healthy behaviors at

the preparation stage in the first place. In addition, children from such families have access to health education with more content in private schools than in public schools, under the supervision of teachers who are rigorously evaluated. In other words, even if they have not received much influence from their parents, they can be said to be in the preparation stage through health education in private schools. Children who grow up in these home and school environments will grow up to adulthood with health education from parents and teachers. They will also have access to well-equipped school facilities so that they can practice and maintain health related skills. In other words, children with knowledgeable and resourceful parents can acquire and maintain healthy behaviors from the preparation stage to the action or maintenance stage with the help of health education in private schools and parental support.

Based on the above three perspectives based on the TTM, it can conclude that although there have indeed been some successes in improving people's nutrition in Nepal, there are still challenges to be addressed. Specifically, weak government governance is one of the key challenges in relation to nutrition and health behaviors. As noted earlier, in Nepal there is an educational disparity between public schools and private schools. Although schools are effective platforms for disseminating health knowledge to children, the Nepalese government does not seem to be able to maximize its effectiveness. In particular, while the government was unable to control schools during the civil war, private schools have been able to develop freely without government control in the society since the end of the civil war. Instead of not receiving funding from the government, private schools are free to incorporate their own curriculum. In contrast, health education in public schools was quite limited compared to that in private schools, and its content was uniform throughout the country. In public schools, the job security of teachers is

stable, and the job is perceived as easier than in private schools. Because of this, teacher motivation in public schools is not high. These findings suggest that if the Nepalese government can improve schooling and teachers with stronger governance, it can contribute to improved nutrition for children from the most vulnerable groups, families without health knowledge and without resources. As in the case of neighboring Sri Lanka, the health status of students can be expected to improve under a strong cross-sectoral policy between education and health.

In addition, government intervention is needed for people who have limited access to food for economic or living condition reasons. Particularly in mountainous areas, people's access to food is limited due to the harsh environment for growing food. It is likely that even if people in these mountainous areas have acquired health-related knowledge, they may not be able to put it into practice. Although it was not possible to go into detail in this paper, government-led efforts to improve agricultural technology and food distribution infrastructure, for example, would increase food choices for people living in mountainous areas. In this sense, stronger governance by governments is needed.

5.2. Limitation

A limitation of this study is small number of interviewees. It was not possible to interview persons with public school experience in Nepal or persons living in mountainous areas. Interviews in this study significantly contributed to understand the Nepalese context, including the values of the local people. However, these interviewees were limited to a small number of people from Kathmandu who had experience in private schools. More interviews need to be conducted with a larger number of people to examine how health education is provided in public and private schools and what kind of educational activities are being provided.

Another limitation of this study is limited number of literatures reviewed. Although the study revealed that Nepal is rich in diversity in terms of geographic distribution and ethnicity/caste, it was not possible to conduct a detailed analysis of each of these individually. It was also noted that schools in Nepal are divided mainly in public and private schools. However, both types of schools can be sub-divided by their characteristics. As for further study, in-depth analysis of ethnic/caste, geographical distribution, and health education by school types would be necessary in a more individualized and specific context.

6. References

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