

**Exploring the Knowledge and Practice of Face Cleanliness to Ameliorate  
Trachoma as a Component of SAFE Strategy in the Primary Schools of Lay  
Gayint District in South Gondar Zone, Amhara Region**

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PRIMARY SCHOOL AT *LAY GAYINT DISTRICT* IN GONDER, AMHARA REGION**

**BY**

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### **DECLARATIONS**

This is certifying that the thesis entitled “Exploring the Knowledge and Practice of Face Cleanliness to Ameliorate trachoma as a component of SAFE strategy in primary schools at Lay Gayint district in South Gondar, Amhara Region” for partial fulfillment of Masters of Social Work has been submitted to Addis Ababa University School of Social Work for Examination with my approval as a University MSW Student.

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AMHARA REGION**

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## Table of Contents

DECLARATIONS .....	iii
Acknowledgment .....	v
List of table .....	viii
List of Figures .....	viii
List of Abbreviations .....	ix
Abstract .....	x
CHAPTER ONE .....	1
1. Introduction .....	1
1.1. Backgrounds of the study .....	1
1.2. Statements of the problem .....	2
1.3. Research Questions .....	6
1.4. Objectives .....	6
1.4.1. General Objective .....	6
1.4.2. Specific Objective .....	6
1.5. Significance of the Study .....	7
1.6. Scope of the study .....	8
1.7. Limitations of the study .....	8
1.8. Operational definitions of terms .....	9
CHAPTER TWO .....	10
Review of Related Literature .....	10
2.1. Trachoma as a global public health problem .....	10
2.2. Cause and Transmission of Trachoma .....	11
2.3. Epidemiology of Trachoma .....	12
2.4. The Prevalence of Trachoma Disease in Africa .....	13
2.5. The Prevalence of Trachoma Disease in Ethiopia .....	14
2.6. The SAFE strategy for the elimination of Trachoma .....	16
2.6.1. Facial Cleanliness and Environmental Improvement UIG .....	18
2.6.2. Face Washing .....	19
2.7. Theoretical Framework .....	20
2.8. Conceptual Framework for face cleanness Improvement .....	24
CHAPTER THREE .....	25
3. Research Method .....	25

3.1. Description of the Study Area.....	25
3.2. Research Design.....	26
3.3. Sampling and Sampling Techniques.....	26
3.3.1 Study Population.....	26
3.3.2 Sampling techniques and sample size.....	27
3.4. Data type and methods of collection.....	27
3.5. Validity and Reliability.....	28
3.6. Analysis and treatment of data.....	30
3.7. Ethical Consideration.....	31
CHAPTER FOUR.....	32
4. Data Analysis and Interpretation.....	32
4.1. Introduction.....	32
CHAPTER FIVE.....	41
5. Result and Discussion, Conclusions and Recommendations.....	41
5.1. Result and Discussion.....	41
5.2. Conclusions.....	44
5.3. Implications for Social Work.....	44
5.4. Recommendations.....	46
REFERENCES.....	49

**List of table**

Table 1: The Students Knowledge towards face cleanliness to ameliorate Trachoma..... 32

Table 2: The Students Practice towards Face Cleanliness..... 38

**List of Figures**

Figure 2. 1 Health Belief Model Concept (Hochbaum and Rosenstock 1952) ..... 21

Figure 2. 2: Face Cleanness (F) Improvement Framework ..... 24

Figure 3.1: Geographical mapping of the study area----- 26

**List of Abbreviations**

TF	Trachomatous Inflammation Follicular
TI	Trachomatous Inflammation Intense
TS	Trachomatous Scarring
TT	Trachomatous Trichiasis
CO	Corneal Opacity
SAFE	Surgery, Antibiotics, Face Cleanliness and Environmental Improvement

### **Abstract**

*The overall objective of the study is to Explore the Knowledge and Practice of face Cleanliness to Ameliorate Trachoma as a Component of safe strategy in Primary Schools at Lay Gayint District in Gondar, Amhara Region.*

*Researcher was employed descriptive survey method using quantitative data type. Convenient sampling was employed for this study. The reason for using Convenient sampling is that first save time and placing the population believed to be eligible about the variables researcher is studying. The analysis of the study using SPSS Software 20.*

*The Students Knowledge towards Face Cleanliness to Ameliorate Trachoma as a Component of safe strategy Lay Gayint district, Gondar, Amhara Region on the school facial cleanliness indicators of that are directly linked to the presence of trachoma including distance from water, absence of latrines, lack of awareness in general, flies, close proximity to catch by trachoma in the schools. Study found that low level of knowledge on the common transmission routes of trachoma, how practice of facial cleaning which is potteries as presence of dirty faces in children during observations that facilitate frequent exchange of infected ocular discharge from one child's face to another or to a caretaker and increase the rate of transmission of trachoma in schools. In other hand the study finding facial cleanliness programs in the primary schools has been portrayed substantially low practice in the school. Study suggested that the School extracurricular activities on eliminating trachoma should sensitize the schools on the importance of use of latrines to minimize flies that leads trachoma infection.*

**Key words: trachoma, knowledge, practice, primary school**

## CHAPTER ONE

### 1. Introduction

#### 1.1. Backgrounds of the study

Trachoma is the second largest cause of preventable blindness caused by the *bacterium Chlamydia trachomatis* that results in blindness after repeated infection. The disease is characterized by swelling of the eyelids, sensitivity to light and eventual scarring of the conjunctiva and cornea of the eyes and spreads easily from an infected person to an uninfected person in the world (WHO, 2004a). It occurs in areas with poor personal and community hygiene (i.e., hot, dry, and dusty climate) and typically affects the most marginalized, deprived members of a community.

According to the World Health Organization (WHO) (2013), trachoma is currently responsible for more than 3% of the world's blindness. Once an epidemic in most parts of the world, it has largely now disappeared from developed countries like in Europe and North America. However, it continues to be endemic in many developing and resource limited countries. In Asia, some parts of Latin America, Africa, the Middle East, and Western Pacific, it is estimated that 320 million people live in endemic areas and 8 million people suffer from trachomatous trichiasis (TT) (Haddad, 2012).

In Africa, 27.8 million cases of active trachoma (68.5% of all) and 3.8 million cases of Trichiasis (46.6% of all) are found and it is believed to be endemic in 33 of the 56 countries in Africa. The highest prevalence of active trachoma and Trichiasis remains in the Sahel area of West Africa and Savannah areas of East and Central Africa. A high proportion of TF prevalence in 1–9 years old in South Sudan (83%), Ethiopia (64%), Guinea (50%), Uganda (37%), Chad (38%), Central Africa Republic (38%), and Tanzania (32%) Kasi P.M. et, al., (2004; WHO,2013). Studies in Gambia,

Cameroon and Nigeria also showed that the overall prevalence of active trachoma in children aged 1–9 years of age were 3.8%, 12%, and 37.7%, respectively (WHO,2017).

Ethiopia is one of the five countries in which 49% of global burden of active trachoma is located. One nationwide survey on blindness, low vision, and trachoma are reported that the national prevalence of active trachoma (either TF or TI) among children with age group of 1–9 years is 40.14% (Berhane, et, al., 2006). Such a magnitude of the problem shows the harshest reality of the burden of the disease in Ethiopia.

As global elimination of trachoma is a priority on the World Health Organization disease elimination agenda. This is through a component which aims at eliminating both infectious and avoidable blindness by the year 2020. This is not going to be a reality if only the Facial cleanliness and environmental change activities include hygiene promotion through targeted health education, school-based trachoma education aspects of trachoma are looked into, while other underlying issues influencing (association with) the disease are overlooked. A holistic approach in addressing the problem of trachoma in the country is required for a lasting and sustainable solution.

## **1.2. Statements of the problem**

Ethiopia has already embarked in integrating SAFE strategy intervention to prevent and eventually eliminate blindness that can be caused by trachoma from trichiasis. Trachoma is an eye disease which can result in blindness after cycles of repeated infections. It is the leading infectious cause of blindness worldwide. According to WHO (2004) and Mariotti (2000), in Ethiopia trachoma was the third major cause of low vision and the second cause of blindness at national level and active trachoma prevalence was highest at some places where there are limited resources and awareness.

In the context of limited resources and low service infrastructure, Lay Gayint is quite known in the region, if not in the country.

From a wider perspective, there is now a general agreement that the disease is common in rural settings in developing countries and rare in developed nations. The extant literature shows that trachoma disease is categorized mainly as active/infectious which mainly affects children under the age of 7-10 years and blinding trachoma which affects people aged over 18 years. For instance, the studies conducted in Dangila town of Amhara region and Haromiya Kersa district of Oromia region showed the prevalence of active trachoma among children age 1–9 years were 12% and 25.2%, respectively (WHO,2011; Gedefaw, et, al., 2013).

For various reasons in developing countries, trachoma transmission is more among children and is easily transmitted from children to women compared to men. The risk factors related to trachoma include, low socio-economic status, inadequate supplies of water and poor knowledge and practices of good hygiene and sanitation. The disease has continued to be a public health concern especially in Ethiopia where it is currently endemic in Amhara Region particularly in poor and remote areas with limited basic services (Ketema, et, al., 2012). In fact, it is widely believed that trachoma is a disease of poverty (Wright, Turner, & Taylor, 2007). For instance, trachoma is still considered a leading cause of preventable blindness in sub-Saharan Africa especially in countries that have poor environmental sanitation, inadequate water supply and poor socio-economic status like Ethiopia (Lewallen, Massae, Tharaney, Somba, 2008; Mariotti Pascolini, Rose-Nussbaumer, 2009).

The national survey (2007) of Ethiopia showed a prevalence of 40.1% active trachoma among children aged 1-9 years [7]. Amhara region had the highest prevalence of active trachoma among children aged 1-9 years (62.6%) (Berhane, et al., 2007). The high burden of trachoma in the

Amhara region calls for collecting a further District-specific data and comprehensive efforts to evaluate the risk factors of trachoma for designing and expanding effective intervention programs even if only limited studies were conducted previously. According to 2003 Lions-Carter Center sight first initiative base line survey result at Gondar zuria *woreda*, the prevalence of active trachoma (TF) in children 1-9 year was 76.5% and percent of children with clean face was 35.4.% (Amhara Survey, 2006)

According to the *woreda* Health Office five years transformation plan at Lay Gayint *Woreda* the prevalence of active trachoma (TF) in children 1-9 years is 47.9%, TT Prevalence 4.9% and percent of children with clean face was 57.6% (Lay Gayint WoHO, June 2014).

Compared to other high prevalent *woredas* lay Gayint is the highst where Simada 45.7%, Sedie muja 45.7%, Tach Gayint 35.8% and Farta 32.8%, Gunabegemder 32.8% and the rest 9 *woredas* under 30. (South Gondar Zone Health office five years transformation plan, June 2014)

Although trachomatous blindness is untreatable, it is eminently possible to prevent and the World Health Organization promotes the use of the SAFE strategy. Surgery, addresses the needs of people at imminent risk of blindness. Antibiotics particularly Zithromax is used against active disease by treating infection in individuals and suppressing transmission in the community or to eliminate an individual's *C. trachomatis* infection. Face Washing, breaks the cycle of reinfection and prevents transmission of disease, especially among children. Environmental Improvement, used to reduce the risk of infection/re infection. Behavioral change and environmental improvements are cornerstones of prevention efforts (WHO, 2004; Lewallen, Massae, Tharaney Somba, 2008).

Trachoma is believed to be spread by hands, eye-seeking flies and clothing that has come in contact with the infective agent (*Chlamydia trachomatis*) which is present in the eye and nose secretions

of infected individuals. The human immune response to *Chlamydia trachomatis* is poorly understood. The most important factor in the pathogenesis of clinical trachoma is believed to be the frequency of re-infection (Briscoe, Feachem, & Rahaman, 1989). However, some studies have also suggested that severity may be related to genetic variability (Conway et al., 1996; West, Munoz, Mkocho, Hsieh, & Lynch, 2001). As a result, some children may have a different host response. Most people who live in trachoma-endemic areas are infected at some point in their life, yet few develop long-term sequelae.

The present study aims to explore the knowledge and practice of school children to reduce the transmission of trachoma infection. In regard to first priority, facial cleanliness activities include hygiene promotion through targeted health education, school-based trachoma education and water provision implementation practices and ensure equitable access to improved sanitation among all students at risk of trachoma is very important to reduce the disease (FDRE Ministry of Health, 2012). Health extension workers are expected to work on the F and E components of SAFE strategy and bring very significant change in school sanitation and personal hygiene in the primary school. Primary School communities including student council who have taken three months theoretical training and expected to have good knowledge and practices on personal hygiene packages.

However, there is no study conducted to estimate the extent of knowledge and practice of primary school student facial cleanliness to prevent trachoma infections. As face washing is one of the improvement components of SAFE- strategy, the most important instrument to achieve sustainable reduction in transmission of trachoma among students in the primary schools should be evaluated and find possible measures to take.

From this perspective, Lay Gayint district primary schools are chosen as the priority area to explore the knowledge and practice of primary school (grade 1-4) students in order to determine the implementation of the “F” component.

### **1.3. Research Questions**

- 1) What is the extent of primary school student face cleanness knowledge towards preventing/ameliorating trachoma infection?
- 2) What is the magnitude of implementation practices by primary school students of proper face washing components of the SAFE strategy?
- 3) What are the challenges that confronted the components of F strategy implementation practices?

### **1.4. Objectives**

#### **1.4.1. General Objective**

The overall objective of the study is to explore the knowledge and practice of face cleanliness to ameliorate trachoma as a component of SAFE strategy in Primary Schools at Lay Gayint District in Gondar Zone, Amhara Region.

#### **1.4.2. Specific Objective**

- 1) To explore the level of primary school students, face cleanness knowledge towards preventing trachoma.
- 2) To explore the magnitude of implementation practices by primary school students proper face washing components of SAFE strategy.

- 3) To examine the challenges that confronted in the components of face cleanness strategy implementation practices?

### **1.5. Significance of the Study**

Rural populations in developing countries where access to clean water and health care is limited are most vulnerable to blindness. Once blind, individuals are often forced to depend on society to fulfill basic needs because they are no longer able to participate in many regular economic activities. In 1998, the World Health Organization (WHO) adopted the acronym SAFE which stands for Surgery, Antibiotic Therapy, Facial Cleanliness and Environmental Improvement as a four-part strategy to eliminate blinding trachoma.

This thesis is of particular relevance to the F components of the SAFE strategy as it takes a school-level approach towards understanding some of the educational and behavioral factors that influence trachoma risk in Lay Gayint district of Gondar Zone, Ethiopia. It is hoped that the study findings will contribute to the larger base of trachoma risk factor studies that have been conducted in various regions of Ethiopia. It is also hoped that this study will aid decision makers in formulating a locally appropriate F strategy to reduce the prevalence of trachoma. This project aims to address the following main research question;

In order to answer the research questions of this study, this research has investigated the face cleanness improvement component of SAFE strategy. This component is the most important instrument to achieve sustainable reduction in transmission of communicable disease including trachoma in schools.

Therefore, the findings of this study Provide baseline data for Ministry of Health and Amhara health bureau for intervention strategy and used for different researchers to carry out further

large-scale studies in the area. Used for Lay Gayint health office as well as other concerned bodies and organizations/NGO, CSOS/ to take an action based on the finding.

### **1.6. Scope of the study**

The study has taken place in one climatically and geographically located primary school from grades 1-4. The study focuses on exploring the extent of face cleanness knowledge of the primary school student towards preventing trachoma. Towards this end, it explored the magnitude of implementation practices of face washing components of SAFE strategy, and finally it examined the challenges in the implementation of the component of face cleanness strategy in the primary school students.

### **1.7. Limitations of the study**

The limitation that the researcher face was most of the Health Extension workers were not accessed during data collection for secondary data since they stayed in the office only the 25% of their time rather working at the house hold level and even those Health Extension Workers who was there during the data collection were not have enough SAFE strategy data.

The other limitation that Trachoma is categorized under Neglected Tropical Diseases and as its totally neglected and was not given enough attention for the program at school level.

Teachers who had trained about school trachoma program were not access in the school, since high turnover of teachers from school to school and district to district then information was not documented well.

Limited similar studies for comparison purpose could be considered constraint factor.

### **1.8. Operational definitions of terms**

Active Trachoma: Includes both trachoma inflammation follicular (TF) and Trachomatous inflammation intense (TI) grades of trachoma

Blinding Trachoma: Includes trachomatous scarring (TS), trachomatous trichiasis (TT) and corneal opacity (CO) grades of trachoma

Clean Face: The absence of ocular and nasal discharge besides the absence of eye seeking flies.

Chlamydia Trachomatous: The bacterial pathogen responsible for causing trachoma in humans

Household: A person or group of people living in the same home or group of homes

Kebele: The smallest administrative unit in rural Ethiopia that is sometimes referred to as a neighborhood association

SAFE Strategy: A strategy developed to eliminate blindness caused by Trachoma through surgery, antibiotic treatment, facial cleanliness and environmental improvement

Woreda: An administrative area that is composed of a number of Kebeles and is comparable to a district

## CHAPTER TWO

### Review of Related Literature

#### 2.1. Trachoma as a global public health problem

In some of the world's poorest communities, what starts as uncomfortable, but mostly asymptomatic childhood eye infections, may over time lead to a painful, disabling disease resulting in blindness. Trachoma, the world's leading cause of avoidable, infectious blindness is responsible for 3% of global blindness and in 2012 an estimated 334,000 disability-adjusted life years (DALYs) (WHO (2012a; Murray et al., 2013)).

An estimated 325 million people are living in areas where trachoma is suspected but the true extent of the disease is unknown because trachoma has not been assessed in all countries or within all regions of known endemic countries (WHO, 2012b). An estimated 1.2 million persons are irreversibly blind from trachoma and an additional one million are visually impaired by the disease (Pascolini and Mariotti, 2012). An estimated 7.3 million persons have trichiasis, the disabling stage of disease leading to blindness, and who could benefit from surgery (WHO, 2012b). The economic loss due to trachoma impaired vision and blindness is estimated to be US\$ 5.3 billion annually, of which 10% is due to the requirement of a sighted household resident to care for the person with trachoma, clearly demonstrating that trachoma not only impacts the potential economic productivity of the individual, but of the entire family unit (Frick et al., 2003). If potential productivity losses were to include persons with trichiasis, the economic loss could be as high as US\$ 8 billion (Burton and Mabey, 2009).

## **2.2. Cause and Transmission of Trachoma**

Trachoma is an infectious disease of the eye caused by bacterium *Chlamydia trachomatis*, and is the world's second-leading cause of preventable blindness. Trachoma is endemic in more than 50 countries (Burton et al., 2009). WHO currently estimates that there are about 1.3 million people who have been blinded by the disease and a further 8.2 million have trichiasis (Burton et al., 2009). 150 million are infected and over 500 million are at risk of getting infected. Trachoma affects the poor, rural communities mainly in Africa, Asia and the Middle East, who live in crowded living conditions with limited access to clean water, proper sanitation and quality health care (Solomon, et al., 2006).

Trachoma disease is primarily transmitted through contact with eye discharge from an infected person either via hands, clothing or personal effects such as towels and handkerchief or flies as the discharge is carried on the feet of flies. Factors associated with trachoma include limited water supply, the amount of water used for washing, poor disposal of waste and overcrowding. A case-control study carried out in a village in Gambia compared water use in 18 families having one or more active trachoma cases among the children with that in 16 trachoma-free families in the same village. The families with trachoma were found to use significantly less water per person per day for washing children than did the control group (Bailey et al., 1999).

Trachoma infections are very closely linked to extreme poverty, active trachoma is particularly common in children under 10 years, while blinding trachoma affects adults, 18 years and above. Adult women are three times more likely to develop the blindness associated with trachoma compared to men. This is attributed in part to their close proximity with young children who are often carriers of the disease.

In some rural communities, 60% – 90 % of children are infected. Repeated exposure to the disease over a period of time eventually causes the inside of the eyelid to turn inward, a condition called trichiasis and the eyelashes to scrape and scar the cornea, this leads to the formation of corneal opacities and painful and irreversible blindness. The main symptoms of trachoma include; redness, watering and swelling of the eyes, sensitivity to light, red lumps in the eyelids, eventual eye pain, corneal scarring, visual impairment and irreversible blindness if left untreated (Munoz, 1997).

### **2.3 Epidemiology of Trachoma**

Thylefors et al., (1985) remarked that trachoma is one of the earliest recorded eye afflictions, having been identified in Egypt as early as 15 B.C. The presence was also recorded in ancient China and Mesopotamia. Trachoma became a problem as people moved into crowded settlements or towns where hygiene was poor.

The disease became a particular problem in Europe in the 19th Century, after the Egyptian campaign (1798 – 1802) and the Napoleonic Wars (1798 – 1815); trachoma was rampant in the army barracks of Europe and spread to those living in towns as troops returned home. Stringent control measures were introduced and by the early 20th Century, trachoma was essentially controlled in Europe. Despite the fact that trachoma had virtually been controlled in the industrialized world, as a result of improved sanitation and overall living conditions, it has continued to plague the developing world. This potentially blinding disease remains endemic in the poorest regions of Africa, Asia, and the Middle East and in some parts of Latin America and Australia (Thylefors et al., 1995). An estimated 10% of the world's population live in trachoma endemic areas and are at risk of developing trachoma (Frick et al., 2003). Global loss of

productivity related to impaired vision and blindness from trachoma is thought to be around \$US5.3 billion annually.

WHO estimates that approximately 1.3 million cases of blindness are due to trachoma and 8.2 million cases are of trichiasis. Prevalence of active disease in children varies from 10%-40% in some African countries and 3%-10% in several Asian countries. The overall incidence is, however, unknown (WHO,2012c). Of the 56 countries that WHO has reported to have blinding trachoma, Australia and some parts of Latin America are the only ones in developed countries, this mainly affect people who live in remote communities with inadequate water and poor sanitation.

#### **2.4. The Prevalence of Trachoma Disease in Africa**

The geographical distribution of trachoma in Africa varies between regions. Trachoma is endemic in 33 of the 56 countries in Africa, which are mainly located in east and west sub-Saharan Africa, north Africa and a few endemic coastal countries in central Africa (Murray, H, et al. (2013).

Based on available data by WHO (2012a), the highest prevalence of active trachoma and trichiasis remains in the Sahel area of west Africa and Savannah areas of east and central Africa. According to data mapped in the global atlas of trachoma launched in 2011, an estimated 129.4 million people live in areas that are confirmed empirically to be trachoma endemic based on country (former district) level prevalence of TF in 1–9-year-olds greater than 5%) and a further 155 million in areas suspected to be endemic.

Since the establishment in 1998 of the global elimination of trachoma by 2020 (GET,2020) initiative, an increasing number of endemic countries have implemented national programmes

incorporating the SAFE strategy of Surgery to correct trichiasis, Antibiotic to clear Chlamydia trachomatis infection, Facial cleanliness and Environmental improvement to reduce transmission. To fully realize the goals of GET-2020, it is necessary to scale up to a full SAFE programme in all endemic counties (districts) in every country by 2016– 2018 to maximize on impact. Some countries, especially those in Africa, lack epidemiological data on the geographical distribution of trachoma and efforts are required to complete the global trachoma map, then to keep it updated as interventions begin to take effect. This will help inform where and when to start and stop trachoma control efforts (Jennifer et al., 2013).

## **2.5. The Prevalence of Trachoma Disease in Ethiopia**

Ethiopia is one of the least among the low income countries ranking only 157 out of 169 countries in the world (National Five-Year Strategic Plan for Eye Care in Ethiopia (2006-2010), 2006). Poverty has undermined its beautiful history, and long standing resistance to colonialism, and its historical heritages. It has been affected by drought and famine repeatedly, and has one of the worst health indicators in the world. Maternal mortality and childhood under nutrition can be mentioned among others (Roodhoff, 2012).

In response to this, and many other multi-dimensional challenges which have been retarding the overall development of the nation, the Government of the Federal Democratic Republic of Ethiopia developed strategies and policies including climate change resilience carbon neutral green economy to challenge these development challenges (CSA and ICF International 2012).

Using these modern policies and strategies, the government seems to start its genuine struggle to combat poverty and to develop Ethiopia from its present status- among the least from low income countries to the status of middle income countries by the year 2025. Following this, one

can observe some visible good developmental changes in Ethiopia such as water and sanitation coverage, supply of electricity, primary education enrolment etc. (UNFCCC, 2009).

Trachoma has always been recognized as a serious public health problem in Ethiopia. Several studies were conducted in different parts of the country (A Safe Solution,2011). These pocket studies revealed that the prevalence of active trachoma was among the highest even in the context of Subsahran African Countries.

A national study conducted by Yemane et al. (2007) confirmed the findings of the previous pocket studies. This national study showed that national prevalence of active trachoma (either TF or TI) for children in the age group 1 - 9 years was 40.14%. The study also revealed that there were regional variations: Amhara (62.6%), Oromia (41.3%), SNNP (33.2%), Tigray (26.5%), Somali (22.6%) and Gambella (19.1%). In response to this specific public health problem, the Government of the Federal Democratic Republic of Ethiopia signed the Declaration of Support for VISION 2020. It also developed its own 20 years' strategic plan to eliminate trachoma. Which is Amhara region being the highest victim in trachoma increasing by 62.6%.

The government acknowledges that eliminating avoidable blindness in Ethiopia by the year 2020 needs great efforts of the government, development partners as well as all affected communities themselves (National Five-Year Strategic Plan for Eye Care in Ethiopia (2006-2010), 2006)

According to the national strategic plan document, one of the targets of the strategic plan was to reduce active trachoma in the country to less than 10% at least in 80% of targeted districts by the year 2010. In light of this genuine endeavor of the nation, conducting carry the major segment of this stubborn disease (Roodhoff, 2012).

In light of this genuine endeavor of the nation, conducting research to update policy makers about current status of trachoma is critical. Hence, this study was conducted in Lay Gayint district, Amhara National Regional State where the highest prevalence (47.9%) of active trachoma was observed in the national survey 2016 (WHO,2017) to update local decision makers on the current status of active trachoma in primary school children.

## **2.6. The SAFE strategy for the elimination of Trachoma**

The aim of programs to manage and control trachoma is not only to treat active trachoma where it is found, but also to reduce and ultimately eliminate the risk factors associated with trachoma. The successful control of trachoma is dependent on individual and community-based interventions and treatment, and there is a need for these to be part of appropriate public or primary health strategies (Taylor, 1987, WHO,1997).

The current impetus for widespread implementation of strategies for the management and control of trachoma comes from a series of consultations convened by the WHO Program for the Prevention of Blindness and Deafness (PBL) in Geneva in 1996 and 1997. The purpose of the meetings was to develop a global plan to enable all organizations and individuals involved in combating blindness to work in a focused way to achieve the common goal of eliminating avoidable blindness. Resulting from the meetings was the launch of an initiative to eliminate the five most amenable causes of blindness at the present time, including trachoma, by the year 2020 (Vision 2020).

WHO (1997) Central to this broader trachoma initiative is GET 2020 (Global Elimination of Trachoma, a program to eliminate blinding trachoma by the year 2020). GET 2020 has adopted a comprehensive set of strategies and control measures for trachoma endemic areas, summarized

as the SAFE strategy. The SAFE strategy consists of four components to give a combined medical, behavioral, and environmental approach: Surgery to correct trichomatous trichiasis and Antibiotics to reduce the reservoir of chlamydial infection within the community. Surgery is used to reverse the in-turned eyelashes of patients with trichiasis. It is usually the first part of the SAFE strategy to be delivered because it addresses the needs of those at immediate risk of blindness. Lid surgery is a fairly simple procedure that can be offered in the community or at health centers (WHO,2011).

Patients are often afraid of the operation, and offering community-wide surgery is the best way of getting good compliance. Lid surgery takes away the pain of lashes on the eyes but does not remove the scarring or restore sight. It is important that the surgeons have had training and supervision because there can be a high rate of recurrence if the surgery is not performed carefully. Antibiotics are used to treat active trachoma and to reduce the reservoir of infection in a community. Topical tetracycline eye ointment applied to the eyes every day for six weeks will treat active trachoma. Alternatively, the drug azithromycin can be taken orally in tablets (or liquid for infants), and one dose per year will treat active trachoma (Taylor, 1987).

The distribution strategy depends on the prevalence of trachoma, availability of drug, and availability of staff for screening or distribution. The World Health Organization recommends that all individuals in communities where the prevalence of active trachoma exceeds 10 percent of children ages 1 to 9 be mass-treated with antibiotic therapy. In communities where the prevalence of active disease is between 5 percent and 10 percent, health officials may choose to either mistreat or treat only people with active disease and their families (WHO,1998).

### **2.6.1. Facial Cleanliness and Environmental Improvement UIG**

Hygiene promotion and environmental improvement should be conducted in a community so that, at any given time, 80 percent of the children in the community will have clean faces. Facial Cleanliness: Dirty faces are associated with active trachoma. Children with dirty faces are more likely to transmit trachoma if they have active infections or get trachoma if they are not infected.

Because trachoma disappeared from most of the USA and Western Europe before antibiotics were discovered, it was reasoned that trachoma is eliminated by good personal hygiene practices within a sanitary environment (WHO,2012b).

In lesser developed communities, this requires not only behavioral changes and health education, but also environmental development to improve sanitation and ensure a clean and continuous source of water that is used independently for both hygiene and no hygiene purposes (UNFCCC, 2009).

The SAFE guidelines incorporate this in the face washing (“F”) and the environmental improvements (“E”) components. The challenge is that trachoma control is primarily managed by/in the public health sector, and there is an overall lack of understanding of behavioral changes and environmental improvements. Therefore, it is necessary to further engage the developmental sector due to their experience working with “F” and “E”—in particular, key potential partners such as the Water Supply and Sanitation Council in Geneva and their Water, Sanitation and Hygiene(WASH) Initiative with (WHO 2008).

Sanitation and environmental improvements can be difficult, even in successful trachoma programs. Nepal, slated to eliminate trachoma by 2014, is one such example (WHO, 2014). In 1981, the national blindness survey reported that 0.84% of the population was blind; the rate of

blindness was 0.34% in 2012, thanks in part to the success of the trachoma program.

Approximately 6.0% of the population had trachoma in 1981; today, it is only 0.4%. However, the major barrier to elimination is improved sanitation and hygiene in a country where only 31% of the population has access to these improvements and only 48% is literate, making health education difficult example (Pascolini & Mariotti, 2012).

The trachoma program in Nepal thus underlies the importance of “F” and “E.” Yet, there is little evidence available of the effectiveness of sanitation and hygiene improvements.

### **2.6.2. Face Washing**

A recent review by Jennifer et.al., (2013) of clinical trials comparing face washing with no treatment and face washing with antibiotics against antibiotics alone concluded there was some evidence that face washing with to topical Tetra cyclin was beneficial, but the evidence generally did support face washing alone or in combination with antibiotics in reducing active trachoma in primary school. Although a dirty face is considered the path way by which infection is spread in children with ocular and nasal discharge, there is still no standard regarding what constitutes a clean face (Roodhoff, 2012).

A clean face could be defined as an absence of ocular and dry nasal discharge which is a good predictor of whether face has been washed. Avery recent study (Gedefaw et, al, 2013). in Ethiopia primary school found that an unclean face, the presence of flies on a face, and the usage of soap were independently associated with active Trachoma, but the most important finding for children was that if they were from illiterate households, they were 5 times more likely to have trachoma. Another study in Ethiopia reported by Ketema, et,al.,(2012) that dirty faces is going to school were significant independent risk factors for children aged 1–9 years.

Ocular and nasal discharge in Sudan and flies on a face and a dirty face in Nigeria and Mali (Jennifer et, al., 2013) were independent reduce risk factors. Flies on face and nasal discharge were found to be associated with trachoma in Niger (WHO, 2010). but the only significant risk factor was that (rather counter intuitively) the risk of infection increased when the household head had more years of formal education.

In Malawi WHO. (2006b), dirty face was found to be significantly associated with trachoma for univariate analysis, but was not significant for multivariate analysis. Because, primary school children need to clean their face to reduce trachoma transmissions.

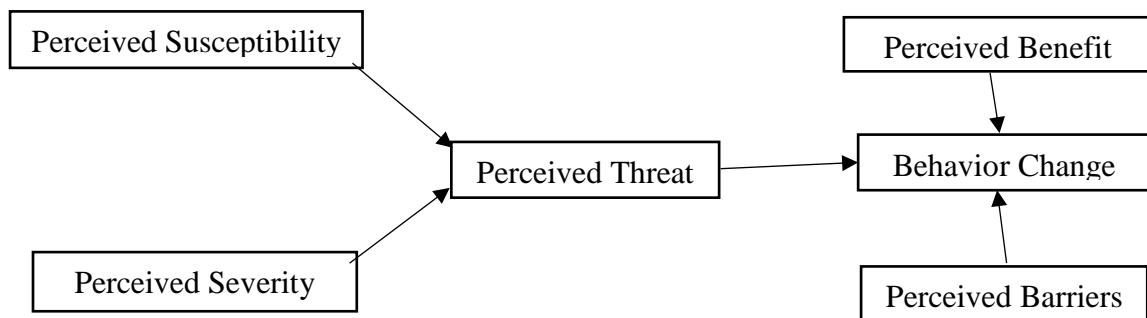
## **2.7. Theoretical Framework**

Theories play essential role in Social Work research and are common Social Worker's most useful tools as they tackle health challenges. Babbie (2003) defined theory as a systematic explanation for the observations that relate to a particular aspect of life. Many theories in social work seek answers to the fundamental questions for why people behave the way they do. More specifically, theories are used to try to understand and predict how and why people change their unfavorable behavior to favorable ones.

The desire to effect change in behavior for reducing the risk of future illness according to Philips (1991) should be based upon theoretical models that identify predictors of behavioral change. Several model or theories concentrate on the significance of socio-cognitive variables in preventive health. Theoretical model relevant to knowledge and practice of face cleanliness to ameliorate trachoma as a component of SAFE strategy study will include the Health Belief Model (Janz & Becker, 1984).

### **Health Belief Model (HBM)**

Health Belief Model originated in 1950s as a systematic method to explain and predict preventive health behavior (Cheraghi, Poorolajal, Hazavehi, & Rezapur-Shahkolai, 2014; Murray-Johnson *et al.*, 2005). Rosen stock’s model focuses on the two different aspects of health behavior they are the perception of threat and behavioral evaluation. In application, anticipated consequences of trachoma infection and infection susceptibility are the two important components of threat perception of any of school trachoma amelioration program. Two definite sets of beliefs take the charge of behavioral change: they are the perceived barriers and perceived benefits which later affect the infection prevalence and incidence. In addition to threat perception and behavioral evaluation, “cues to action” component was included in Health Belief Model (HBM). Cues to action refer to triggers to change risks of trachoma infection related likelihood of behaviors (Lajunen & Rasanen, 2004). HBM are composed by 5 factors (Hochbaum *et al.*, 1952). Each component of HBM theory and how it can be used in trachoma prevention program is explained below.



*Figure 2. 1 Health Belief Model Concept (Hochbaum and Rosenstock 1952)*

In the Health Belief Model, the perceived seriousness and perceived susceptibility together considered as perceived threat. These two in a situation is completely depend on the early understanding of the situation. For instance, active trachoma infection to students if the

teachers, parents and the students themselves consider the pain and suffering to the students and further irreversible blindness burden going to have because of the active trachoma infection he/she consider it as threat.

**Perceived Susceptibility:** –The model foresees that individuals who identify themselves are prone to a health problem will occupy in behaviors to minimize their risk of developing the health problem (Janz and Becker, 1984). The students are having their own feeling of probability of experiencing trachoma infection. The students who are considering themselves as low risk of infection many deny that they are at risks of contraction the disease. Those students consider themselves at high extreme susceptibility of trachoma infection will really take proper face washing activities to prevent the sickness.

**Perceived severity:** It is a verbal assessment of seriousness of the problem and what are the future consequences of it (Janz & Becker, 1984). According to this model those students who think active trachoma infection is leading to blindness will enroll in face washing activities which reduce the occurrence of the disease (or reduce its severity). Perceived seriousness is the one where students think that repeatedly exposed to trachoma infection will cause blindness, and cause lifelong dependency.

**Perceived Benefits:** Perceived benefits refer to an individual's assessment of the value or efficacy of engaging in a health-promoting behavior to decrease risk of disease (Cao *et al.*, 2014). Any human being who believes that an action will decrease the susceptibility to a health issue or decrease the seriousness then the person will involve in a behavior regardless of effectiveness of action. The students who believe that face washing with soap will prevent the acquisitions of trachoma infection are more likely to practice that than those who do not believe

in it. The action for preventing active trachoma is the next step to foresee after an individual identify the susceptibility of trachoma infection and admit the consequences.

**Perceived Barrier:** Perceived barriers refer to an individual's estimation of the hurdle for behavior change. In a life threatening situation if the individual believe that a particular action will minimize the risk, then also barriers will prevent him from those actions. The common barriers expressed by the school students are absence of water in hand washing container, availability of soap, locations of hand washing facilities, and access of latrine in performing the change of action.

**Modifying Behaviors:** The perceptions of each individual will vary with their demographic characteristics and psychosocial variable (Morrongiello, Zdzieborski, Sandomierski & Munroe, 2013). The term perceptions include the perceived seriousness, susceptibility, benefits and barriers. The demographic variables can be age, sex, number of students in the school. Psychosocial factors include the family income, parent's educational status and school hygiene facilities.

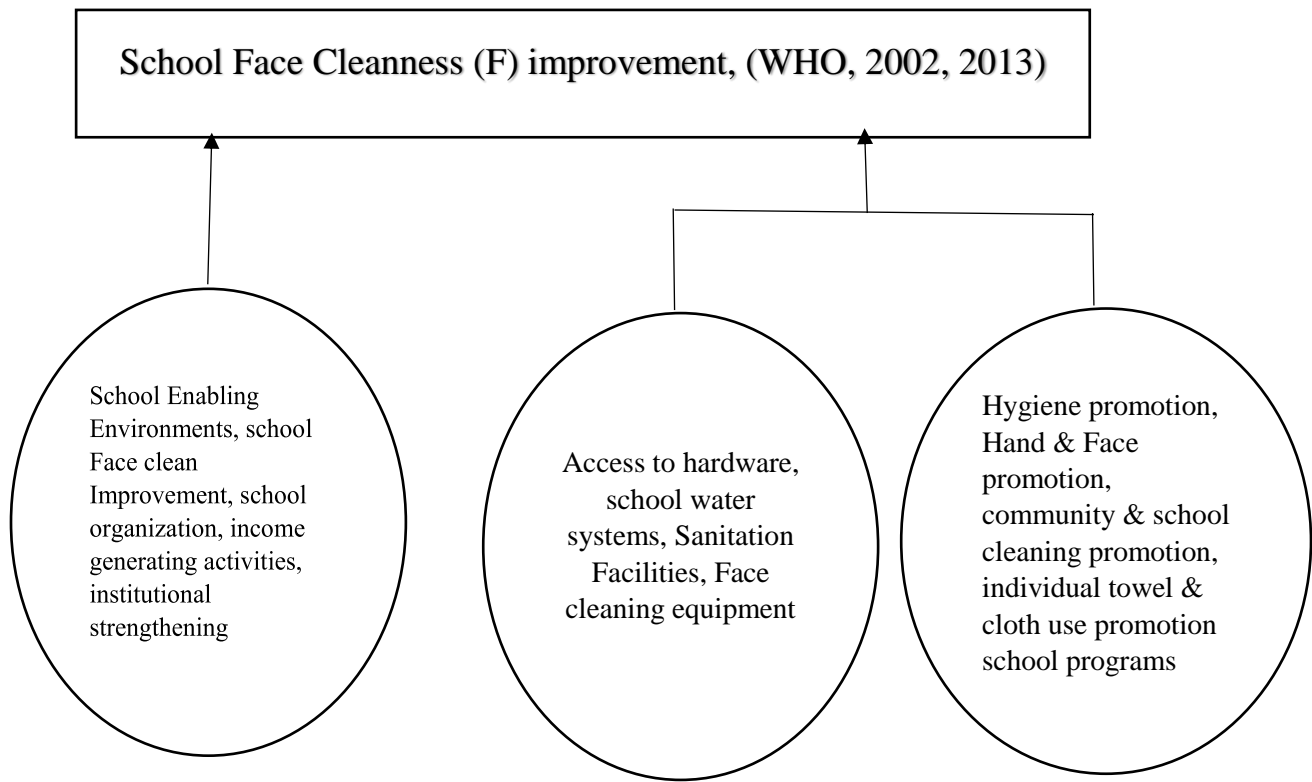
**Cues to Action:** All health promoting behaviors are in need of a trigger or cue. These cues can come from within or from outside. Internal cues can be pain. External cue can be information, advices and motivation from others (Cao *et al.*, 2014). The student's recognition of the levels of susceptibility and seriousness decide the force of action. The difference between perceived benefits and perceived barriers says the way of action.

In summary, the school based efforts can effectively change the practices of face cleanliness behaviors of school children. To maximize the likelihood of success, efforts should be targeted broadly to increase school children awareness of the importance of face cleanliness and increase facial cleanliness assessments of children by the room teachers.

## 2.8. Conceptual Framework for face cleanness Improvement

This program, is a useful model for planning and implementing F and E interventions for reducing trachoma transmission in primary school (WHO,2013). The model has three components: accessing hardware, promoting hygiene, and enabling environments. Hygiene promotion involves encouraging existing practices, such as face and hand washing; it involves promoting new practices, such as individual towel use; and it involves changing key behaviors such as disposing of children’s feces in a latrine instead of on a rubbish heap.

These practices must be supported by community hardware such as water systems, sanitation facilities, and community cleaning equipment. Finally, hygiene improvement cannot be implemented and sustained at the community level without the enabling of institutional and policy environment.



*Figure 2. 2: Face Cleanness (F) Improvement Framework*

## CHAPTER THREE

### 3. Research Method

#### 3.1. Description of the Study Area

The study conducted in Amhara Region South Gonder Zone Lay Gayint district. Lay Gayint is situated at 739 km away from the capital city of the country along Woreta -Woldiya high way. Its boundaries are North Wollo zone in the east, Estie and Farta districts in the west, Ebinat and Meketewa districts in the north, Tach Gayint District in the south, and southwest Simada and Sediemuja districts. Its area coverage is 1320.31 Km<sup>2</sup> that comprises about 13 percent of South Gondor Zone. Lay Gayint is the fourth largest district in South Gondar zone. Nefas Mewcha, the capital of the district and; the political and commercial center is located at the central part of the district where the woreta-woldya high way passing through. Lay Gayint, similar to many other districts in south Gondar Zone, it is very mountainous and it also is dissected by many rivers and seasonal streams.

According to CSA (2013) Lay Gayint has a total population of 243,485 (male 122,730 and female 120,755). Among this population 35,722 (male 17,777 and female 17945) is living in Urban of the district. The rest 207,763(male 104953 and 102810) is residing in rural parts of the district.

This research took place in Lay Gayint District in selected primary schools from grades 1-4. Lay Gayint is located in south Gonder zone and is one of 15 districts. It has 127 primary schools in clusters. 35 of the primary schools are located in temperate area while 80 primary schools are in the highland area. But the rest 12 primary schools are located in the extreme lowland areas (where it's the place of active trachoma is prevalent) and these schools are the targets of the researcher.

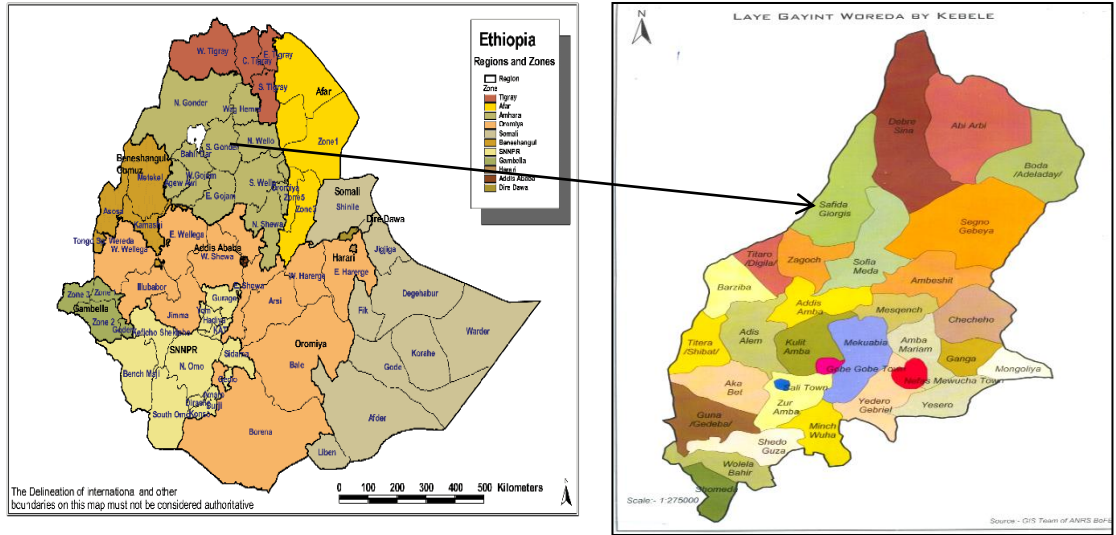


Figure 3.1: Geographical mapping of the study area

### 3.2. Research Design

The study is quantitative and employed school based a cross-sectional descriptive design. According to Rubin and Babbie (2010), the goal of a quantitative descriptive study is to describe the characteristics of a specific situation which has been developed in previous works. The quantitative approach is knowledge building, and its great strength is providing data that is descriptive, and gives us a better understanding of social reality (Rubin et al, 2010).

### 3.3. Sampling and Sampling Techniques

#### 3.3.1 Study Population

According to Hair et al. (2010), study population is said to be a specified group of people or object for which questions can be asked or observed made to develop required data structures and information. Therefore, for this study, the study populations were 15,938 from a total of 12

primary school students from grades 1-4. In selecting eligible students for this study, 1/4th of the 12 primary school student populations were included. Hence, the target population was drawn from three schools. A total of 3,284 students were available in these three schools.

### **3.3.2 Sampling techniques and sample size**

Convenient sampling was employed for this study. The reason for using convenient sampling is first to save time and to remain more specific. Out of the total 3,284 students 300 are sampled conveniently from grade 1-4 students in three selected schools. The sample size was determined by applying convenient sampling method. Hence, in the three schools- namely, Titra Primary School, Zagoch Primary School, and Gobgob Primary School, a total of 300 students, 100 from each school were selected.

To counter check the accuracy of the sample size number, sample size was determined at 95% confidence level and with 5% margin of error.

### **3.4. Data type and methods of collection**

In an attempt to meet the objectives of the study, the researcher used both primary and secondary data sources. Primary Data were collected with structured instruments of closed ended questionnaires and with structured observational checklists. According to Biggam (2008), primary data is the information that the researcher finds out by himself regarding a specific topic using questionnaires. Primary data was collected through direct observation and structured questionnaire. The structured questionnaire was filled by selected primary school students with the researchers interview. The primary data was prepared in the form of likert-type scale from various relevant published materials.

The Likert-type scale method uses a range of responses: ‘Strongly Disagree’, ‘Disagree’, ‘Neutral’, ‘Agree’, and ‘Strongly Agree’, with a numeric value of 1-5, respectively. The usage of this particular scaling method ensured that the research study illustrate the ability to assess the responses and measure the responses quantifiably. So that, a pattern or trend may be produced in order to assess research problem of statement. It is a process of asking many students the same questions and examining their answers. It was the researcher himself who approached each student and asked them separately to respond to the questions asked. Hence, their responses, due to their limited ability to fill out each question, were recorded by the researcher. In addition to the questionnaire, observation was used to supplement the data. Observational evidence is often useful in providing information about a topic like the implementations of facial cleanness. In this study a standard checklist developed by WHO( 2013) for this purpose was used. To validate the responses of the study participants, the researcher carefully observed the important variables and determined their accuracy to reflect the realities on the ground. The observation checklist (see Appendix C) served as a source of evidence in the study. The researcher was able to observe real life situations of the students in each school again and again to be correct. A minimum of 3 day observation was done at each school.

On the other hand, Secondary data was gathered from public health report, manual and documents. The main advantage with this type of data is to collect relevant data that are consistent with the research questions and objectives.

### **3.5. Validity and Reliability**

Reliability and validity are central issues in all measurement. Both concern how concrete measures are connected to constructs. Reliability and validity are salient because constructs in

social theory are often ambiguous, diffuse, and not directly observable. Perfect reliability and validity are virtually impossible to achieve. Rather, they are ideals researchers strive for.

All social work researchers want their measures to be reliable and valid. Both ideas are important in establishing the truthfulness, credibility, or believability of findings. Both terms also have multiple meanings. Here, they refer to related, desirable aspects of measurement.

Reliability means dependability or consistency. It suggests that the same thing is repeated or recurs under the identical or very similar conditions. The opposite of reliability is a measurement process that yields erratic, unstable, or inconsistent results.

Validity suggests truthfulness and refers to the match between a construct—or the way a researcher conceptualizes the idea in a conceptual definition— and a measure. It refers to how well an idea about reality "fits" with actual reality. The absence of validity occurs if there is poor fit between the constructs a researcher uses to describe, theorize, or analyze the social world and what actually occurs in the social world. In simple terms, validity addresses the question of how well the social reality being measured through research matches with the constructs researchers use to understand it.

According to Bryman and Bell (2007), reliability analysis is concerned with the internal consistency of the research instrument. Malhotra (2010) mentioned about three types of validity in his study: content validity, predictive validity, and construct validity. Content validity in this study was obtained from the review of literature and by adapting instruments which was used from previous studies. Content *validity* is a special type of face validity. It addresses the question, "Is the full content of a definition represented in a measure?" A conceptual definition holds ideas; it is a "space" containing ideas and concepts. Measures should sample or represent all ideas or areas in the conceptual space. Content validity involves three steps. First, specify the

content in a construct's definition. Next, sample from all areas of the definition. Finally, develop an indicator that taps all of the parts of the definition.

Reliability means that the numerical results produced by an indicator do not vary because of characteristics of the measurement process or measurement instrument itself. Multiple items in all constructs were used to conduct the internal consistency. The reliability of the measures was examined through the calculation of Cronbach's alpha coefficients. For scale acceptability, Hair et al. (1998) suggested that Cronbach's alpha coefficient of construct is 0.6. Each domain obtained the value 0.84. It means that the items in each domain are 84% understood by most of the respondents. On the other hand, if the findings are far from the expected value of 0.6, this might be caused by respondents' different perception toward each item of the domain.

### **3.6. Analysis and treatment of data**

Quantitative data collected were organized, classified, analyzed and interpreted in chapter four of this paper to arrive at conclusions. Each question in the questionnaires was categorized based on the study's research objectives and finally grouped based on common characteristic. The data was also analyzed in the descriptive frequency using Statistical Packages for Social Studies (SPSS v20.0).

The data also was organized and presented using different tools such as mean, standard deviations, and cross tabulations figures in an easily understandable way. The result was interpreted using percentage of respondents' frequencies.

### **3.7. Ethical Consideration**

Research ethics refers to the type of agreement that the researcher enters with his or her research participants. Ethical considerations play a role in all research studies and all researchers is aware of and attend to the ethical considerations related to their studies. Therefore, the researcher was able to communicate with different respondents smoothly.

The purpose of the study is marked clear and understandable for all participants. Any communication with the concerned bodies were accomplished at their voluntarily agreement without harming and threatening the personal and institutional wellbeing. Every respondent was briefed about the purpose of the study and was informed about confidentiality, and total willingness to participate or withdraw without any penalty at any time of the process.

## CHAPTER FOUR

### 4. Data Analysis and Interpretation

#### 4.1. Introduction

This chapter deals with the analysis and interpretation of the quantitative data collected through questionnaire. The questionnaires was composed of close-ended questions, which are summarized and presented quantitatively in tables using SPSS 20 software.

The researcher used some secondary data from published and unpublished documents of the case school.

The response rate was 100.0 %. All questionnaires were returned and are kept confidentially. As much as possible, made the questionnaire was designed to be easy to read and answer without difficulties.

#### **Findings**

*Table 1: The Students Knowledge towards face cleanliness to ameliorate Trachoma*

Variable	Response rate	chi-square	p-value
1. Gender			
Male	160(53.3)	31.142	<0.05*
Female	140(46.7)		
2. Age	±9.864	88.43	< 0.05*
3. Have you ever heard health information on trachoma?			
No	92(30.7)	75.34	< 0.05*
Yes	208(69.3)		

4. where did you hear this information's about trachoma?			
trachoma volunteers	15(5.0)		
health extensions workers	123(41.0)		
mass media	1(.3)	83.959	< 0.05*
health facility	3(1.0)		
school staff	142(47.3)		
school mates	9(3.0)		
others.	7(2.3)		
5. What information about trachoma did you hear?			
Causes of trachoma	132(44.0)		
Transmission of trachoma	63(21.0)	67.12	< 0.05*
Latrine construction and use	53(17.7)		
Face washing	17(5.7)		
Antibiotics treatment	24(8.0)		
Trichiasis surgery	11(3.7)		
6. Do you have water in your school specifically for washing yourselves?			
No	34(11.3)	72.89	< 0.05*
Yes	266(88.7)		
7. Do you have the habit to wash your hands after toilet?			
No	31(10.3)	45.87	0.056
Yes	269(89.7)		
8. What is the main source of water student uses for drinking?			
Hand pump/Tube well / borehole	300(100.0)	77.00	< 0.05*
9. Do you think your water is clean?			
No	83 (27.7)	57.34	< 0.05*
Yes	215 (71.7)		
10. How long does a round-trip take to collect water from the source of water used for bathing in the school?			
<30 minutes	142(47.3)		
30 minutes to 1 hour	155(51.7)	78.92	<0.05*
>1 hour=3	3(1.0)		

\*Significant difference at  $p < 0.05$ (\*)

\*\*Source from School trachoma survey data,2019

From the above Table, it can be seen that students had limited (inadequate) knowledge towards face cleanliness to ameliorate Trachoma. In regard to gender differences, 160(53.3%) of respondents were males while 140(46.7%) were females (i.e., the test value of  $\chi^2 = 31.142$  that portrayed to likelihood ratio statistically significance of  $P < 0.05$ \* level.

On other hand, the average respondents age is 9.864 years' old which is the test value of  $\chi^2 = 88.43$  that portrayed to the likelihood ratio of statically significance of  $P < 0.05$ \* level.

Information on socio-demographic characteristics known to be associated with "F" was collected and has shown significant difference.

Regarding health information on trachoma, the majority 208(69.3%) of respondents had information about trachoma (the test value of  $\chi^2 = 75.34$  with that ratio statistically significance of  $P < 0.05$ ).

Regarding from where they heard the information's about trachoma, 15(5.0%) said from trachoma volunteers, 123(41.0%) from health extensions workers, 1(0.3%) from mass media, 3(1.0%) of them from health personnel, 142(47.3%) from school, 9(3.0%) of them from school mates and 7(2.3%) from other sources. This is the test value of  $\chi^2 = 83.959$  that shows the likelihood of ratio statistically significance of  $P < 0.05$ \* level.

Regarding the type of information they heard about trachoma, 132(44.0%) students said they heard about causes of trachoma, 63(21.0%) of them about transmission of trachoma, 53(17.7%) about latrine construction and use, 17(5.7%) about face washing, 24(8.0%) about Antibiotics

treatment and 11(3.7%) about Trichiasis surgery. The result shows the test value of  $\chi^2 = 67.12$  that reflects the ratio statistically significance of  $P < 0.05^*$  level.

In regard to the availability of water in the school, 34(11.3%) were reported that there is no water in the school by default and 266(88.7%) argued that there is water available in the school which is the test value of  $\chi^2 = 72.89$ . However, it has been observed that all school have water sources though the amount and quality is not to the level of one's satisfaction.

Regarding the habit of washing hands and faces after toilet use, 31(10.3%) of the students responded that they have no such habit while 269(89.7%) of them have the habit. This is the test value of  $\chi^2 = 45.87$  that shows the likelihood of ratio is no statistically significance of  $P = 0.056$  level.

Regarding the main source of water that students used for drinking in the school, 300(100.0%) of them stated that they are bucketing water from hand pump/tube well / borehole. During the observations it was checked out that all selected schools had the same source of water for drinking.

On the other hand, the cleanse of school water about 83 (27.7%) of the respondents argued that the school water is not clean and 215 (71.7%) of them felt that the school water is clean which is the test value of  $\chi^2 = 57.34$  that is statistically significance of  $P < 0.05$  level.

The question of distances that take time to fetch water from the source of water was responded differently. 142(47.3%) of the students reported that it takes <30 minutes, 155(51.7%) of them said that it takes from 30 minutes to 1 hour and the rest 3(1.0%) of them said that it takes >1 hour which is the test value of  $\chi^2 = 78.92$  that is a statistical significance of  $P < 0.05$  level. The

time for the round-trip distance takes to bring water from the source of water for bathing in the school as the study in Niger (WHO, 2010) was similar to the present study.

The aim of hygiene promotion for trachoma control is to increase the proportion of children who have sustained clean faces. This requires that the acceptable standard of cleanliness and appearance in the community as a whole should be raised so that it is unacceptable for children to have mucus coming from their noses, dirt on their faces, and food around their mouths.

Schools should make sure that children are clean, and understand the consequences of uncleanliness. However, there are considerable physical, behavioral, and cultural barriers to this. Where water is scarce, it is difficult for women to keep it for washing because it is not easy to fetch water from distance. Moreover, some feel that letting children use water for washing is a wastage—after all, the children get dirty again and again so quickly.

In the schools, children are not allowed to waste their times looking for water. The decision to use water is often left to the school personnel. Children are not encouraged to use water for bathing at schools. The absence of school trachoma club affects their interest to wash themselves. Getting student to link good hygiene with good health, and good health with better hygiene is a challenge faced by trachoma programs.

There is poor knowledge on the causes, signs, symptoms of trachoma disease. Studies conducted in various schools in Lay Gaynt show that students are highly susceptible to eye infection and that effects of blinding trachoma are not often detected until adulthood where old age is accompanied with sight loss. During childhood, the long-term effects of disease-carrying flies, and playing in dirt fields are not taken into consideration.

There is lack of knowledge about facial cleanliness and little is known about the relationships between trachoma and risk factors such as distance from water, absence of latrines, lack of awareness in general, flies to catch trachoma in the school. Study found that there is medium level of knowledge on the common transmission routes of trachoma, and the practice of facial cleaning is low in the sample schools.

As has been stated, the SAFE strategy in primary school is a comprehensive public health strategy approved by WHO to treat trachoma epidemics in primary school in many parts of the developing world. The combination of facial cleanliness and environmental educational efforts, a multi-pronged approach to the disease has shown promising results in the areas where it has been applied so far. According to the Centers for Disease Control (CDC), there is no existing national or international surveillance for trachoma which makes it hard to control and prevent the disease. With proper intervention, students can learn how to keep clean their faces and the long-term effects of trachoma cannot pass from one generation to the next (Ngondi et al., 2008).

Trachoma can be treated with facial cleanliness practices such as modifications in water use, eye seeking fly control, latrine use, and health education and reduced proximity contact to the reservoir. These changes, however, pose numerous strategies.

*Table 2: The Students Practice towards Face Cleanliness*

Variable	Response rate	chi-square	p-value
<b>1. How often do are you bathe?</b>			
Never	89 (29.7)	80.43	<0.05*
Sometimes	211(70.3)		
<b>2. How often are washed your face?</b>			
every day		67.34	< 0.05*
Never	6(2.0)		
Some times	164(54.7)		
<b>3. Do you use soap?</b>			
No	130(43.3)	81.67	< 0.05*
Yes	93(31.0) 207(69.0)		
<b>4. Availability of Water in hand washing container?</b>			
No	18(6.0)	84.67	< 0.05*
Yes	282(94.0)		
<b>5. Dose the Location of hand washing container comfortable?</b>			
yes	273(91.0)	62.34	< 0.05*
no	27(9.0)		

\*Significant difference at  $p < 0.05$ (\*)

\*\*Source from school trachoma survey data, 2019

From above table, it is possible to understand various findings in regard to the students' practice towards face Cleanliness as one component of SAFE strategy. In view of the responses to the question 'How often are these children bath in the school?', 89 (29.7%) of the students reported that they could not bath in the school while 211(70.3%) of them said they took bath sometimes in the school which is the test value of  $\chi^2 = 80.43$  that shows the likelihood ratio of statistically significance of  $P < 0.05$  level. It was also learned during the observations that students did not wash their faces or take bathe regularly. They are not even supplied soaps for face washing when there is a chance. Only traditional methods of hand wash using water pipes can be seen sometimes in the schools.

In regard to 'How often they wash their faces' 6(2.0%) of respondents indicated that they wash every day while 164(54.7%) of the of respondents admitted that they never wash their faces and 130(43.3%) said they sometimes wash their faces. The test value of  $\chi^2 = 67.34$  showed the likelihood ratio of a statistical significance of  $P < 0.05$  level.

Regrading to the issue of soap use, 93(31.0%) of the students responded that they do not use soap and 207(69.05%) use soap which is the test value of  $\chi^2 = 81.67$  that indicated a likelihood ratio of statistical significance of  $P < 0.05$  level. During the observations it was made clear that soap was not available in the school at the time of hand washing.

Consequently, there is an assumption that promoting hygiene may reduce trachoma if the school undertakes a vigorous campaign promoting facial cleanliness and educational activities in the school programs and in the community. The availability of fresh water is as essential aspect of trachoma control.

Regarding to the availability of water in hand washing container, 18(6.0%) of the students are not agreed on the availability of water while 282(94.0%) of them are agreed on its availability of which is the test value of  $\chi^2 = 84.67$  that indicates a statistically significance of  $P < 0.05$  level.

Regarding to the location of hand washing container comfortability, 273(91.0) respondents stated that it is comfortable and 27(9.0%) do not agree with the location of hand washing container which is the test value of  $\chi^2 = 62.34$  that portrayed a statistically significance of  $P < 0.05$  level.

From observation latrine availability was confirmed and yet the utilization of latrine is null since this leads to conclude that its equal with the absence of latrine.

At present there are still substantial challenges in measuring the effectiveness of facial cleanliness programs. There is no doubt that face washing is an effective tool in reducing the levels of trachoma; however, how it should be accomplished is still far from certain.

## CHAPTER FIVE

### 5. Result and Discussion, Conclusions and Recommendations

#### 5.1. Result and Discussion

This chapter deals with the Result and Discussion, conclusions and suggestions that have been drawn from the data obtained in the study. The researcher, as much as possible, has interpreted and analyzed the data.

Students' knowledge regarding face cleanliness in order to reduce Trachoma disease at a school level was analyzed on the basis of many variables. Accordingly, gender variation was observed. 160(53.3%) of respondents were male and 140(46.7%) were female. The average age of the respondents was 9.864. Information on socio- demographic characteristics was closely associated with "F" component, suggesting that those who come from low income households lack access to clean water and thus do not wash their faces.

Respondents also provided health information on trachoma. In this aspect, 92(30.7%) of them have no information about trachoma. They got the information about trachoma from different sources. While 15(5.0%) have got the information from volunteers, 123(41.0%) from health extensions workers. It was only 1(0.3%) who got from the mass media, and 3(1.0%) from health facility, 142(47.3%) from school, 9(3.0%) from school mates and 7(2.3%) from others.

Information about the causes of trachoma, and its transmission was also collected. Latrine construction and its use, 17(5.7%), knowledge about Antibiotics treatment and Trichiasis surgery was inadequate.

On the other hand, study done in school children in Angolela in the Amhara regional state of Ethiopia showed, only 14.8% reported actually following hand washing practice after defecation (abera etal, 2010), and the same is true with this study that the low experience of hand washing

after toilet use were indicated a major problem which fits with the observation finding. The main source of water for students to drink in the school comes from hand pump or borehole. The cleanliness of the water, however, was reported to be good enough. Unfortunately, they spend a lot of time to bring water for drinking far from their homes, taking sometimes more than an hour. The time for the round-trip distance takes to bring water from the source of water for bathing in the school as the study in Niger (WHO, 2010) was similar to the present study.

In this regard, strategies for hygiene promotion must be designed to increase the proportion of children who have sustained clean faces. This requires that the acceptable standard of cleanliness and appearance in the community as a whole should be raised so that children will learn to avoid mucus coming from their noses, dirt on their faces, and unclean mouths.

The study indicates that students have poor knowledge on the causes, signs, symptoms of trachoma. The SAFE strategy requires a long preparation and resources in primary schools. The combination of facial cleanliness and environmental educational efforts, a multi-pronged approach to the disease has shown promising results in the areas where it has been applied so far. Improvements in the school environments and the practice of facial cleanliness long with fly control, latrine use, and health education are needed to reduce the current trachoma problems in the areas.

Study results indicate that students are not well aware of the causes of trachoma and thus have little knowledge towards face cleanliness to ameliorate trachoma. Regarding to the issue of how often children took baths/face washing in the school, 89 (29.7%) of them responded that they do not bath in the school and 211(70.3%) admitted taking baths in the school which is the test value of  $\chi^2 = 80.43$  that indicates a likelihood ratio statistically significance of  $P < 0.05$  level. In this light, I was able to observe that students did not wash their faces, share water basins and use no

soap for washing in the schools. During my observations there was no soap available in the school.

Regarding to the availability of water for hand washing and the comfortability of the location of hand washing container, 273(91.0) stated that it is comfortable and 27(9.0%) did not agree with the location of hand washing container which is the test value of  $\chi^2 = 62.34$  that is a ratio of statistically significance of  $P < 0.05$  level.

However, most of the data obtained from the observations have confirmed what was reported by the students was true and accurate. In general, they have a long way to have the knowledge about various methods of SAFE implementation practice to eliminate trachoma.

Health Belief Model (HBM) is an important model since it helps in predicting the behavior. This is a very useful model because it helps to understand health behavior, predicts the future behavior it directs the potential modifiable behavior. Russell, (1991) developed a tool to assesses disease prevention education programs for individuals. The objective of this tool was to measure the student's trachoma infection health beliefs and social influence. The tool was developed based on the Health Belief Model, and composed of six scales that measure active trachoma infection susceptibility and seriousness, benefits and barriers of infection prevention, self-efficacy of infection prevention performance, and social influence. Many studies support the effectiveness of HBM in behavioral change there are evidences questioning the predictive power of this model on behavior change (Armitage & Conner, 2010). the school-based efforts can effectively change the behaviors of students. To maximize the likelihood of success, efforts should be targeted broadly to increase the school students' awareness of the importance of making the minor changes in the knowledge of face cleanliness and increasing the practice of face washing.

## **5.2. Conclusions**

The students' knowledge and practice towards face cleanliness is directly linked to the presence and prevalence of trachoma.

The study found that there is low level of knowledge on the common transmission routes of trachoma, and the inadequate attention given to the practice of facial cleanliness.

In the schools it has been possible to observe children who have not washed properly their faces. It has also been observed that facial cleanliness programs in the primary schools have been minimally practiced.

Factors such as distance from water source, absence of latrines utilization, lack of awareness in general, disease carrying flies, family background and income all affect the students' knowledge and practice of prevention about trachoma in the school environment and considered as a challenge of "F" Component of SAFE strategy implementation practice.

## **5.3. Implications for Social Work**

As a beginning, Social Workers understanding and recognition that there are children aged 1-9 years are suffering from active trachoma and seeking appropriate prevention and treatment help and recognize that trachoma infection has a long-term effect like blindness is important. To bring this end, as explained above, its is better to conduct qualified and detailed study on the issue and should be capacitated with adequate knowledge and practice to prevent the spread of the disease and to help children safe of the consequences.

Social workers and health extension professionals including school teachers should aware that working within the school community as a whole is effective way of addressing face cleanliness

improvement among school children and ameliorate trachoma. To the other end involvement of the school children in the prevention and promotion activities is crucial. For effectual intervention social workers should systematically link and work with various organizations like Education, Health, parent teacher association, school clubs, and the media to address and help children at risk of getting trachoma. According to this study, one of the major causes of low face cleanliness to ameliorate trachoma is washing faces of school children in the school observed not encouraged because it is considered to make children undisciplined and difficult to control. In this regard social workers are expected to create awareness about the intermediate causes of the poor face cleanliness to the school community and concerned bodies in order to take measures on the area. Off course its not only the only the responsibilities of school community, but mainly the parents and caregivers of children too. The awareness should also create to the families in taking the responsibilities to create healthy and free of trachoma children by washing the faces of children. Again, poor knowledge on causes, signs, symptoms and transmission to trachoma are the other causes of poor face cleanliness as amelioration of trachoma as it is discussed in the findings. Accordingly, social workers in that regard are expected to work on the promotion and school curriculum integration of the contents with in the subject matter for clear understanding and sustainable behavior change. Because schools are the appropriate places where it is easily accessible to give age appropriate lessons that can enable to create healthy and productive children. Finally, to eliminate trachoma as a public health problem, the roles of school teachers and families are vital in assisting the children because they are the immediate society influences them. Therefore, social workers need to have a link of working with teachers and families and helping school children to be free of active trachoma with face cleanliness promotion using their professional skills.

#### 5.4. Recommendations

The following are the suggestions put on the basis of the research findings.

- Primary schools should have policies that promote improvement of knowledge and skills to prevent and early health seeking behavior on trachoma, such as promotion of good hygiene practices (hand and face washing), proper water use, latrines use and environmental cleanliness.
- School trachoma eliminating program should use strategies that improve students' knowledge on the disease, causes, signs and symptoms and prevention as an effective and efficient approach (Use like promotions with banners, leaflets, billboards, stickers, posters, and even with child friendly games and rol plays through school anti trachoma clubs and radio lessons).
- Stablish and strengthening school anti trachoma clubs for the prevention and eradications of trachoma among school children
- School extracurricular activities should include lessons on how to eliminate trachoma, specifically incorporate face cleanliness component of the SAFE strategy besides environmental improvement (It is important that hygiene education is incorporated in the school curriculum).
- The community should be sensitized about the importance of SAFE strategy and how to implement them.
- School eliminating trachoma should create awareness among the community on unwanted community beliefs that accelerate spread of trachoma specially children hygiene should be the priority focus.

- Training of teachers who, if motivated and enthusiastic, are a key element for effective hygiene education.
- The Health and Education sectors should strength their collaboration for the elimination of trachoma in all hierarchy level including implementation of the health extension packages at the school setting.
- Further explanatory studies should be carried out on the same issue to result in better solutions.
- The Study recommends the use of health belief theory in implementing the Face Cleanliness improvement programs. The researcher assumes that increasing perceived severity, perceived susceptibility, perceived benefits, and reducing perceived barriers and via cues to action and modifying factors will increase students' participation and involvement in face washing practice.

I also recommend that, Amhara national regional state particularly the Health Bureau and the Education bureau of the region has still huge TT backlog. The regional health bureau in collaboration with the educational bureau needs to show an assurance of water availability in each school and support SAFE implementation at all levels. Sustainability with effective implementation strategy of intervention, testing the performance of each school and learn from successful practice must be insured continuously to improve achievements. In this vein, the regional educational bureau has to strengthen reviewing of performances, regular supportive supervision, the daily, weekly and monthly reporting systems at each school level. Political leaders at all school levels (regional sate, zonal, district and village/kebele) should fully involve to clear TT backlog and work closely on sustainable interventions. The regional state health bureau should also intensify the training of mid-level eye care workers and

WASH professionals and strengthen the coordination for integration of Trachoma with other health taskforces. This lesson could be scalable to other disease control and prevention programs with further development. The involvement of school social workers in every step of the implementation process cannot be overemphasized here. In this regard, every school needs to have at least one school social worker to facilitate the academic pursuits of the students including the implementation of the SAFE strategy.

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**Annex A, Consent Form in English**

I am Natnael Muche, a prospect graduate student of Addis Ababa University at School of Social Work and I'm conducting this research for the partial fulfillment of Masters of Degree of Social Work (MSW) in Addis Ababa University.

**Purpose:** the purpose of the study to explore the knowledge and practice of face cleanliness of primary school students and provide contributions for further use by concerned bodies.

**Procedures:** when you have agreed, you will fill out the standard questionnaires for 20 minutes.

The researcher will ask you about the knowledge and practices of face cleanliness.

Do you have any questions? Are you willing to participate in this study? Please sign here if you are voluntary.

Agree \_\_\_\_\_ Disagree \_\_\_\_\_

Signature \_\_\_\_\_

Thank you.

**Annex B, Consent form: Amharic version**

እኔ ናትናኤል ሙጩ እባላለሁ። የአዲስ አበባ ዩኒቨርሲቲ የሶሻል ወርክ ተምራቂ ተማሪ ነኝ። ጥናቱን የምሰራዉ የሁለተኛ ዲግሪ ለማግኘት ነዉ።

**አላማ:** ይህን ጥናት የምሰራዉ ከላይ በጥናቱ አካል እንደገለፅኩት የመመረቂያ ጥሁፍ ለማዘጋጀት ሲሆን የጥናቱ ግኝት የተማሪዎችን ትራክማን ለመከላከል የሚያስችል እዉቀትና ተግባርን ለማወቅና ለሚመለከተዉ አካል እንደግብዓት ለማበርከትም ነዉ።

የጥናቱ አካሄድ ወይም ሂደት

ጥናቱ ላይ ለመሳተፍ ፍቃደኛ ከሆኑ ከ20-30 ደቂቃ የሚወስድ መጠይቅ ይሞላሉ። መጠይቁ ከፊት ንፅህና ጋር ተያያዥነት ያላቸዉን የእዉቀትና የተግባር ሀሳቦችን የያዘ ነዉ። ጥያቄ ካለዎት መጠየቅ ይችላሉ።

በጥናቱ ለመሳተፍ ፍቃደኛ ነዎት?

አዎ ፍቃደኛ ነኝ \_\_\_\_\_ አይ ፍቃደኛ

አይደለሁም \_\_\_\_\_

ፊርማ \_\_\_\_\_

አመሰግናለሁ።

**Annex. C- Questionnaire/English**

Addis Ababa University

School of Social Work

The study will be focusing on Exploring the Knowledge and Practice of Face Cleanliness to Ameliorate Trachoma as A Component of Safe Stratagem in Primary School at Lay Gayint Woreda in Gonedr, Amhara Region

#Questionaries’: for primary School Face cleanness improvement, prepared standard by (WHO,2002, WHO,2013).

<b>#Questionaries’ for Primary School Face cleanness improvement, prepared standard by (WHO,2002,WHO,2013)</b>		
1. Gender	Male= 0	Female= 1
2. How old are you? (round months down) (write age in years-----		
3. Have you ever heard health information on trachoma?	No=0	Yes=1
4. Where did you hear the trachoma information?	a) Trachoma volunteers b) Health extension worker c) Mass media (TV, radio, etc) d) Health facility e) From School f) School child g) Other-----	
5. What information about trachoma did you hear?	a) Causes of trachoma b) Transmission of trachoma c) Latrine construction and use d) Face washing e) Antibiotics treatment f) Trichiasis surgery g) Other	
6. Do you have water in your school specifically for washing yourselves?	No=0	Yes=1
7. Do you have the habit to wash your hand s after toilet?	No=0	Yes=1
8. What is the main source of water student uses for drinking?	a) Unprotected spring=1 b) Protected spring=2 c) Unprotected dug well=3	

	d) Hand pump/Tube well / borehole=4 e). Surface water (river, dam, lake, stream) =5 f) Rainwater collection=6	
9. Do you think your water is clean?	No=0	Yes=1
10. How long does a round-trip take to collect water from the source of water used for bathing in the school?	a) <30 minutes=1 b) 30 minutes to 1 hour=2 c) >1 hour=3	
11. How often are these children bathed?	a) Never=0 b) Every other day=1 c) Once a day=2 d) Twice a day=3 e) Three or more times a day=4 f) Other (specify)_____ =99	
12. How often are the faces of children washed?	a) Never=0 b) Every other day=1 c) Once a day=2 d) Twice a day=3 e) Three or more times a day=4 f) Other (specify)_____ =99	
13. Do you use soap?	No=0	Yes=1
14. Hand washing container present?	No=0	Yes=1
15. Water in hand washing container?	No=0	Yes=1
16. Location of hand washing container?	latrine=1	At school round=2

**Part three: Observations check list**

Observations checklist by WHO,2013	No	Yeas
Looking if the student is washing or not at time in the school?		
Looking at the children's face if flies on them or not?		
Looking if the children using soap or not ?		
Evidence of latrine usage (face's in pit)?		
Hand washing container present?		
Water in hand washing container?		
Location of hand washing container?		

**Annex D, Amharic version**

አዲስ አበባ ዩኒቨርሲቲ

የሶሻል ወርክ ት/ቤት

የጥናቱ ትኩረት በላይ ጋይንት ወረዳ አንደኛ ደረጃ ት/ቤቶች የተማሪዎች ከትራክማ መከላከያ ስትራቴጂዎች አንዱ በሆነው የፊት ንጽህና እውቀትና ተግባር ትራክማን ለመቀነስ ያለውን ሚና ለማየት።

**በአንደኛ ደረጃ ት/ቤቶች የፊት ንጽህና ማሻሻልን ለመለካት የተዘጋጁ ጥያቄዎች (የዓለም ጤና ድርጅት**

**2002፣ 2013)**

በአንደኛ ደረጃ ት/ቤቶች የፊት ንጽህና ማሻሻልን ለመለካት የተዘጋጁ ጥያቄዎች (የዓለም ጤና ድርጅት 2002፣ 2013)		
1. ያታ	ወንድ= 0	ሴት= 1
2. ዕድሜ ስንት ነው? (ዕድሜ በዓመት ይጻፉ)-----		
3. ትራክማን በተመለከተ የጤና መረጃ ሰምተው ያዉቃሉ?	የለም=0	አዎ=1
4. የትራክማ መረጃዎችን የት ሰሙ?	ሀ) ከበጎ ፈቃደኞች ለ) ከጤና ኤክስቴንሽን ሰራተኞች ሐ) ከብዙሀን መገናኛ (ቴሌቪዥን፣ ሬዲዮ, ወዘተ) መ) ከጤና ተቋማት ሠ) ከትምህርት ቤት ረ) ከትምህርት ቤት ተማሪዎች ሰ) ሌሎች-----	
5. ስለትራክማ ምን መረጃዎችን ሰሙ?	ሀ) የትራክማ መንስኤዎችን ለ) የትራክማ መተላለፊያ መንገዶችን ሐ) መጠጫ ቤት መስራትና መጠቀም መ) ፊትን መታጠብ ሠ) መድሐኒት መጠቀም ረ) የዓይን ቆብ ፀጉር መቀልበስን በቀዶ ህክምና ማስተካከል ሰ) ሌሎች-----	
6. ለመታጠቢያ የሚሆን የዉኃ አቅርቦት በት/ቤት አለ?	የለም=0	አለ=1

7. ከመጻፍ ሴት መልስ እጅ የመታጠብ ልምድ አለህ/ሽ?	የለኝም=0	አለኝ=1
8. ተማሪዎች ለመጠጥ ውኃ ከየት ይቀዳሉ?	ሀ) ያልታጠረ ምንጭ=1 ለ) የታጠረ ምንጭ=2 ሐ) ንፅህናዉ ያልተጠበቀ ቧንቧ ውኃ=3 መ) ንቱህ ቧንቧ ውኃ/ ንፁህ የእጅ መነቅነቂያ ቧንቧ ውኃ/የክርሰምድር ውኃ=4 ሠ). ወራጅ ውኃ/የወንዝ ውኃ =5 ሰ) የዝናብ ውኃ=6	
9. የመጠጥ ውኃዉ ንፁህ ነዉ?	አይደለም=0	ንፁህ ነዉ=1
10. በትምህርት ቤት ለንፅህና መጠበቂያ የሚዉል ውኃ ለመቅዳት ደርሶ መልስ ስንት ሰዓት ይወስዳል?	ሀ) <30 ደቂቃ=1 ለ) 30 ደቂቃ እስከ 1 ሰዓት=2 ሐ) >1 ሰዓት=3	
11. መቼ መቼ ንጽህና ለመጠበቅ ትታጠባለችሁ?	ሀ) በፍፁም አልታጠብም=0 ለ) አልፎ አልፎ=1 ሐ) በቀን አንድ ጊዜ=2 መ) በቀን ሁለት ጊዜ=3 ሠ) በቀን ሶስት እና ከዚያ ጊዜ በላይ=4 ረ) ሌላ ካለ (አብራሩ) _____=99	
12. ምን ያህል ህፃናት ፊታቸዉን ይታጠባሉ?	ሀ) በፍፁም አልታጠብም=0 ለ) አልፎ አልፎ=1 ሐ) በቀን አንድ ጊዜ=2 መ) በቀን ሁለት ጊዜ=3 ሠ) በቀን ሶስት እና ከዚያ ጊዜ በላይ=4 ረ) ሌላ ካለ (አብራሩ) _____=99	
13. ሳሙና ይጠቀማሉ?	የለም=0	አዎ=1
14. የእጅ መታጠቢያ ጀሪካን/ታንከር አለ?	የለም=0	አለ=1
15. የእጅ መታጠቢያ ጀሪካን/ታንከር በዉስጡ ውኃ አለዉ?	የለዉም=0	አለዉ=1
16. የእጅ መታጠቢያ ጀሪካን/ታንከር የተቀመጠበት ቦታ?	ከመጻፍ ሴት አጠገብ=1	በት/ቤቱ ምድረ ግቢ=2

**የምልከታ ቼክ ሊስቶች**

የምልከታ መጠይቅ በአለም ጤና ድርጅት, 2013	የለም	አዎ
በትምህርት ቤቱ ምድረ ግቢ ተማሪዎች ይታጠባሉ?		
በህፃናት ፊት ላይ ዝንቦች ይታያሉ?		
ህፃናት ሲታጠቡ ሳሙና ይጠቀማሉ ?		
መፀዳጃ ቤቱ አጠቃቀም/የመፀዳጃ ቤቱ ወለልና ቀዳዳዉ አካባቢ ርጥበት አለዉ?		
የእጅ መታጠቢያ ታንከር አለ?		
በእጅ መታጠቢያዉ ታንከር ዉስጥ ዉኃ አለዉ?		
የእጅ መታጠቢያዉ ታንከር ከመፀዳጃ ቤቱ አጠገብ ነዉ?		