WOLKITE UNIVERSITY

COLLEGE OF MEDICINE AND HEALTH SCIENCES DEPARTMENT OF PUBLIC HEALTH

PREVALENCE OF INTESTINAL PARASITES AND ITS PREDISPOSING FACTORS AMONG PATIENTS REQUESTED FOR STOOL EXAMINATION AT AGENA PRIMARY HOSPITAL, GURAGE ZONE, ETHIOPIA

BY:

1 FETIYA TENESHU

2 ZULEYKA HASSEN

3 SHIFA BERTA

A RESEARCH REPORT SUBMITTED TO WOLKITE UNIVERSITY COLLEGE OF MEDICINE AND HEALTH SCIENCES, DEPARTMENT OF PUBLIC HEALTH FOR PARTIAL FULFILLMENT OF BACHELOR OF SCIENCE DEGREE IN PUBLIC HEALTH.

WOLKITE, ETHIOPIA

PREVALENCE OF INTESTINAL PARASITES AND ITS PREDISPOSING FACTORS AMONG PATIENTS REQUESTED FOR STOOL EXAMINATION AT AGENA PRIMARY HOSPITAL, GURAGE ZONE, ETHIOPIA

BY: 1 FETIYA TENESHU

2 ZULEYKA HASSEN

3 SHIFA BERTA

ADVISOR; Mr. JEMAL BEDEWIM (BSc, MSc)

; Mrs. ASEGEDECH WONDIMU (BSc, MSc)

ACKNOWLEDGMENT

First of all we would like to give praise to almighty GOD, Who made everything possible. We also thank Wolkite University College of Medicine and health sciences Department of public health for preparing this program.

Next we would like to express our deep appreciation to our advisors Mr. Jemal Bedewi (BSc, MSc) and Mrs. Asegedech Wondimu (BSc, MSc) for desirable effort to give us ideas, guidance, comments and correction, from beginning of topic selection to the end of our study.

We would like thanks to the management and staff of Agena Primary Hospital for granting us permission to conduct this study within their institution .We also grateful for their cooperation and assistance in facilitating the data collection process. Their willingness to share their knowledge and expertise has been instrumental in the successful execution of this research.

We would like to express our appreciation to all the participants who willingly volunteered their time and provided the necessary stool samples for this study. Their cooperation and willingness to participate have played a crucial role in generating meaningful data and insights.

TABLE OF CONTENTS

Table of Contents **Page**

LIST OF TABLES:

LIST OF FIGURES:

LIST OF ACRONYMS

IP – Intestinal Parasite

IPIs – Intestinal Parasitic Infections

NGO–Non-Governmental Organization

WHO – World Health Organization

S.E – Stool Examination

UN – United Nations

APH – Agena Primary Hospital

CDC – Center for Disease Control

ABSTRACT

Background: In low-income nations, intestinal parasite infections (IPIs) have been important public health issues. Environmental, socioeconomic, and geographical factors, among others, may influence the distribution of intestinal parasites. Intestinal parasitic infections would cause health and social difficulties such as mal-absorption, diarrhea, diminished job ability, and slower growth. Entamoeba histolytica, Giardia lamblia, Hookworm and cryptosporidium species are one of the leading causes of morbidity in Africa, particularly in Sub-Saharan Africa and Ethiopia.

Objective: To determine the prevalence of IPIs and its predisposing risk factors among patients requested for stool examination at Agena Primary Hospital, Gurage Zone, Ethiopia during the study period.

Method: From November 1 to January 7, 2025, a hospital-based cross-sectional study with 194 study participants was undertaken. Convenience sampling technique was used to identify study participants. Microscopically, stool samples were analyzed utilizing direct wet-mount and formal-ether concentration procedures. To gather information about the predisposing risk factors, socio-demographic characteristics and independent variables, a face to face interview was used using a structured questionnaire. And the data was analyzed with SPSS version 25 software to discover the risk variables for intestinal parasite infection. The chi-square test was used to see the relationship between dependent and independent variables, P-values less than 0.05 are deemed significant.

Results: According to the study out of 194 patients were examined, of which 117 (60.3%) were female and 77 (39.7%) were male. From sampled population 87(44.8%) of patients were positive for IPIs, where 83(93.3%) for single infection and 4(2.06%) for double infection, respectively, while 107(55.2%) were negative for any parasites. The most common parasite was *Entamoeba histolytica/dispar* 30(15.4%), *Giardia lamblia* 27(13.9%), *Ascaris lumbricoides* 13(6.7%), *Hookworm* 8(4.1%), *Entamoeba histolytica/dispar & Giardia lambilia* 4(2.06%) and *Taenia saginata* 5(2.6%), respectively. Habit of hand washing before meal and after defecation, latrine availability and usage, lack of shoe wearing habit trimming finger nail and usage of water treatment were significant factors($p<0.05$).

Conclusion: A relatively low prevalence of intestinal parasite infections was observed among patients of Agena health center requested for the stool examination.

Key words: Prevalence, Intestinal parasites, Agena Primary Hospital, Ethiopia

CHAPTER ONE

1. INTRODUCTION

1.1. Background

Intestinal parasites are living organism living in or having some metabolic dependence on another organism known as host. Those parasites cause significant morbidity and mortality though out the world, particularly in developing countries and in persons with co-morbidities the resulting diseases have socio-economic impact, absence from work and school, treatment expense and costs (1). There are two main types of intestinal parasites: helminthes and protozoa. Helminthes are worms with many cells Tapeworms, pinworms, and roundworms are among the most common helminthes in the United States. In their adult form, helminthes cannot multiply in the human body. Protozoa which include, amoebae, toxoplasmosis, cryptosporidium, Giardia, Sarcocystis and Trichomonas vaginitis (T.vaginalis) have only one cell, and can multiply inside the human body, which contributes to their survival and enables serious infections to develop. Transmission typically occurs by fecal-oral route. In the U.S., the most common protozoa in 2004 are Giardia and cryptosporidium (2).

Intestinal helminthes are so named because their life history requires them to spend time in the human alimentary tract or because they cause pathological alterations. Ascaris lumbricoides, Trichuris trichiura, and hookworm are the most common helminthic parasites, affecting approximately one-sixth of the global population (3). In addition to helminthic parasites, protozoa parasites such as Giardia lamblia, E. histolytica, and cryptosporidium infections are extremely frequent in underdeveloped countries such as Ethiopia and are the leading cause of intestinal illness in children (4). Giardia intestinalis, Entamoeba histolytica, Cyclospora cayetanensis, and Cryptosporidium spp. are the most prevalent intestinal protozoan parasites. These intestinal protozoa parasites produce disorders such as giardiasis, amoebiasis, cyclosporidiosis, and cryptosporidiosis, which are all linked with diarrhea (5). G. intestinalis is the most frequent parasite cause of diarrhea in the developed world, and it is also widespread in underdeveloped countries. Amoebiasis is the third highest cause of death from parasitic infections worldwide, with developing-country residents bearing the brunt of the burden.

According to the World Health Organization (WHO), around 50 million people worldwide suffer from invasive amoebic illness each year, resulting in 40-100,000 fatalities (6).

The distribution of helminthes and protozoan parasites varies by geography. Enteric protozoa, primarily Giardia intestinalis, including G. lamblia (Giardia lamblia) and Entamoeba spp., are prevalent in underdeveloped nations, were common in children.(7). The lack of access to clean water, better sanitation, and appropriate hygiene (WASH) are key contributions to the prevalence of intestinal parasite infections. Unsafe drinking water, inadequate sanitation, and a lack of cleanliness pose health concerns, particularly to children in low- and middle-income countries (8). Intestinal parasitic infections are among the most common infections worldwide. Epidemiological research carried out in different countries has shown that the social and economic situation of the individuals is an important cause in the prevalence of intestinal parasite (9).

The role of intestinal parasites in causing morbidity and mortality as well as in the pathogenesis of other infectious diseases differs from species to species. Similarly the distribution and prevalence of various species of intestinal parasites also differs from region to region because of several environmental, social and geographical factors. (10).

There are two main types of intestinal parasites: helminthes and protozoa. Helminthes are worms with many cells Tapeworms, pinworms, and roundworms are among the most common helminthes in the United States. In their adult form, helminthes cannot multiply in the human body. Protozoa which include, amoebae, toxoplasmosis, cryptosporidium, Giardia, Sarcocystis and Trichomonas vaginitis (T.vaginalis) have only one cell, and can multiply inside the human body, which contributes to their survival and enables serious infections to develop. Transmission typically occurs by fecal-oral route. In the U.S., the most common protozoa in 2004 are Giardia and cryptosporidium (2).

Intestinal helminthes are so named because their life history requires them to spend time in the human alimentary tract or because they cause pathological alterations there. Ascaris lumbricoides, Trichuris trichiura, and hookworm are the most common helminthic parasites, affecting approximately one-sixth of the global population (3). In addition to helminthic parasites, protozoa parasites such as Giardia lamblia, E. histolytica, and cryptosporidium infections are

extremely frequent in underdeveloped countries such as Ethiopia and are the leading cause of intestinal illness in children (4). Giardia intestinalis, Entamoeba histolytica, Cyclospora cayetanensis, and Cryptosporidium spp. are the most prevalent intestinal protozoan parasites. These intestinal protozoa parasites produce disorders such as giardiasis, amoebiasis, cyclosporidiosis, and cryptosporidiosis, which are all linked with diarrhea (5). G. intestinalis is the most frequent parasite cause of diarrhea in the developed world, and it is also widespread in underdeveloped countries. Amoebiasis is the third highest cause of death from parasitic infections worldwide, with developing-country residents bearing the brunt of the burden. According to the World Health Organization (WHO), around 50 million people worldwide suffer from invasive amoebic illness each year, resulting in 40-100,000 fatalities (6).

The distribution of helminthes and protozoan parasites varies by geography. Enteric protozoa, primarily Giardia intestinalis, including G. lamblia (Giardia lamblia) and Entamoeba spp., are prevalent in underdeveloped nations, were common in children.(7). The lack of access to clean water, better sanitation, and appropriate hygiene (WASH) are key contributions to the prevalence of intestinal parasite infections. Unsafe drinking water, inadequate sanitation, and a lack of cleanliness pose health concerns, particularly to children in low- and middle-income countries (8). Intestinal parasitic infections are among the most common infections worldwide. Epidemiological research carried out in different countries has shown that the social and economic situation of the individuals is an important cause in the prevalence of intestinal parasite (9).

The role of intestinal parasites in causing morbidity and mortality as well as in the pathogenesis of other infectious diseases differs from species to species. Similarly the distribution and prevalence of various species of intestinal parasites also differs from region to region because of several environmental, social and geographical factors. (10).

1.2 Statement of the Problem

Parasitic infections have a worldwide distribution and constitute considerable public health problems, especially in developing countries, and may be considered as the cancers of developing nations. It is estimated to affect around 3.5 billion people globally and 450 million are ill as a result of these infections, the majority being children. In some tropical areas, the

prevalence reaches nearly 100%. In the year of 2006, over two billion people worldwide are affected by intestinal protozoans and helminthes. Intestinal helminthic infections are most common among school-age children and tend to be of high intensity in this age group. The World Health Organization (WHO) reported that intestinal parasitic infections (IPI) are prevalent where poverty prevails, where sanitation is inadequate or non-existent and where more health awareness and care are needed. All these factors are present in most developing countries, particularly in rural communities. Most will not face this reality or even want to think about this subject and will continue in their suffering (10, 11).

According to global estimates one of the most widespread infectious diseases in Asia, Africa, and Latin America. After diarrheal disease and tuberculosis, ascariasis and hookworm disease were third and fourth, with about a billion cases per year. Malnutrition was ranked fifth, with other IP illnesses (Trichuriasis, Amoebiasis, and Giardiasis) being seventh, ninth, and tenth, respectively. While there is no data measuring parasite-caused diarrhea, it can be acute or chronic, intermittent or persistent, transient or extended. Furthermore, long-term infections with Ascaris, Giardia, and hookworms may contribute to or accelerate childhood malnutrition. Because intestinal parasites are common in communities with a high level of diarrhea and malnutrition, and because of their general high prevalence and wide distribution, it can be assumed that intestinal parasite infection has a negative impact on the health of a human population worldwide (7).

In many parts of the world, intestinal parasite infection is a major public health issue. The human gastrointestinal tract is parasitized by a diverse range of parasitic organisms, ranging from microscopic unicellular protozoans to several-meter-long tapeworms. The more common problematic intestinal parasites of man include Entamoeba histolytica, Giardia intestinalis, Balantidum coli, the soil transmitted helminthes Ascaris lumbricoides, Trichuris trichiuria, Necator americnaus, Ancylostoma duodenale and Strongyloides stercoralis and a wide array of other intestinal nematodes, trematodes, and cestodes (12).

Intestinal parasites infect humans in a variety of ways. Their infectious stages can be fecal, water-borne, soil-borne, food-borne, air or dust-borne, or mechanically transferred by insects and other pests. Because of their extended lifespans and ease of infection transmission, most IP infections are recurring and persistent. Furthermore, the majority of intestinal infections are

chronic illnesses with a high prevalence and lengthy duration, as well as loosely defined boundaries between clinically in apparent and overt, detectable disease (9). Intestinal parasite infections are found almost everywhere on the planet, with high prevalence rates in many areas. The ten most prevalent illnesses in the world are amoebiasis, ascariasis, hookworm infection, and trichuriasis. Other parasitic illnesses of local or regional relevance include abdominal angiostrongyliasis, intestinal capillariasis, and strongyloidiasis. The discovery of safe and effective medications, the refinement and simplification of some diagnostic processes, and breakthroughs in parasite population biology have made prevention and control of these illnesses more achievable than ever before (13).

The amount of harm caused by intestinal parasitic infections to the health and welfare of individuals and communities is determined by: (a) the parasite species; (b) the intensity and course of the infection; (c) the nature of interactions between the parasite species and concurrent infections; (d) the population's nutritional and immunological status; and (e) a variety of socioeconomic factors. Seasonal and climatic variables can influence all of the following aspects. Thus, while it is difficult to quantify the suffering caused by infectious diseases in general, this is especially true in the case of intestinal parasite infections because so many cases of the diseases (17).

In Sub-Saharan Africa, parasite infection is the most serious public health issue. In addition to causing morbidity and mortality, infections with intestinal parasites have been linked to physical weakness and poor academic performance. Behavioral, biological, environmental, socioeconomic, and health-care system factors all influence parasitic infection (18).

It is estimated that up to 250 million persons in Sub-Saharan African nations are infected with one or more types of intestinal nematodes (16). Due to low living standards, poor environmental cleanliness, an unsafe human waste disposal system, insufficiency, and a lack of safe water supply, intestinal parasite diseases are common in Ethiopia (14).

The quantity of intestinal parasites is severe in underdeveloped countries such as Ethiopia, which has financial limits to finance everyday life, a lack of pure water supply, and a sedentary lifestyle. Furthermore, the majority of study done did not include all ages, resulting in exclusion criteria that did not encompass the entire population. As a result, this study may fill a void. The goal of

this study is to identify the prevalence and risk factors for intestinal parasite infections.In Ethiopia, intestinal helminths such as *T. trichiura*, *A. lumbricoides*, and hook worm are more widespread, causing numerous infections. Previously, epidemiological surveys drowned out the importance of the severity of these intestinal parasite illnesses in terms of morbidity and control (15)..

1.2. Significance of the Study

The study helps the health sector system, particularly hospitals and health centers, to pay close attention and raise awareness among responsible bodies by identifying the major predisposing factors and prevalence of parasite infection in the Agena primary hospital population.

The study gives baseline data for people interested in studying disorders associated with intestinal parasites, and it will also aid in the enhancement of researcher understanding on the parasitic infection.

CHAPTER TWO

2. LITERATURE REVIEW

Intestinal helminthes and protozoan infections have been identified as major sources of illness and disease over the world(20). According to current estimates, at least one-quarter of the world's population is chronically infected with intestinal parasites, with the majority of infected people living in developing countries (18).The prevalence of (IPIS) is 50% in poor nations, but it can reach 95% in certain of them (21).

Infections of the human digestive tract with pathogenic protozoa such as Entamoeba histolytica, Giardia intestinalis, and Cryptosporidium spp. are a major cause of diarrhea and are found globally (22). Estimates of the global prevalence of intestinal nematode infections transmitted by soil are as follows: 1000 million cases of Ascaris lumbricoides; 900 million cases of hookworms (Ancylostoma duodenale and Necator americanus); and 500 million cases of Trichuris trichiura (23). It should be emphasized, however, that because many persons are likely to be infected by more than one species at the same time, the total prevalence of all nematode infections may be lower than the sum of the preceding figures.

Another perspective on the high prevalence of these infections can be gained by noting that the average prevalence figure for *A. lumbricoides* infection in the African population, derived from approximately 300 published studies over the last decade, is 32%, with children (17 years old) showing a higher prevalence rate than adults (> 18 years old). Climate and population density are not taken into account in these calculations. Some countries have overall average prevalence rates ranging from 16 to 48%, and prevalence rates within a country can range from 0% to more than 70% (24). In the United States, the Centers for Disease Control and Prevention (CDC) found parasitic forms of Giardia lamblia in 64901 (15.6%) of over 400,000 sample examines, followed by ova of *Trichuris trichiura* (2.7%), *Ascaris lumbricoides* (2.3%), *Enterobius vermicularis* ova (1.6%), and *Entamoeba histolytica* in 0.6% of all stool specimens (25).

In Brazil, the Ministry of Health's laboratories examined 2.5 million stool samples and discovered a prevalence of *A. lumbricoides* of 59.5%; prevalence rates in different Brazilian states ranged from 26.7 to 97.6%. In 1969, the nationwide prevalence of hookworm infection (mostly *N. americanus*) was 26.5%, according to the same source. Another large survey of 25

000 Malaysian children and adults (from birth to over 60 years of age) indicated that the overall prevalence of intestinal parasite infections was 39.6%, with as much as 89% in a subsample of children aged 6 to 12 years [20]. According to a study conducted in Goshen, Karachi, Pakistan, the prevalence of intestinal parasite infection was determined to be 52.8%. The most frequent parasite was Giardia lamblia, followed by *Ascaris lumbricoides*, *Blastocysts hominis*, and *Hymenolepis nana*. Approximately 43% of children were infected with a single parasite, while 10% were infected with numerous parasites (26).

A study conducted in Saudi Arabia on the prevalence of intestinal parasites among expatriate workers revealed a prevalence of 31.4%. 22.3% had a single infection, whereas 9.1% have several infections that include doubles, triples, and quadruples. Hook worm and A. lumbricoides were the most frequent infections across all ethnic groups (2).

In another study conducted in Nairobi, Kenya, four intestinal worms were studied, accounting for 12.9% of the total. These rates were found to be lower than in two earlier investigations. The most common pathogen was Ascaris lumbricoides, and the least common was Salmonella mansoni. Single worm infection accounts for 8.6% of all infections (27). In Ethiopia, the prevalence of intestinal parasite infection varies across the country. A study conducted in Ethiopia on the prevalence of some common intestinal helminthes infections found that the distribution of the three common helminthes in schoolchildren differed by altitudinal region: *A. lumbricoides* (29% in the highlands, 35% in temperate areas, and 38% in the lowlands), *T. trichiura* (13% on average, with similar prevalence in all altitudinal regions), and hookworm (24% in the lowlands, 15% in temperate areas.(28)

A study on malnutrition and intestinal parasitic infection among school children in Gondar, Northwest Ethiopia found *A. lumbricoides* (17.8%), *T. trichiura* (3.4%), Hook worm (4.3%), *G. lamblia* (9%), *E. histolytica* (2.1%), *S. mansoni* (2.4%), *H. nana* (4.7%), *E. vermicularis* (0.3%) and only two cases of *S. stercoralis* in multiple infections. (0.9%) of people had a single infection. (29).

A cross-sectional survey was carried out in the Mekaneslam District of South Wello, Amhara region. The overall prevalence of intestinal parasite infection was found to be 24.5%. *E. histolytica*/despair (10.83%), *Ascaris lumbricoides* (7.6%), *Giardia lamblia* (1.8%), Hookworm

(1.99%), *Hymenolepis nana* (3.6%), and 0.9% each of *Enterobius vermicularis* and S.stercoralis were found (30).

A recent study in Diga district, East Wollega zone, revealed an overall prevalence of 64.9% intestinal parasite in general and 49.7% hookworm prevalence in particular in the area(29). Another study conducted in the south-eastern part of Lake Langano discovered that 217 (83.8%) of schoolchildren had one or more parasites. Hook worm had the highest prevalence (60.2%), followed by *Salmonella mansoni* (21.7%), *Trichuris trichiura* (14.7%), *Taenia species* (13.9%), Entamoeba histolytica (12.7%), *A.lumbricoids* (6.2%), *Giardia duodonalis* (6.2%), and *Strongyloides stercoralis* (5.8%) (31).

Another study conducted in south central Ethiopia, Shashemene, evaluated the stool of 346 patients, 142 (41%) of whom were males and 204 (59%) were females. From the examined population, 49 (14.2%) of patients tested positive for a single parasite, while 297 (85.8%) tested negative for all parasites. As a result, the overall prevalence rate of intestinal disease among Melka Oda hospital patients was 14.2% (29)

A study done in Jimma in 2021, From a total of 384 patients examined for stool, at Jimma health center, the overall prevalence of intestinal parasitic infection was 79(20.6%), Among them, 23 (6%) were males and 56(14%) females (32).

Thus, the purpose of this study is to quantify the prevalence of infection in patients visiting a health center for medication and to identify the determinant factors and source of infection in the area.

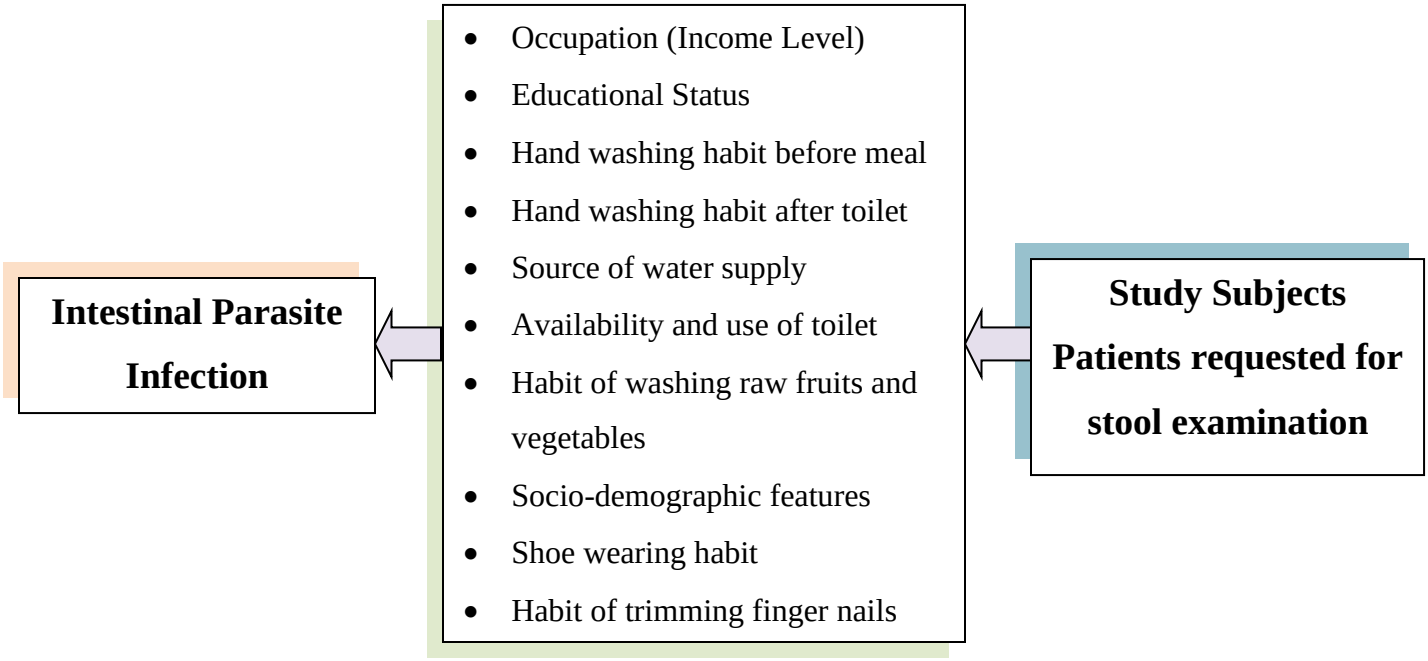

Figure 1: Conceptual Framework of the Study

CHAPTER THREE

3. OBJECTIVES

3.1. General Objective

●To determine the prevalence of intestinal parasites infection and its predisposing factors among patients requested for stool examination at Agena Primary Hospital, Gurage Zone, Ethiopia, from November 1 to January 7, 2025.

3.2. Specific Objectives

●To determine the overall prevalence of intestinal parasites infection among patients requested for stool examination at Agena primary hospital from November1 – January 7 2025.

●To identify predisposing factors associated with intestinal parasitic infection among patients requested for stool examination at Agena primary hospital from November1 – January 7 2025.

.

CHAPTER FOUR

4. METHODS AND MATERIALS

4.1. Study Area and Period

This study was conducted in Agena Primary Hospital, Gurage Zone, Central Ethiopia Region of Ethiopia which is located 179 km away from Addis Ababa. The Gurage Zone is geographically located in the rift valley region at a latitude of 8017’ North and longitude of 370 47’ East. It lies in the altitudinal ranges of 1500-2400 meters above sea level. According to the national Central Statistical Agency 2007 report, Gurage Zone has a total population of 1,577,074, of which 763,643(48.4%) were males and 813,431 (51.6%) were females. The area also has a total of 28,856 (1.98%) people living in rural and 121,603 (9.49%) people living in urban areas. The distinct also has two periods of rainfall patterns, the main and short rain seasons, which occur from June to September and March to April respectively. Agena Primary Hospital is the only public primary hospital in the Agena Town, and Agena is a town found in the Edja Woreda Gurage Zone which is 40 Km away from Wolkite city. The study population was all patients that were requested for stool examination for intestinal parasites at Agena Primary Hospital from November1-January7 2025

4.2. Study Design

Hospital based cross-sectional study was conducted from November 1 to January 7, 2025.

4.3. Population

4.3.1. Source Population

All patients attending in Agena Primary Hospital during study period .

4.3.2. Study Population

The patients who were ordered for laboratory stool examination during the study period.

4.4. Inclusion and Exclusion Criteria

4.4.1. Inclusion criteria

- ✓ All patients who were requested for laboratory stool examination.

- ✓ Those patients who were willing to give consent or agreement for their participation.

4.4.2. Exclusion criteria

- Patients who took anti-helminthic drug prior to the day of recruitment.
- Patients who will not willing to participate in the study.
- Patients who are mentally ill.
- Patients who doesn't fulfill the eligibility criteria.

4.5. Sample Size and Sampling Techniques

4.5.1. Sample Size

The sample size (n) was determined by using a single population proportion formula considering the following assumptions. $Z_{a/2}$ = critical value for normal distribution at 95% confidence level which equals 1.96 (Z value at alpha = 0,05. p= 20.6% as it was reported by study done in Jimma [31] and d= margin of error (0.05). So, sample size was;

$$n = \frac{(Z\alpha/2)^2 \times p(1-p)}{d^2}$$

Where: n= is the minimum sample size required

Z =is the critical value for a given confidence interval

P =prevalence of intestinal parasites among patients

d = is margin of error (0.05)

$$\mathbf{n} = \frac{(1.96)^2 \times 0.206\ (1 - 0.206)}{(0.05)^2}$$

Then, $n = (1.96)^{2*} \times 0.206\ (0.794)/0.0025$

$n = 3.8416 \times 0.1636/0.0025$

n = **250**

Since the source of population is less than 10000 (the average monthly patient flow rate in the past three consecutive years indicate an average of 713 patient per month obtained from the triage center of agena primary hospital as shown below)

Nf =n/1+n/N

Nf=250/1+250/713 =185.185

The final sample size including 5% of non-respondent rate was **194.**

4.5.2. Sampling Technique

Convenience sampling technique was used.

4.6. Study Variables

4.6.1. Dependent Variable

- ✓ Prevalence of Intestinal parasitic infect

4.6.2. Independent Variables

- ✓ Age
- ✓ Sex
- ✓ Occupational status(income level)
- ✓ Educational Status
- ✓ Hand washing habit before meal
- ✓ Hand washing habit after toilet
- ✓ Source of utility water
- ✓ Availability and use of toilet
- ✓ Habit of washing raw fruits and vegetables before consumption
- ✓ Shoe wearing habit

- ✓ Habit of trimming finger nail

4.7. Data Collection and Stool Examination

4.7.1. Data Collection

After permission was obtained from the hospital director and the head of the laboratory, to collect all the necessary information a face to face interview was used using a pre tested structured questionnaire. This information includes a structure format which comprises socio-demographic characteristics and other independent variables for assessing its predisposing factors. The stool specimen was collected properly from the patients by using stool cups with applicator stick to bring sufficient amount of stool specimen. Then the stool was studied macroscopically before and microscopically after concentration, direct wet mount preparation, and detection of distinct stages of parasites. Data from laboratory findings and questionnaires from similar groups was collected and analyzed together.

4.7.2. Stool specimen collection and examination

Stool specimen was collected in clean dry container to bring stool specimen following the interview. Each specimen was prepared by direct wet mount for examination and parasite was identified based on WHO recommended procedure by trained laboratory technologist. Each patients was asked to bring fecal specimens using properly labeled clean plastic stool collecting cup with an applicator stick/spoon for adding about 5g of fresh stool. The direct smear examination was performed on fresh stool samples mixed with 0.85%saline, at the field laboratories with in less than 30min of collection by the laboratory technologists. All the developmental stages of the parasites (trophozoite , cyst, egg, larvae and adult) were recorded.

4.8. Data Processing and Analysis

The collected data was carefully analyzed using SPSS Version 25 software, taking into account the relationship between dependent and independent factors. Statistical analysis was carried out using SPSS package to see the relation between intestinal parasite infection and its related predisposing factors. The chi-square test was used to see the relationship between variables, and the results were displayed in a table and figures in a descriptive style. P-values less than 0.05 are deemed significant.

4.9. Quality Control

To obtain trustworthy results from the study, the patient's stool sample was collected, processed, and evaluated in accordance with SOP. The three quality assurance steps were followed at each step (pre-analytical, analytical, and post-analytical).

4.10. Ethical Consideration

Ethical clearance was obtained from Wolkite University College of Medicine and health sciences department of public health for data collection, the objective of the study in consultation with the ethical review board, approve the study proposal. The proposal examined by the school adviser once it has been authorized. Agena Primary Hospital provided permission. The purpose of the study was explained to participants, and they were guaranteed that their data was kept confidential. Prior to data collection, all participants were provided informed consent.

4.11. Result Dissemination

The finding of the study will be disseminated to Wolkite University, College of medicine and health sciences department of public health, Agena primary hospital. Furthermore the finding will be presented on appropriate seminars conferences and workshops and publishing with scientific journal will be considered.

4.11 Operational Definition

- ✓ Finger nail cutting= cutting the end of finger nail regularly to prevent accumulation of dirty substance.
- ✓ Hygiene--The degree of cleanliness expressed by an individual or humanity .this involves food, personal and community cleanliness.
- ✓ Sanitation= The disposal of general wastes from the environment with an aim of keeping the human environment clean and free from disease causing agent.
- ✓ Shoe wearing habit= regularly shoe wearing so it protect contaminating from the environment.
- ✓ Habit of hand washing = cleaning hands with soap and water after toilet and before meal
- ✓ Eating raw meat= uncooked not roasted

- ✓ Latrine usage = regularly using toilet which is well protected from spring water.
- ✓ Waste disposal = provides a sanitation facility which is safe, reliable, private protected from whether and ventilated to minimize risk of spread of infection.

CHAPTER FIVE

5. RESULTS

During the study period a total of 194 patients were examined, of which 117(60.3%) were female and 77(39.7%) were males. From sampled population 87(44.8%) of patients were positive for IPIs, where 83(93.3%) for single infection and 4(2.06%) for double infection, respectively, while 107(55.2%) were negative for any parasites. Therefore, the overall prevalence rate of intestinal parasites among patients of Agena Primary Hospital was 44.8%.

5.1 Socio-demographic characteristics

Table 1; Socio-demographic characteristics of the study participants at Agena primary hospital who were requested for stool examination.

Variable	Categories	frequency	%
Age	0-9	18	9.2%
	10-19	42	21.6%
	20-29	36	18.6%
	30-39	37	19.1%
	40-49	18	9.3%
	50-59	23	11.9%
	60-69	20	10.3%
Sex	Male	77	39.7%
	Female	117	60.3%
Educational status	Illiterate	74	38.1%
	Primary	49	25.3%
	Secondary	30	15.4%
	Diploma	23	11.9%

	Degree	14	7.2%
	Others	4	2.06%
Occupational status	Employed	18	9.3%
	Private work	24	12.4%
	Farmer	51	26.3%
	Merchant	26	13.4%
	Student	43	22.2%
	Driver	12	6.2%
	House wife	19	9.8%
	Others	1	0.52%
Residence	Urban	129	66.5%
	Rural	65	33.5%
Monthly income	1000-4000	47	24.2%
	4001-6000	51	26.3%
	6001-10,000	59	30.4%
	>10,000	37	19.1%
Marital status	Married	109	56.2%
	Unmarried	70	36.1%
	Widowed	10	5.2%
	Divorced	5	2.6%
Family size	1-2	3	1.5%
	3-5	99	51.0 %
	6-10	92	47.4%

5.2 Prevalence of intestinal parasites

From the total of 194 patients, the overall prevalence of parasitic infection among patients were 87(44.8%). And 107(55.15%) patients were negative for any parasitic infection.

Five species of intestinal parasites were detected in the study. *E.histolytica/dispar* was the most frequently identified species, followed by *G. lamblia*, *Ascaris lumbricoides*, *Hookworm and Taenia saginata* respectively, and4(2.06%) were positive for double infection.

Frequency intestinal parasite identified in the study is presented in figure 2 below. Five species of intestinal parasites were detected in the study.

Table 2: Frequency of intestinal parasite identified in the study.

		Frequency	Percent
Laboratory finding	Ova/parasite seen	87	44.8
	No Ova/parasite seen	107	55.2
If Ova/parasite seen	*Entamoeba histolytica/dispar*	30	15.4
	Giardia lamblia	27	13.9
	Ascaris lumbricoides	13	6.7

	Hookworm	8	4.1
	Entamoeba histolytica/dispar and *Giardia lamblia*	4	2.06
	Taenia saginata	5	2.6

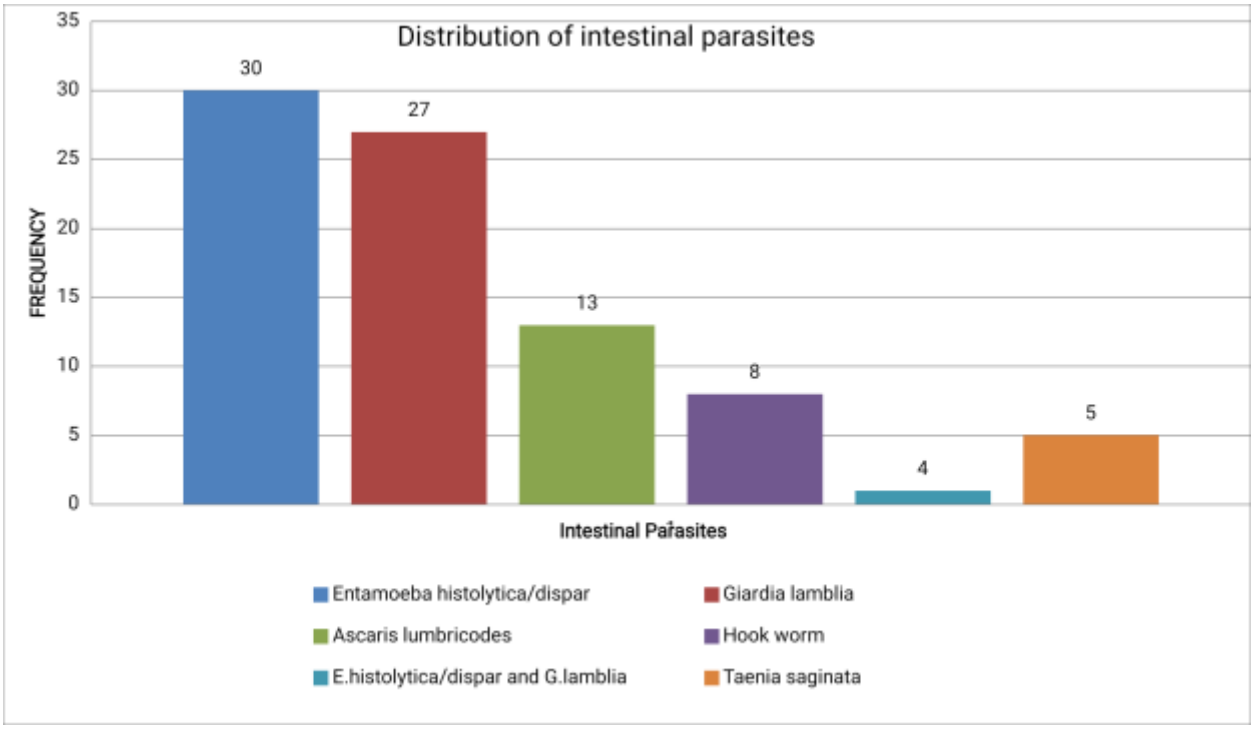

Figure 2: Frequency of intestinal parasite identified in the study, APH, Gurage, 2025.

5.3 Predisposing factors for intestinal parasitic infections

Among the examined patients 37(48.1%) of male and 61(52.1%) of female patients were found to be positive for intestinal parasitic infection. Even though female patients were affected more

than male, there was no statistically significant relation between sex and intestinal parasitic infection.

Among the examined patients with in the age range of 0-9, 9(50.0%) were positive, of 10-19, 28(66.7%) were positive, of 20-29, 13(36.1%) were positive, of 30-39, 17(45.9%) were positive, of 40-49**,** 7(38.9%) were positive, of 50-59 13 (56.5%) were positive, of 60-69 11 (55%) were positive for parasitic infection. There was no statistically significant between intestinal parasitic infection and Age.Concerning their educational status 74(38.14%) of patients were illiterate among them 44(59.5%) were positive for parasitic infection. 120(61.9%) of patients were literate and 54(27.8%) of them were positive for parasitic infection.

The prevalence of intestinal parasites was high among the illiterate patients and low among the literate patients and there was statistically significant relation between intestinal parasitic infection and educational status.

There is no statistically significant association between intestinal infection, sex, marital status, family size and occupational status of the patients ($p>0.05$). In contrast, other socio-demographic variables like educational status and residence showed significant association

Table 2: Intestinal parasites by socio demographic characteristics among patients requested for stool examination at Agena primary hospital.

Variable	Categories	Intestinal parasitic infection						P-value for Chi-square
		Positive		Negative		Total		
			%		%		%	
	0-9	9	50%	9	50%	18	9.2%	
	10-19	28	66.7%	14	33.3%	42	21.6%	

Age	20-29	13	36.1%	23	63.9%	36	18.6%	0.165
	30-39	17	45.9%	20	54.1%	37	19.1%	
	40-49	7	38.9%	11	61.1%	18	9.3%	
	50-59	13	56.5%	10	43.5%	23	11.9%	
	60-69	11	55%	9	45	20	10.3%	
Sex	Male	37	48.1%	40	51.9%	77	39.7%	0.578
	Female	61	52.1%	56	47.9%	117	60.3%	
Educational status	Illiterate	44	59.5%	30	40.5%	74	38.1%	0.047
	Primary	29	59.2%	20	40.8%	49	25.3%	
	Secondary	11	36.7%	19	63.3%	30	15.4%	
	Diploma	7	30.4%	16	69.6%	23	11.9%	
	Degree	6	42.9%	8	57.1%	14	7.2%	
	Others	1	25.o%	3	75..0%	4	2.06%	
Occupational status	Employed	9	50%	9	50%	18	9.3%	0.002
	Private work	9	37.5%	15	62.5%	24	12.4%	
	Farmer	25	49.0%	26	51.0%	51	26.3%	
	Merchant	8	30.8%	18	69.2%	26	13.4%	
	Student	34	79.1%	9	20.9%	43	22.2%	
	Driver	4	33.3%	8	66.7%	12	6.2%	
	House wife	9	47.4%	10	52.6%	19	9.8%	
	Others	0	0%	1	100%	1	0.52%	
Residence	Urban	58	29.9%	71	36.6%	129	66.5%	0.029
	Rural	40	61.5%	25	38.5%	65	33.5%	
	1000-4000	16	18.4%	31	29.0%	47	24.2%	

Monthly income	4001-6000	16	18.4%	35	32.7%	51	26.3%	0.164
	6001-10,000	41	47.1%	18	16.8%	59	30.4%	
	>10,000	14	16.1%	23	21.5%	37	19.1%	
Marital status	Married	56	51.4%	53	48.6%	109	56.2%	0.841
	Unmarried	36	51.4%	34	48.6%	70	36.1%	
	Widowed	5	50%	5	50%	10	5.2%	
	Divorced	1	20.0%	4	80.0%	5	2.6%	
Family size	1-2	1	33.3%	2	66.7%	3	1.5%	0.104
	3-5	52	52.7%	47	47.5%	99	51.0 %	
	6-10	45	48.9%	47	51.1%	92	47.4%	

There is statistically significant relation between intestinal parasitic infections and latrine availability and usage, habit of hand washing before meal, habit of hand washing after latrine visiting, source of drinking water , usage of water treatment ,trimming finger nail, shoe wearing habit , habit of eating raw meat , unwashed fruits and vegetables.

Table 4; Environmental and behavioral predisposing factors with intestinal parasitic infections among patients who are requested for stool examination at Agena primary hospital Gurage Ethiopia 2025.

Variables	Categories	Intestinal parasitic infection						% with in laboratory finding	P-value for Chi-square
		Positive		Negative		Sub Total			
			%		%		%		

Latrine availability	Yes	46	42.9%	63	57.8%	109	56.2%	52.9%	0.009
	No	52	61.2%	33	38.8%	85	43.8%	59.8%	
Open field defecation	Always	9	56.3%	7	43.8%	16	8.2%	10.3%	0.04
	Sometimes	68	56.2%	53	43.8%	121	62.3%	78.2%	
	Not at all	21	36.8%	36	63.2%	57	29.4%	24.1%	
Habit of hand washing Before meal	Always	33	41.3%	47	58.8%	80	41.2%	38%	0.008
	Sometimes	42	51.2%	40	48.8	82	42.3%	48.3%	
	Not at all	23	74.2%	9	28.1%	32	16.5%	26.4%	
Habit of hand washing After latrine visiting	Always	17	26.2%	48	73.8%	65	33.5%	19.5%	0.001
	Sometimes	65	63.1%	38	36.9%	103	53.1%	74.7%	
	Not at all	16	61.5%	10	38.5%	26	13.4%	18.4%	

Source of drinking water	Pipe	31	37.8%	51	62.2%	82	42.3%	35.6%	0.028
	Well	44	59.5%	30	40.5%	74	38.1%	50.6%	
	Spring	23	60.5%	15	39.5%	38	19.6%	26.4%	
Usage of water treatment	Yes	32	35.6%	58	64.4%	90	46.4%	36.8%	0.035
	No	55	52.9%	49	47.1%	104	53.6%	63.2%	
Shoe wearing habit	Always	34	38.2%	55	61.8%	89	45..9	39.1	0.027
	Sometimes	53	50.5%	52	49.5	105	54.1%	61%	
Habit of finger trimming	Always	21	31.3%	46	68.7%	67	34.5%	24.13%	0.001
	Sometimes	31	63.3%	18	36.7%	49	25.3%	35.6%	
	Not at all	46	59.0%	32	41.0%	78	40.2%	52.9%	
Habit of eating	Yes	70	63.6%	40	36.4%	110	56.7%	80.5%	

raw vegetables and unwashedfruits	No	28	33.3%	56	66.7%	84	43.3%	32.2%	0.002
Habit of eating raw meat	Yes	69	57.5%	51	42.5%	120	61.9%	79.3%	0.013
	No	29	39.2%	45	60.8%	74	38.1%	33.3%	

The sources of drinking water for the patients were: from pipe 82(42.3%), well 74(38.1%), spring 38(19.6%). From these 31(37.8%) of pipe, 44(59.5%) of well, and 23(60.5%) of river/stream water users were positive for parasitic infection. Among the patients 90(64.4%) treat their water by boiling, filtering or chemical method and among them 32(35.6%) were positive for parasites infection. And 104 (53.6%) do not use any water treatment method, among them 55 (52.9%) were positive for parasites infection.

There was statistically significant association between parasites infection and source of water and usage of water treatment.($p<0.05$)

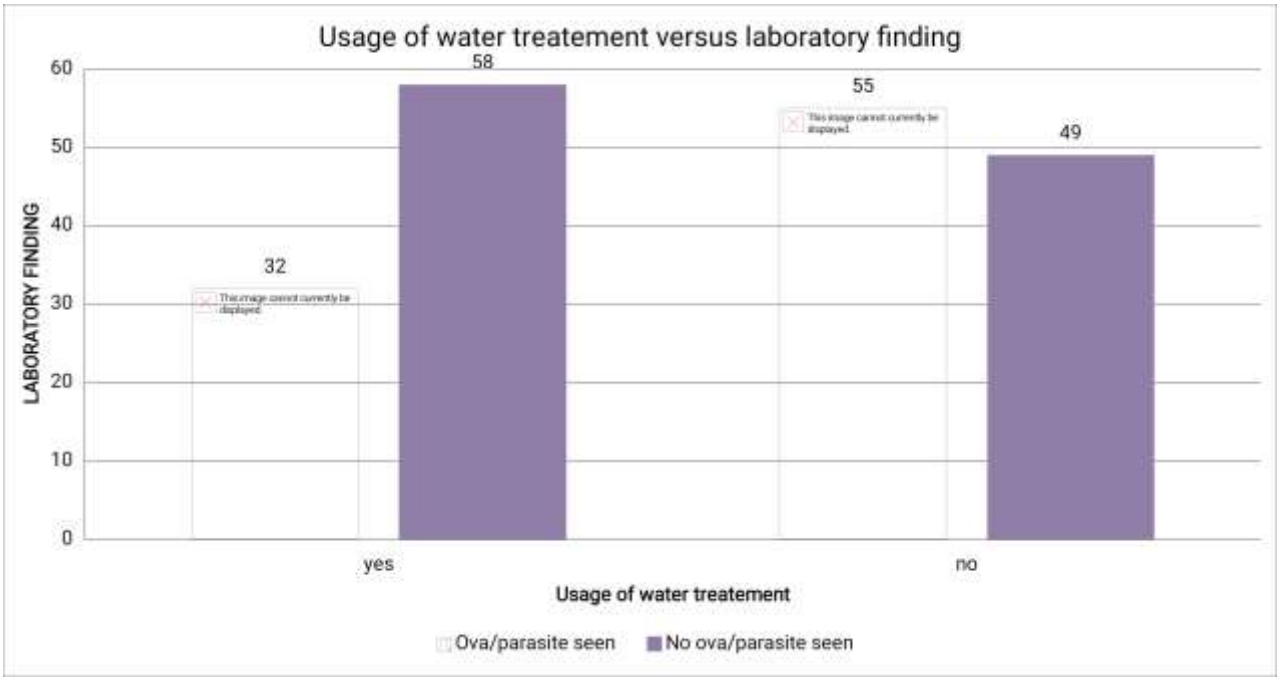

Figure 3; Frequency of intestinal parasite based on water treatment.

From a total of 194 patients 67(34.5%) of the patients always trimmed their finger and 21(31.3%) of them were positive for parasites, while 49(25.3%) sometimes trimmed their finger nail and 31(63.3%) of them were positive for parasitic infection and 78(40.2%) of patients do not trim their hands, of them 46(59.2%) were positive for parasitic infection. There was statistically significant association between parasites infection and finger trimming habit.($p<0.05$)

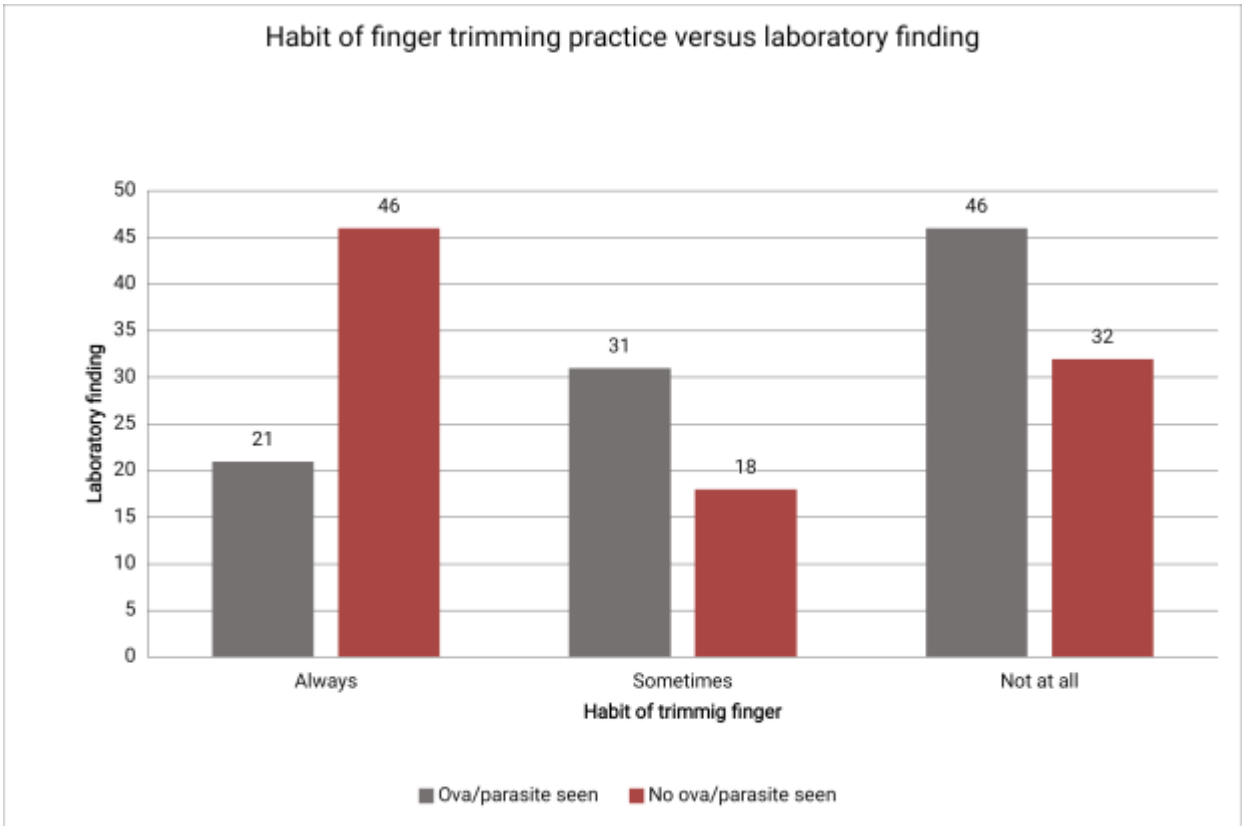

Figure 4; Frequency of intestinal parasite based on Habit of finger trimming practice.

From a total of 194patients 135(69.6%) of the patients were experiencing diarrhea and 69(51.1%) of them were positive for parasites while 59(30.4%) did not have diarrhea and 18(30.5%) were positive for parasitic infection. There was statistically significant relation between parasitic infection and diarrhea.

Among examined patients 155(40.8%) were experiencing abdominal pain, among them 77(49.7%) were positive for parasitic infection and 39(20.1%) do not experience abdominal pain, among them 10(25.6%) were positive for parasitic infection. Also, there is statistically significant relation between parasitic infection and abdominal pain. ($p<0.05$)

Table 5: Intestinal parasites in relation to diarrhea and abdominal pain of patients who were requested for stool examination at Agena Primary Hospital, Gurage, November1-January7 2025.

Variable	Categories	Intestinal parasitic infection						% with in laboratory Finding	P=value for Chi-square
		Positive		Negative		Total			
		#	%	#	%	#	%		
Diarrhea	Yes	69	51.1%	66	48.9%	135	69.6%	79.3%	P= 0.008
	No	18	30.5%	41	69.5%	59	30.4%	20.7%	
Abdominal pain	Yes	77	49.7%	78	50.3%	155	79.9%	88.5%	P= 0.007
	No	10	25.6%	29	74.4%	39	20.1%	11.5%	

CHAPTER SIX

DISCUSSION

The prevalence of intestinal parasitic infection among patients requested for stool examination at Agena Primary Hospital was carried out from November 1 to January 7 to investigate the occurrence of intestinal parasites among patients. From the results, a total of 194 patients were examined for various intestinal parasitic infection.

This study has revealed that the prevalence of intestinal parasites among patients attending Agena Primary hospital is 87(44.8%). This finding is relatively lower than the finding from a study conducted *recently, in Diga district, East Wollega zone, showed an overall* prevalence of 64.9% intestinal parasite in general and 49.7% hookworm prevalence in particular in the area (29). Also lower than another study done in south eastern of lake langano that showed that, 217 (83.8%) of school children had one or more parasites.(31)

But it was high when compared with the study done *in* south central Ethiopia, Shashemene a total of 346 patients stool were examined of whom the overall prevalence rate of intestinal among patients of Melkaoda hospital was 14.2% (29). It was also high when compared with the study done in Jimma in 2021, from a total of 384 patients examined for stool, at Jimma health center, the overall prevalence of intestinal parasitic infection was 79(20.6), among them 23(6%) were males and 56(14% were females (32).

These difference in the findings might be partly explained by the difference in the location of the studies as well as the time period in which the studies were conducted. Also, different socioeconomic status of peoples on different area of the world, also sanitary habits may have implicational relation.

The most common parasite seen in this study area was Entamoeba histolytica. The prevalence of Giardia lamblia in this study area is the 2nd most. Ascaris lumbricoides was the third frequently prevalent parasite. This prevalence is high when compared with the study done in Mekaneslam district of south wello Amhara region, the overall prevalence of intestinal parasites was 24.5%[28]. The least prevalent parasite in this study area was T.sagenita.

The present study found no significant predisposing relation between the infection and sex, marital status, family size and occupational status of the patients. In contrast, other socio-demographic variables like educational status and residence showed significant association.

Among the predisposing factors source of drinking water, habit of washing hand before meal and after defecation, latrine usage, habit of washing raw vegetables and unwashed fruits before consumption absence of shoe wearing habit and finger nail trimming habit take the lion share for aggravating of the opportunistic infections to intestinal parasites. There is also significant predisposing relation between intestinal parasitic infection and usage of water treatment. Absence of hand washing before meal, absence of shoe wearing habit and Lack of knowledge towards the effect of trimming finger nail is something which leads to IP infection.

CHAPTER SEVEN

7. CONCLUSION AND RECOMMENDATIONS

7.1 Conclusion

The study revealed a low prevalence of intestinal parasitic infections (IPIs) among Agena primary hospital who are sent for stool examination. A total five different parasites were identified in which Entamoeba histolytica accounts the largest numbers followed by Giardia lamblia, Ascaris lumbricoides and Hookworm respectively, and Taenia saginata account the lowest number. Multiple predisposing factors such as poor personal hygiene including lack of trimming finger nail, lack of hand ,lack of shoe wearing habit ,washing before meal and after defecation, improper latrine usage, absence of water treatment were significant predisposing factors related with IPIs.

7.2 Recommendations

Further study with large sample size may help to rule out the discrepancies of the results.

Health education should be given to the patients to practice good personal hygiene and environmental sanitation.

Health education on mode of transmission and method of prevention of the parasite should be given to the patients.

REFERENCE

1 Rober M. The risk of pathogenic intestinal parasite infections in kissi municipality, Kenya BMC public health 2008;8:237.

2 Corry Jeb Kucik, Brett V. Sort or, Gary L. Martin, et al (2004). Common Intestinal Parasites, American Family physician (online). Available at https://www.aafp.org/afp/20040301/1161.pdf (Data accessed FEB,2015)

3 Organization WH: Assessing the efficacy of anthelminthic drugs against schistosomiasis and soil-transmitted helminthiases. 2013.

4 Merid Y, Hegazy M, Mekete G, TeklemariamSJTEJoHD: Intestinal helminthic infection among childr (1)en at Lake Awassa area, South Ethiopia. 2001.

5 Davis AN, Haque R, Petri WA, Jr. Update on protozoan parasites of the intestine. Curr Opin Gastroentrol 2002;18:10-4.

6 Petri WA, Jr., Haque R, Lyerly D, Vines RR. Estimating the impact of amebiasis on health. Parasitol Today 2000;16:320-21.

7 Fletcher SM, ML ML, Ellis JT. Prevalence of gastrointestinal pathogens in developed and developing countries: systematic review and meta-analysis.J Public Health Res.2013;2(e9):42–53

8 Séverine Erismann1,2, Serge Diagbouga3, Peter Odermatt1,2, Astrid M. Knoblauch1,2, Jana Gerold1,2,Akina Shrestha : Research on Prevalence of intestinal parasitic infections among schoolchildren in the Plateau Central and Centre-Ouest regions of Burkina Faso : 2015

9 Okay P, Ertug S, Gutekin B, Onen O and Baser E intestinal parasites prevalence and related factors in school public HJ 2004 : 4(64) : 1471-245811

10 Cheesbrough M. Medical Laboratory manual for Tropical Health countries. Technology: Great Britain; 2006: 2nd ed. Vol, 164-396.

11 SubhutiDharmananda, Ph.D., intestinal parasites and pathogens. Institute for Traditional Medicine, Portland, Oregon (online).Available at: http://www.itmonline.org/arts/parapath.htm(Data accessed Feb. 2,2015)

12 Organization WH : Effect of urbanization on intestinal parasitism by S.P.Kan : 1986.

13 Hailegebriel T. Prevalence of intestinal parasitic infection and associated risk factors among students at Dona Berber primary school, Bahir Dar Ethiopia.BMC Infectious Disease. 2017;17(362):1–8.

14 WHO, 1981. International protozoa and helminth infections: reports of WHO scientific Group; Switzerland, Geneva. WHO, Tech. Rep. Ser. 666:18-28.

15 Lekun J. Comparative of common intestinal helminthes infection in different altitudinal region in Ethiopia. *EMJ*.1998; 36 (1): 8.

16 Tesfamichael T, Kloos H. intestinal parasitism, in: zein AZ and Kloos H.(Eds).The ecology of health and disease in Ethiopia ,Addis Ababa:Ministry:1988;214

17 . Naing L, Winn T, Rusil BN. Practical issues in calculating sample size for prevalence studies. AOS. 2006;1:9–14

18 Hall A, suvenchan M. intestinalWorms: strategies to control disease, African Health1994;17:23

19 Organization WH : Effect of urbanization on intestinal parasitism by S.P.Kan : 1986.

20 Ngui R, Ishak S, Chuen CS, Mahmud R, Lim YAL I.Prevalence and Risk Factors.

21 EChacon-czuz"Intestinalprotozoaldiseases"Medicine Journal2003,vol.3.pp1-11.

22 MARTINEZ-PALOMO, A. ET AL. Amoebiasis. Amsterdam, Elsevier, 1986.

23 WARREN, K. S. & MAHMOUD, A. A. F., ed. Tropical and geographical medicine. New York, McGraw-Hill Book Company, 1984.

24 MARSDEN, P. D., ed. Intestinal parasites. Clinics in gastroenterology, 7: 1-243 (1978).

25 EthiopiaWashington C, Winn J. Kinsman's colour atlas and text book of diagnostic microbiology. 6thed.USA:2006.1249

26 MehrajU,HatcherJ,Fatigue G et al. Prevalence and associated factore with intestinal parasitc infection among children in an urban slum of Karachi Pakistan .Middle East Journal of family medicine 2018;3(11):e3080

27 Mantin MA,KinetinMk,womanAW,nona M,MI giroPS.Prevalence of intestinal worm infection among primary school childeran in Nairobi City,Kenya.East Far J Public Health.2008 5(2):86-9

28 Jemaneh L. Comparative prevalence of some common intestinal helminthes infections in different altitudinal regions in Ethiopia. Ethiop Med J. 1998; 36(1):1–8

29 Dita kufa : prevalence of intestinal parasitic infections and associated risk factors , among paitients attending melka oda hospital , shashemene , south central ethiopia: 2017.

30 Tabbed FE.assessment of malaria and intestinal parasites as public health problem based on clinical recording parasitological surveys and KAP in BrennaDistrict,SouthWello,and central-North Ethiopia 2010.

31 Leggesse M Prevalence of intestinal parasite among children in rural area close to the South East of lake-Langno, Ethiopia. Ethiop J 1health dev. 2004; 18(2): 116-120.

32 Betel YA , Kassa TY, Baye MF (2021) Prevalence of intestinal parasitic infections and associated risk factors among patients of Jimma health center requested for stool examination , Jimma Ethiopia ,PLos ONE 16(2) :e0247063

ANNEXES – I

Laboratory Report

Age_____

Sex_____

Code number_____

1. Macroscopic Examination

1.1. Presence of adult worm _____

1.2. Consistency of the stool_____

a. Formed b.Semi formed

c. Loosed. d.Diarrhea

e. Dysentery f. Other_____

1.3. Color of the stool

g. Black h. Brown

I. White j. Bloody

k. Other_____

ENGLISH QUESTIONNAIRE

WOLKITE UNIVERSITY COLLEGE OF MEDICINE AND HEALTH SCIENCES
DEPARTEMENT OF PUBLIC HEALTH OFFICER.

ENGLISH CONSENT SHEET

Consent form

Good morning /afternoon

My name is ----------, I am working as a data collector on prevalence of intestinal parasite infection and associated predisposing factors in patients who are sent for stool examination at Agena primary hospital . It is my pleasure to notify you that you have been identified to participate in this study. I am going to ask you a few questions which are very important to you and your child .Your name will not be written in the form and the information you will give to us is kept confidential. If you do not want to answer all or some of the questions, you do have the right to do so, however, your willingness to answer all of the questions would important to the organization and the patient be appreciated. It doesn't take more than 10minutes.

Would you participate in the study?

Yes----------

NO----------

If the answer is yes, thanks!! To conduct

If the answer is No, thanks!! Transfer for the next respondent

I. Socio-Demographic Data

Patients' Code ----------

1. Age in years_____

2. Sex:-. Male____ Female_____

3. Educational Status: Illiterate_____ Literate _____(put highest grade completed)

4. Residence:- . Urban _____. Rural_____

5. Occupational status:-.Employed _____. Privet worker_____ Farmer _____
Merchant_____ Student_____ Driver_____ housewife _____
Other(specify)_____

6. Estimated Monthly income (in Birr) _____

7. Marital status:- Married____ Unmarried_____ Widowed_____ Divorced_____

8. Family size:- Number_____

II Predisposing factors for intestinal parasite

9. What is your Source of drinking water?

Pipe water ☐ Well water ☐ spring water ☐

10 If the source of water is well or spring .

Is it protected ☐ Unprotected

11 If their source is well or spring. Do you make water treatment at house hold level?

Yes ☐ NO ☐

12 If yes for question no 3 what do usually do to make it safer to drink?

Boiling ☐ Add bleach/chemicals ☐ Strain it through a cloth ☐

13 What type of container do you use to store your drinking water ?

Jerrican ☐ pot ☐ Tanker ☐ Other specify ☐

14 Do you wash the container and cover it? Yes ☐ No ☐

15 If your answer is how frequently do you wash? Always ☐ Sometimes ☐

Not at all ☐

16 Does the family have latrine yes ☐ No ☐.

17 How often do you defecate in open field? . Not at all ☐ Sometimes ☐

Always ☐

18 DO you have hand washing facility near the latrine?

Yes ☐ no ☐

19 Do you wash your hand after latrine visiting? Always ☐ Sometimes ☐

Not at all ☐

20 Do you wash your hand before meal? Always ☐ Sometimes ☐

Not at all ☐

21 Do you wash your hand after child cleaning? Yes ☐ no ☐

22 What do you use to wash your hands?

Water only ☐ soap with water ☐ Ash with water ☐

23 Where does your family dispose refuse?

Pit ☐ open field ☐ municipality service ☐

24 Do you have habit of eating raw meat?

Yes ☐ no ☐

25 Do you have habit of eating unwashed fruits and uncooked vegetables?

Yes ☐ no ☐

26 Do you have the habit of shoe wearing? Always ☐ sometimes ☐ not at all ☐

27 How frequently do you wash your cloth shoes and your body? ? Always ☐ sometimes ☐ not at all ☐

28 Do you have the habit of trimming your fingers nail? Yes ☐ no ☐

If your answer is yes how frequently? Always ☐ sometimes ☐ not at all ☐

Part III Patients' History

3.1 Did you have intestinal parasite before? Yes ☐ No ☐

If yes how long ago it was ----------

3.2 Have you ever diagnosed before for IP? Yes ☐ No ☐

If yes what was the diagnosis specify if you remember----------

3.3 Did you take any medication for intestinal parasites in the last 15 days?

Yes ☐ No ☐ . If yes what type of drug? _____

Part lV: Clinical Manifestation

4.1 Is there diarrhea? Yes ☐ No ☐ If yes:- A. Watery___, B. Mucoid _____ C. Bloody ___

4.2 If yes:- Frequency of diarrhea_____

4. 3 Do you have abdominal pain now? A. Yes B. No

4.5 Do you have fever now? Yes ____ No___

Name of data collector_____

Date_____

Signature_____

Thank you!!

መጠይቅ

ወልቂጤ ዩኒቨርሲቲ

የጤና ና ሕክምና ሳይንስ ኮሌጅ

የህብረተሰብ ጤና ትምህርትክፍል

እኔ -----------በወልቂጤ ዩኒቨርሲቲ የ ህብረተሰብ ጤና ተማሪነኝ።በአሁኑ ወቅት "ጥገኛ የአንጀት ትላትሎች (ተዋህስያን) ያላቸዉ ስርጭትና መንስኤዎቻቸዉ" የተሰኘ ጥናት እያደረኩኝ ነዉ።የጥናቱ አላማ ጥገኛ የአንጀት ትላትሎች በዚህ በአገና የመጀመሪያ ደረጃ ሆስፒታል ባሉ የተወሰኑ ታካሚዎች ላይ ያላቸዉን ስርጭትናመንስኤዎቻቸዉን ለማወቅ ነዉ። እርሰዎ በዚህ ጥናት ላይ ለመሳተፍ ፈቃደኛ ከሆኑ :ትንሽ የሰገራ ናሙና ይሰጡን ና መጠይቁን ይሞሉልናል።የሱጡን የሰገራ ናሙና ና መረጃ በእርስዎ ላይ

ምንም አይነት ተጽእኖ የለዉም፡ መረጃዎቹ ሁሉ ሚስጥራዊነታቸዉ የተጠበቀ ነው።ተሳትፎው በፈቃደኝነት ላይ የተመሰረተ በመሆኑ እርሰዎ የመሳተፍም ያለመሳተፍም መብት አለዎት ።መጠይቁን በመሳተፍ ላይ ሳሉ ምንም አይነት ያልተመቸዎት ነገር ካለ ተሳትፎዎን ማቋረጥ ይችላሉ።ነገርግን በጥናቱ ላይ በመሳተፍዎ ተጠቃሚ ይሆናሉ።ይህም ማለት የአንጀት ትላትል ከተገኝብዎት መድሀኒት ይወስዳሉ።

ስለዚህ እርሰዎ መጠይቁን ለመሙላት ፈቃደኛነዎት?

ሀ. አዎ ለ. አይደለሁም

ፊርማ----------

ክፍልአንድ፡- ማህበራዊ ሁኔታ

የ ታካሚው መለያ ቁጥር --------

1.ዕድሜ በአሀዝ _____

2. ጾታ ሀ. ወንድ ለ. ሴት

3.የትምህርት ሁኔታ ሀ. ያልተማረ ለ. የትምህርትደረጀ _____ (ያጠናቀቁትየመጨረሻደረጃ)

4. መኖሪያ ሀ. ከተማ ለ.ገጠር

5. የስራ ሁኔታ ሀ.ቅጥር ሰራተኛ ለ. የግል ሰራተኛ ሐ.ገበሬ መ. ነጋዴ ሠ.ተማሪ ረ.ሌላሰ.የቤትእመቤት

6.የገቢ መጠን (በብር) _____

7.የጋብቻ ሁኔታ፤ያገባ_____ ያላገባ_ _____ ባሏየሞተባትሴት _____ የፈታ_____

8. የቤተሰብ መጠን፤ቁር_____

ክፍልሁለት፤-አጋላጭ ሁኔታዎች

9 ለመጠጥ የትኛዉን የዉሃ አይነት ይጠቀማሉ ሀ.የቧንቧ ውሃ ለ.የጉድጉአድ ዉሃ ሐ .የወንዝ ዉሃ

መ.ሌላ

10 የ ሚጠቀሙት የ ጉድጉአድ ወይም የ ወንዝ ከሆነ ሀ የተጠበቀ ለ ያልተጠበቀ

11 ውሃ ማጣሪያ ይጠቀማሉ ሀ.አዎ ለ.አልጠቀምም ከተጠቀሙ ምን አይነት የውሃ ማጣሪያ ዘዴ ነው የሚጠቀሙት ?? ሀ.ማጣራት ለ.ማፍላት ሐ.በኬሚካል ሌላ(ግለፅ _____)

12 የ ሚጠቀሙት የ ውሃ ማጠራቀሚያ ምን አይነት ነው? ሀ ጀረኪና ለ ሮቶ ሐ ታንከር መ ሌላ

13 የ ውሃ ማጠራቀሚያዎትን በ ማጠብ ይከድናሉ? ሀ አዎ ለ አይ

14 በ ምን ያህል ድግግሞሽ የ ውሃ ማጠራቀሚያውን ያጥባሉ? ሀ በ ሳምንት አንዴ ለ በ 2 ሳምንት አንዴ ሐ በ ወር አንዴ መ በ 6ወር አንዴ

15 ቤትዎ ሽንት ቤት አለዎት? ሀ.አዎ ለ. የለኝም

16. ከሽንት ቤት ውጪ ይፀዳዳሉ? ሀ.በጭራሽ ለ.አንዳንዴ ሐ.ሁልጊዜ

17.እጅዎን ከምግብ በፊት ይታጠባሉ? ሀ.አዎ ለ.አንዳንዴ ሐ.አልታጠብም

18 ከ ሽንት ቤት አቅራቢያ የ እጅ መታጠቢያ አሎት? ሀ አዎ ለ አይ

19 ከሽንት ቤት በኋላ እጅዎን ይታጠባሉ ? ሀ.አዎ ለ.አንዳንዴ ሐ.አልታጠብም

20.እጅዎን ከምግብ በፊት ይታጠባሉ? ሀ.አዎ ለ.አንዳንዴ ሐ.አልታጠብም

21 ልጆችን ካፀድ በ ሁላ እጆትን ይታጠባሉ? ሀ አዎ ለ አይ

22 እጆትን ለ መታጠብ ምን ይጠቀማሉ? ሀ ወሃ ብቻ ለ ውሃ እና ሳሙና ሐ አመድ እና ውሃ መ ከዚህ ሌላ

23 ቤተሰቦት ቆሻሻን የት ነው የ ሚያሶግድት? ሀ ቅርጫት ለ ክፍት ቦታዎች ላይ ሐ በ መጉአጉአዛ መ ሌላ

24 ጥሬ ስጋ የ መመገብ ልምድ አሎዎት? ሀ.ሁልጊዜ ለ.አንዳንዴ ሐ.በጭራሽ

25 ያልበሰለ አትክልት የመመገብልምድ አሎት? ሀ.ሁልጊዜ ለ.አንዳንዴ ሐ.በጭራሽ

26 ያልታጠበ ፍራፍሬ የመመገብ ልምድ አሎት? ሀ.ሁልጊዜ ለ.አንዳንዴ ሐ.በጭራሽ

27 ጫማየመጫማትልምድአለዎትሀ.አዎ ለ.አንዳንዴ ሐ.የለኝም

28 በ ምን ያህል ድግግሞሽ የ ግል ንፅህናዎትን ይጠብቃሉ? ሀ.ሁልጊዜ ለ.አንዳንዴ ሐ.በጭራሽ

29 ጥፍሮትን ይቆረጣሉ? ሀ. አዎ ለ አይደለም

30 በ ምን ያህል ድግግሞሽ ጥፍሮትን ይቆረጣሉ? ሀ.ሁልጊዜ ለ.አንዳንዴ ሐ.በጭራሽ

ክፍል3 :የታካሚው የህክምና ታሪክ

3.1 ከዚህ በፊት በአንጀት ጥገኛ ተዋህስያን በሽታ ተጠቅተዋል? ሀ.አዎለ.አይ

3.2 ተጠቅተው ከነበር :ምንያህልጊዜሆኖት?? _____

3.3 ከዚህ በፊት የበአንጀት ጥገኛ ተዋህስያን በሽታ እንዳሎቦት በሃኪም ተነግሮታል?? ሀ.አዎ ለ.አይ

3.4 ውጤቱ ምን ነበር ?_____

3.5 ባለፉት 15 ቀናት የአንጀት ጥገኛ ተዋህሲ መድሃኒት ወስደዋል? ሀ.አዎ ለ.አልጀመርኩም

3.6 ወስደውከነበር የመድሃኒቱ አይነት _____

ክፍል4 :የህክምና ምርመራ አመላካቾች

1. ተቅማጥ አዎ____ አይ _____

2. ካለቦት፣ውሃማ____ ንፋጭ_____ደምየቀላቀለ_____

3. ካለቦት፣ምንያክልጊዜያስቀምጦታል? _____

4 አሁንየሆድህመምአሎት፣አዎ____ አይ_____

5. ትኩሳት አለ አዎ____ አይ_____

የመረጃ ሰብሳቢው ስም_____

ቀን_____ ፊርማ _____