PREVALENCE OF MALARIA AMONG PATIENTS ATTENDED AT WOLKITE HEALTH CENTER, SOUTH CENTRAL ETHIOPIA

BY:

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A RESEARCH PAPER TO BE SUBMITTED TO THE DEPARTMENT OF MEDICAL LABORATORY SCIENCES, COLLEGE OF MEDICINE AND HEALTH SCIENCES,WOLKITE UNIVERSITY IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR DEGREE OF BACHELOR SCIENCE IN MEDICAL LABORATORY SCIENCES

WOLKITE UNIVERSITY

COLLEGE OF MEDICINE AND HEALTH SCIENCES

DEPARTMENT OF MEDICAL LABORATORY SCIENCES

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December, 2020

Wolkite, Ethiopia

Declaration

We declare this research paper is our original work and it cannot be submit to other institution for any purpose without member of wolkite university medical laboratory student consent.

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Abstract

Malaria is caused by protozoan parasites that belong to the Genus *Plasmodium*, which are transmitted to humans via the bite of an infected female anopheles' mosquito. Malaria is usually restricted to tropical and subtropical areas with climatic conditions suitable for the development of the vector and parasite. Ethiopia is one of the malaria-endemic countries with an average of 60% and 40% due to *Plasmodium falciparum* and *Plasmodium vivax,* respectively during peak malaria transmission time.

Objective: This study aims to determine the prevalence of malaria among patients attending Wolkite health center, South Central Ethiopia.

Method: A cross-sectional study was carried from November to December 2020G.C. in Wolkite health center. A total of 260 study participants, selected by the consecutive sampling technique were included in this study. The study participants were interviewed using a semi-structured questionnaire to collect socio-demographic characters. Tables and figures were used to summarize descriptive data. The frequency and proportions of malaria-infected study participants were also calculated.

Result: From the total of enrolled study participants 96 (36.92%) were male and 164 (63.08%) were female. The total prevalence of malaria infection registered in the present study was 13.85% with 10.77% and 3.08% due to falciparum and vivax malaria, respectively. Malaria infection registered in this study were less in female (13.41%) than males (14.58%).

Conclusion and Recommendation: The prevalence of malaria in this study was 13.84%. From this, 22(13.41%) were female and 14(14.58%) were male. The most predominant species was *p.falciparum* 28(10.77%). Providing health education campaign for community and health interventions should be implemented to prevent and control the disease. Insecticide-treated bed-nets and indoor residual spraying should be provided to reduce disease transmission. Focusing about Environmental sanitation by eliminating the spreading site of mosquitoes and avoiding stagnant water in the community area

Key words: Malaria, Wolkite, Gurage, Zone, Ethiopia

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List of Abbreviations and Acronyms

1. BSc .....(Bachelors of Science Degree)
2. Km .....(Killo meter)
3. P.*falciparum* .....*(* Plasmodium falciparum*)*
4. P.*knowles* .....(Plasmodium knowles)
5. P.*malariae* .....*(*Plasmodium malariae*)*
6. P.*ovale*..... *(*Plasmodium ovale*)*
7. P.*vivax* .....(Plasmodium vivax)
8. PCR .....(polymerase chain reaction)
9. PI .....(Principals investigator)
10. RBC.....(Red Blood Cell)
11. RDT..... (Rapid Diagnostic Tests)
12. SOP .....(Standard Operation Procedure)
13. TNs..... (treated nets)
14. WHO..... **(**world health organization

1. Introduction

1.1 Back Ground

The word malaria is derived from two Italian words, 'mal' and 'aria' which mean bad air.
They called it so because they thought that the disease is caused by bad air (1). The common causes of human malaria are four species Plasmodium vivax (P.*vivax*) , plasmodium falciparum(P.*falciparum*,Plasmodium malariae (P.*malariae*),Plasmodium ovale (P.*ovale)*and sometimes by a fifth species Plasmodium Knowles (P.*knowles*),which is a monkey parasite(2).
In developing country 250 million peoples are affected by malaria annually. It can transmit by female anopheles' mosquito during blood meal.
Plasmodium malariae (P.*malariae*) has much lower prevalence than Plasmodium vivax (*P.vivax*), Plasmodium falcifarem (*P.falciparum*) and Plasmodium *ovale* (*P.ovale*).It is confined mainly to tropical Africa. Also it is found in South America and South west Asia. Infection rates in Ethiopia are about 60%, 40%, 1% and less than 1% for Plasmodium falciparum (*P.falciparum*) ,plasmodium vivax (*P.vivax),*Plasmodium ovale (*P.ovale*) and Plasmodium malariae(P.*malariae*) ,respectively(3).
Malaria is ranked as the leading communicable disease in Ethiopia accounting for about 30% of the overall disability-adjusted life years lost(7).

Ethiopia has three climatic zones that have characteristics for malaria endemicity. That of 'Kola' or hot zone below 1500m altitude has seasonal malaria transmission depending on local condition with moderate to high endemicity (46% of the territory) the 'Woina Degas' or temperate zone (46% of the territory) in between 1910m and 1935m altitude has malaria transmission characterized by a sporadic outbreak of unstable malaria resulting from sudden climatic changes such as heavy rain or clod. 'Dega' or cold zone (8% of the territory), is the climatic area above 2500m altitude and is free of malaria transmission (8).

In Africa, the case and the death are disproportional because of the 90% of malaria infection & 92% of malaria death in 2015 according to World Health Organization(WHO) estimation(4). The female *Plasmodium* species has a complex life cycle involving both sexual and asexual cycles, the asexual cycle of this parasite is called schizogony that takes place in the human host, and the sexual cycle which is called sporogony takes place in the gut of the female anopheles' mosquito. (5)

1.2 Statement of the Problem

Malaria is a major public health problem and a cause of much suffering and death in the poorer areas of tropical Africa and Latin America, particularly among young children.

Malaria occurs in 109 countries with about half of the world population at risk. In 2016 there were an estimated 187-327 million clinical cases of malaria (91% of this in sub-Saharan Africa) resulting in 881,000 deaths, 85% of the fatality occurred among under 5 years of age (6).

Fifteen countries in sub-Saharan Africa and India carried almost 80% of the global malaria burden. Five countries accounted for nearly half of all malaria cases worldwide: Nigeria (25%), the Democratic Republic of the Congo (11%), Mozambique (5%), India (4%), and Uganda (4%)(4).

Chapter Two

2. Literature Review

Throughout human history, malaria has remained the cause of untold morbidity and mortality. To this day, malaria is the world's notorious tropical and sub-tropical parasitic disease threatening 2.4 billion people accounting for 40% of the world population. In addition, with rapid means of travel, large numbers of people from non-malarious areas are being exposed to infection(**Error! Reference source not found.Error! Reference source not found.**).

In Maputo city were statically the 706 patient was confirmed for malaria. Among febrile patients of malaria 111 (15.7%) cases were identified: 105 were positive for *P.faliciparum* only, and four P. *Vivax*& two P.ovale(12).

A study was conducted in Chogoria Hospital in Kenya on 164 patients blood,of which 83 (50.6%) are male. Only 15.9% were positive for *P. falciparum* by expert microscopic examination (11).

Similarly, a study conducted in Nandi Azikwe University, in Akwa South Eastern Nigeria among 200 freshman students showed a prevalence of 80% Plasmodium species, *P. falciparum* was the dominant followed by *P. malariae, P. vivax* and *P. ovule* with their prevalence 83%, 8.9%, 5.0%, and 2.5%, respectively (13).

Out of 1222 patients, 410 (33.6%) had a laboratory-confirmed malaria infection. In this study Infection by *P.knowlesi* accounted for the majority of malaria reports in Sabah. In this analysis indicated that males and those living in rural areas were at higher risk (14).

A total of 102 (13.7%) had *P. falciparum* malaria, 18(17.6%) of these were severe cases (jaundice and severe anaemia)(15).

The study conducted on the prevalence of malaria was found to be 18.4%. Education level, home area or origin of migrant labourers, with the risk of malaria(16).

In this study conducted on prevalence of malaria among febrile under-five children was 64%. Of these, more than half (66.5%) and one-fifth (22. 2%) of the cases were caused by *P. falciparum* and *P.vivax* respectively(17).

A study conducted on prevalence of malaria at Shashemene health center a total of 810 suspected adult malaria patients who participated in the study, 204 (25%) had microscopically confirmed malaria parasites the dominant plasmodium species were *P.vivax* (54%) and *p.falciparum* (45%), with mixed infection of both species in one patient (18).

The study conducted in SNNPR with a total of 173,138 and 274,841 malaria cases that were examined in the year 2002 and 2003/4, respectively. In 2002 positive cases were 78.923(45.6%) of which *P. falciparum* accounts for 54.9% of all cases and in the year 2003/4 98,605(56.4%) were positive of which *P. falciparum*, *P. vivax. P.malaria* and mixed infection accounted for 69%, 29.75%, 0.10% and 0.97%, respectively (19).

According to Gedeo Zone study area was 16.0% with higher infection rate in the surrounding area (53.6%) and amongst the age group of 15-24 years (35.7%). The predominant Plasmodium species detected was *(*62.5%) followed by *P.falciparem*(26.8%) and mixed malaria infection of both species (10.7%) (20).

In cross-sectional study we were conducted to determine the prevalence of malaria its among patients attended for blood film examination in wolkite Health Center South Central Ethiopia. The study was providing base line data for the proper management of malaria infection as elimination and control of malaria disease in the community.

2.1 Significance of study

Malaria infections are wide and common in many parts of developing countries of the World. In Ethiopia malaria infection is common public health concern. Then, wolkite will never be free from the same consequence. Therefore, this study was provided an important input to determine the prevalence of malaria. This study was provided information on the prevalence of malaria infection among patients who attended Wolkite Health Center (WHC). The information can give malaria data essential for every aspect of prevention and control program. The study may also serve as baseline information for those who are interested to study disease that is associated with malaria in the study area.

Chapter Three

3.1 Objective

3.1.1General objective

- To assess the prevalence of malaria among patients attending Wolkite Health Center from November to December 2020 G.C

3.1.2 Specific objective

- To identify the prevalence of malaria among febrile patients attended at Wolkite Health Center.
- To determine the common species of malaria-causing parasite at Wolkite Health Center.

Chapter Four

4. Materials and Methods

4.1 Study Area and period

The data was collected from November to December, 2020G.C. The study was conducted in Wolkite town at Wolkite Health Center, which is located about 158 km southwest of Addis Ababa. Wolkite town is the capital city of the Gurage zone, found in south nation nationality and people region and located 158KM south of Addis Ababa. Wolkite town is located between the latitude of 8 17/N 37 47Æ and longitude of 8.283 N 37.783 E with an elevation of 1,910 and 1,935 meters above sea level. The structural plane of Wolkite town is set up from 6 Kebeles and 3 sub-towns. The 3 sub-towns are Bekure, Addis Brihan and gubreye plus the corresponding 6 Kebeles are Selamber, Edigetchora and Menahiria in Addis Brihan sub-city, Addis hiwot and EdigetBer in Bekure sub-city and 01 Kebele in Gubrye sub-city. According to Wolkite town statically agency report,Wolkite town has a total population of 70,796 peoples of these 53% are males, 47% are females. The climatic condition of the town is Woina Dega. The 'Woina Degas' or temperate zone (46% of the territory) in between 1910m and 1935m altitude has malaria transmission characterized by sporadic outbreak of unstable malaria resulting from sudden climatic changes such as heavy rain or cloud (8).

The mean monthly temperature is 22-27^{0}c. The main rainy season usually occurs from June to September. The city has two health center with many 8 private clinics and 6 drug vender.

4.2 Study Design

Institution-based a cross-sectional study was conducted.

4.3 Population

4.3.1 Source population

All febrile patients who attend Wolkite Health Centre during the study period.

4.3.2. Study population

All malaria suspected patients who were come to Wolkite Health Center OPD and they requested for laboratory examination.

4.4 Sample size determination

The sample size is calculated using a single population proportion formula considering the prevalence of malaria from the previous study conducted in Butajira area(21). The prevalence of 4%, margin of error =5%, (95% confidence level)), and 10% non-response rate.

The sample size was calculated as $\underline{n= (z/2)^2\ p\ (1-p)}$

d^2

Where n=the total sample size

p=prevalence malaria

Z/2=95%=1.96 confidence interval

d= margin of error; 5/2 b/c the prevalence is under 10% we divide margin error of by 2.

$\underline{n= (1.96)^2\ 0.04\ (0.96)}$ = 236; total n = (236× 0.10) = 236 + 24 = 260;

$(0.025)^2$

The final sample size was 260.

4.5 Sampling technique

A consecutive sampling technique was used (which is the sampling technique in which every subject meeting the criteria of inclusion is selected until the required sample size is achieved).

4.7. Data collection process

The study participants were interviewed using a semi-structured questionnaire to collect socio-demographic characters. Tables and figures were used to summarize descriptive data. The frequency and proportions of malaria-infected study participants were also calculated.

4.8. Laboratory data

4.8 .1 principle of capillary blood Sample Collection

Capillary blood Specimen collected by using sterile lancet for finger puncture under aseptic technique and the blood collected in a pipette (small glass tube),on frosted glass slide & a cotton or apply bandage to puncture site if there is any continued bleeding(6).

Advantages of Capillary Blood Collection

- Only a very small amount of blood is needed.
- Collection is simple and relatively painless. .
- It is preferred specimen for making peripheral blood films.

4.8.2. Thick and thin blood film preparation Principle

A thick blood smear is a drop of blood on glass slide. Thick blood smears are most useful for detecting the presence of parasites. The thin blood smear is a drop of blood that is spread across a large area of the slide. It is the most useful for identifying the species of parasite(6).

4.8.3 Principle of staining

Fix the thin film by dipping it briefly in to absolute methanol, when absolute methanol is evaporated, place on the staining rack & covering 10% giemsa staining solution for 10 minute(6).

4.8.4 Malaria Parasite identification and enumeration

We estimate parasite numbers/µl of blood by counting parasites against white cells

We select a part of the thick film where the white cells are evenly distributed and the parasites are well stained, by Using the oil immersion objective we count systematically 100 white blood cells (WBC), estimating at the same time the numbers of parasites in each field covered. Counting by using hand tally counter. We repeat this in two other areas of the film and we take an average of the three counts(6).

4.9 Ethical Consideration

Official letter of permission was obtained from College of Medicine & Health Sciences Department of Medical Laboratory Science. This letter was given to the administrator of Wolkite Health Center and the purpose of the study was clearly explained to both the laboratory personnel's, and patients for giving informed consent.

4.10 Information dissemination

The finding of this study was presented to the Department of Medical Laboratory Sciences. The findings of this study were also presented at appropriate conferences and seminars. In addition, publications on local as well as international journals will be considered.

4.11. Quality Assurance

To ensure reliable results, quality of the Giemsa stain was checked by using known negative and positive blood smears. A slide was rechecked by two experienced blinded laboratory

technologists, to maintain the quality of the generated data, they were checked for completeness and cleanness before starting the analysis.

Pre-analytical Phases

The reagent was prepared & the stain was checked by using known positive smear. Patient was prepared for sample collection & the Questionnaires were pre-tested before data collection.

Analytical Phase

The thin and thick blood smears was Prepared & the dry smear was systematically examined microscopically.

Post-analytical Phases

The result was recorded and interpreted by using a standard reporting system and the result were sent to the physician for the treatment. The remaining specimen was discarded in the container with disinfectant.

4.12 Data Analysis and Interpretation

The result was entered and analysed using SPSS version 23 software for Windows. Then, the study finding was calculated in Percentage, frequency and mean. The results were

Summarized and presented by text, tables, graphs, words, & bar graphs. Descriptive statistics (frequency and tabulations) were used.

CHAPTER FIVE: RESULT

From a total of 260study participants included in the study 96 (36.92%) were male and 164 (63.08%) were female. The total prevalence of malaria infection registered in the present study was 13.85% with 10.77% and 3.08% due to falciparum and vivax malaria, respectively. The prevalence malaria registered in this study is more in female (13.41%) less male (14.58%).

Table 1.distribution of malaria in gender classification at wolkite health center from November to December,2020

Sex	Positive	Negative	Total
Male	14(14.58%)	82(85.42%)	96
Female	22(13.41%)	142(86.59%)	164
Total	36(13.85)	224(86.15%)	260

Age		Positive	Negative	
	0-4year	6(13.04%)	40(86.96%)	46
	5-14year	6(30%)	14(70%)	20
	15-24year	14(18.92%)	60(81.08%)	74
	25 - 34year	2(2.5%)	78(97.5%)	80
	35 - 44year	4(33.3%)	8(66.7%)	12
	45 - 55year	4(25%)	12(75%)	16
	>55year	0(0%)	12(100)	12
	Total	36(13.85%)	224(86.15)	260

Table 2.Distribution of malaria in residendence &educational status classification at wolkite health center, 2020

Residence	Urban	30(16.3%)	154(83.7%)	184
	Rural	6(7.9%)	70(92.1%)	76
	Total	36(13.85%)	224(86.15%)	260
Educational status	level I OR II	16(17.8%)	74(82.2%)	90
	Diploma	0(0%)	28(100%)	28
	Degree	6(33.3%)	12(66.7%)	18
	Master	0(0%)	2(100%)	2
	un able to read andwrite	14(11.5%)	108(88.5%)	122
	Total	36(13.85%)	224(86.15)	260
Occupational Status	Students	6(12%)	44(88%)	50
	self employed	14(16.7%)	70(83.7%)	84
	Employed	6(15.8%)	32(84.2%)	38
	Unemployed	4(7.7%)	48(92.3)	52
	home maker	6(16.7%)	30(83.3%)	36
	Total	36(13.85%)	224(86.15%)	260

As shown from above table the distribution of malaria in relation to gender, the prevalence 22(13.42%) was female and 14(14.58%) was male.

The distribution of malaria in relation to age group, the prevalence 14(18.92%) was 15-24 age group followed by age group 0-4(13.04%) as age increase from 5-14,25-34,35-44,45-55&>55 the prevalence of malaria.

As shown on the table the prevalence of malaria was high among the study population who are living in urban 30 (16.3%) than those are living rural 6 (7.9%) between malaria parasite infection and residence.

As shown on the table the prevalence 16(17.8%) was level I or II and those unable to write &read are 14(11.5%), degree 6(33.3) between malaria parasite infection and educational status.

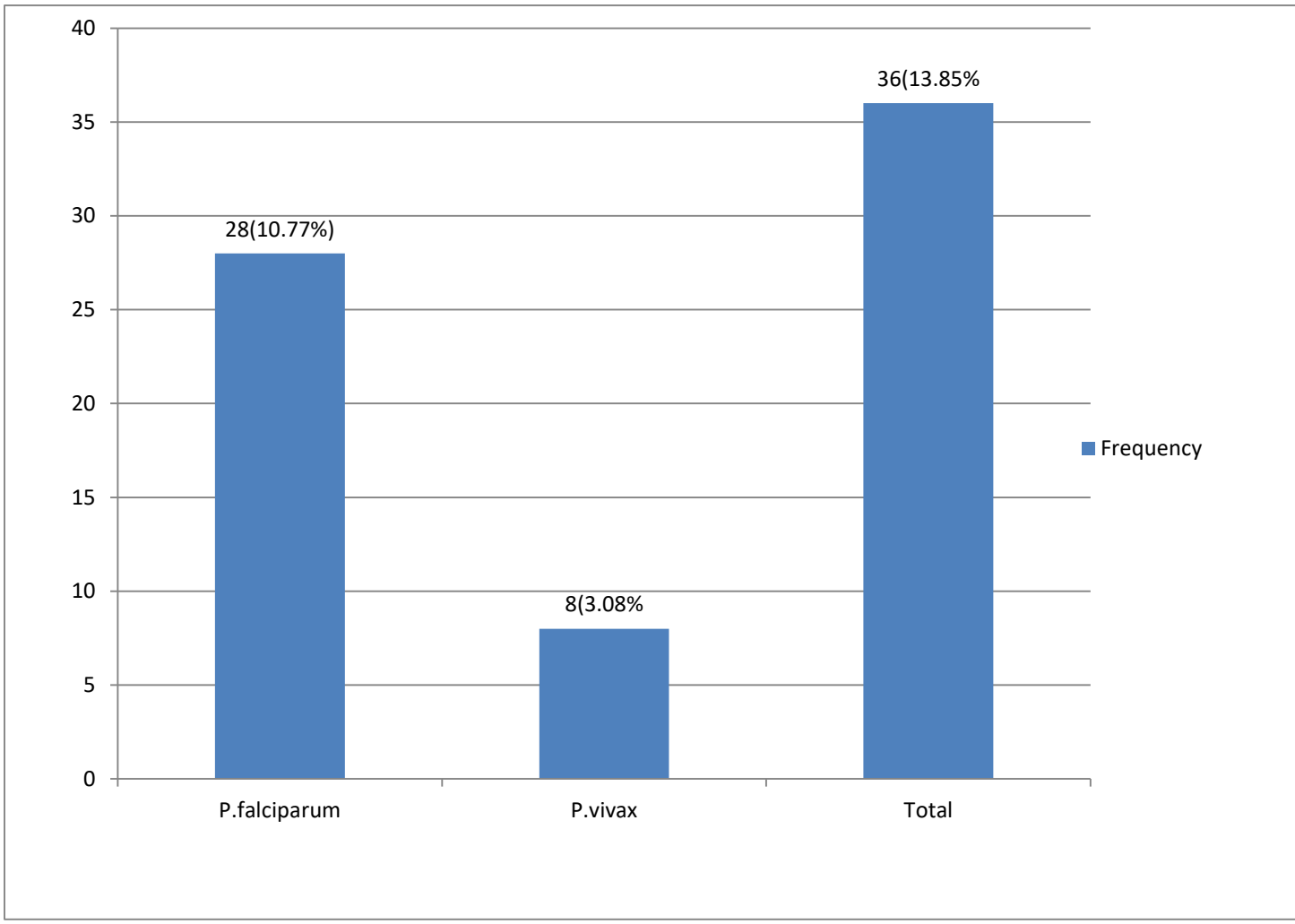

Figure2:distribution of malaria positive and negative blood film examination at Wolkite health center ,November To December

CHAPTER SIX: DISCUSSION

The prevalence of malaria in this study was 13.85% and it is lower when compared with most of the studies previously conducted in Shashemene health center patients who participated in the study of malaria was accounted 25%.

This study showed as the malaria species found in the area were *P.falciparum* and *P.vivax* with percentage of 10.77% and 3.08 % respectively, the most dominant species was *P.falciparum*.this indicates that the dominant species in this study area was compared to *Plasmodium falciparum* and *Plasmodium vivax* are the two predominant malaria parasites, distributed all over the country and accounting for 60% and 40% of malaria cases, respectively. Reports indicate that clinical malaria accounts for 10%-40% of all out patient consultations, with corresponding proportional morbidity among children under 5 years in age being 10% - 20%.

The distribution of malaria in relation to age group of in this study was 18.92% (15-24years), 13.04%(0-4) that compared to Gedeo Zone study was 16.0% with higher infection rate in the surrounding area (53.6%) and amongst the age group of 15-24 years (35.7%).

The prevalence of malaria in study population who are living in urban 30 (16.3%) and living rural 6 (7.9%) based on residence compared to sabah malaria report 410 (33.6%) had a laboratory-confirmed malaria infection in living in rural areas.

The prevalence 16(17.8%) was level I or II and those unable to write &read are 14(11.5%), degree 6(33.3) between malaria parasite infection and educational status compared to that previously studied prevalence of malaria was 18.4% based Education level.

CHAPTER SEVEN:

CONCLUSION AND RECOMMENDATIONS

CONCLUSIONS

- The prevalence of malaria in this study was 13.84% and from this 22(14.58%) were female and 14(13.41%) were male, the highest prevalence seen in male.
- Among age group the prevalence was seen in age group 15-24 of 14(23.3%,34-55of 4(33.3%.the highest age group affected by malaria was 34-55of 4(33.3%.
- The prevalence of malaria parasite among residence was seen in urban area 30(16.3%) when compared with rural 6(7.9%)

Recommendation

Based on the finding of this study the following recommendation was forwarded

- The Wolkite health extension workers Providing health education campaign for community and health interventions should be implemented to prevent and control the disease.
- The Wolkite woreda health office Insecticide-treated bed-nets and indoor residual spraying should be provided to reduce disease transmission.
- The Wolkite woreda office Focusing about Environmental sanitation by eliminating the spreading site of mosquitoes and avoiding stagnant water in the community area

Limitation

- Shortage of time
- Limitation of Capillary Blood Collection
    - Only small amounts of blood can be obtained and repeated examinations require a new specimen.
    - Platelet count cannot be performed on capillary blood. Some platelets are unavoidably lost by adherence onto the wound.
    - Precision is poorer in capillary than venous blood. Because of variation in blood flow and dilution with interstitial fluid.
    - Blood in micro tubes frequently hemolyse.

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ANNEXE I-: Laboratory procedure

Procedure for capillary blood specimen collection & blood film preparation:

1. Clean the finger using cotton moistened with 70% alcohol.
2. Allow the area to dry.
3. Using sterile disposable lancet prick the finger and squeeze gentling to obtain adequate amount blood for both thick and thin blood smears.
4. Place a large drop of the blood at the top of the slide and smaller drop at the in front of the large one for thick and thin blood smaller preparation respectively.
5. Spread the smaller drop of blood using sterile smooth edged slide to produce regular and use the edge of the spreads slide to make thick blood smaller.
6. Label the slides with code number using lead pencil.
7. Allow the smears to dry and place in dust free area.

Giemsa Staining procedure &examination: -

1. Place the smeared slide horizontally on staining rack.
2. Fix the thin blood smear with absolute methanol for 20 seconds and fixative not to touch the thick blood smear.
3. Cover the smear with diluted 10% Giemsa staining solution for 10 minutes.
4. Wash the slides with distilled water and let them air dry.
5. Clean the back of the slides and add a drop of oil immersion to examine the smear under oil immersion (100 xs) objective.

ANNEX II; grading Reporting system

After a systematic examination of 100 fields using 100x oil immersion objective. The malaria parasite with report specifying objective of the malaria parasite was reported specifying their stage with their density and interpreted as follows

1. 1-10 per 100 with power field - 1+
2. 11-100 per 100, ,, - 2+
3. 1-10 in every power field - 3+
4. >100 in every high power field -4+

ANNEX-III: Questionnaire

Wolkite University of Medicine & Health Science Department of Medical Laboratory Sciences

Informed consent

We are Wolkite University BSC graduating student in Medical Laboratory Sciences to determine the prevalence of malaria among patients attended in Wolkite Health Centerfrom Nov toDecember, 2020. So, we are invited you to give us a valuable information and we are also guaranteed all information you give me will be kept confidential. Finally, we ask your cooperation and patience until we finish our questionnaire.

Are you voluntary?

1. Yes 2. No

Part one: Socio- demographic characteristics of the respondents

No	Variable	Possible response	Skip
1.	Gender	1. Male 2. Female	
2.	Age	1. 0-4 2. 5-14 3. 15-24 4. 25-34 5. 35-44 6. 45-55 7. above: 55	
3.	Residence	1. Urban 2. Rural	
4.	Occupation	1. Student 2. Self-employed 3. Employed 4. Un employed	

		5. Home- maker Unable to work	
5.	Educational level:	1. Level I or II 2. Diploma 3. Degree 4. Master 5. PHD 6. Un able to read and write	

Part two: information about malaria

No	Variable	Possible response	Skip
6	Malaria (after microspical examination)	1. Positive 2. Negative	
7	Which type of malaria positive?	*1.* P.*falciparum* *2. P.vivax* *3. p.ovale* *4.* P.*malariae* 5. P.*knowles* 6. None	

Name of interviewer ----------date----------sign-------

Thank you

የስምምነት ቅፅ

እኛየወልቂጤዩንቨርሲቲየህክምናላቦራቶሪተማሪዎችስንሆንወደወልቂጤከተማጤናጣቢያከሚመጡታካሚዎችመካከልበወባየተጠቁትንሰዎችቁጥርለማጥናትስለፈለግንአስፈላጊዉንመረጃበመስጠትትብብርእንዲያደርጉልንበአክብሮትእንጠይቃለን?

ፈቃደኛነዎት?

1. አዎ
2. 2. የለም

የወባጠቋሚጥናት

ክፍልአንድ- ለተመልካቾችማህበራዊናስነ-ህዝብ

እድሜ

1. 0-4
2. 5-14
3. 15-24
4. 25-34
5. 35-44
6. 45-55
7. . ከላይ: 55

ጾታ

1. ወንድ
2. ሴት

መኖሪያ

1. . ከተማ
2. ገጠር

4. ሥራ

1. ተማሪ
2. በግል የሚሠራ
3. ተቀጣሪ
4. ያልተቀጣረ
5. የቤት ሰራተረ
6. መሥራት ያልተቻለ

5.የትምህርትደረጃ

1. ደረጃ I ወይም II
2. ዲፕሎማ
3. ዲግሪ
4. ማስተር
5. ፒ.ኤች.ዲ.
6. ማንበብእናመጻፍያልተቻለ

ክፍልሁለት-ስለወባመረጃ

1. በምርመራ የተገኘ ወባ

1 ፖዘቲቪ
2 ነጋቲቪ

2 የወባ አይነት

1. *ፕ.ቫይቫክስ*
2. *ፕ.ፋልሲፋረም*
3. *ፕ.ኦቫሌ*
4. *ፕ.ማላሪየ*
5. *ፕ.ናዉለሲ*