Knowledge and Practice on Prevention of Intestinal Parasitic Infection Among Mothers of Under-five Children in Bulehara Town, Bule Hora, Oromia Region, Southern Ethiopia

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Research

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Knowledge and Practice on Prevention of Intestinal Parasitic Infection among Mothers of Under-Five Children in Bule Hora Town, Oromia Region, Southern Ethiopia

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Abstract

Background: Intestinal parasitic diseases are one of the general medical conditions in numerous networks, especially among youngsters in country spaces of agricultural nations. Ethiopian studies have concentrated on the commonness and circulation of intestinal parasitic contaminations, fundamentally among younger students. A couple of studies have looked at the scope on knowledge of under-five children’s mothers regarding the prevention of parasitic infections.

Methods: A community-based cross-sectional examination with a quantitative methodology was conducted from November 30 to December 30, 2020, among mothers of under-five children in Bule Hora town. The example size in this investigation was 403. The information will be coded, checked sent out to SPSS Statistics rendition 25 for investigation.

Result: The general information and practice level concerning mothers of under-five kids in regards to counteraction of intestinal parasitic contaminations was, all among 51.6% had poor knowledge and 53.1% had poor practice. Nearly 50% of children not washing of hands and legs after a play in the soil and more than 55% of mothers not advising the child to wear footwear outside the home. Remaining all aspect shows considerably good practice from mother’s mention. In the Ethnic group, Oromo (AOR 2.199, 95% CI 1.05-4.59) people had good knowledge, mothers who not ready to peruse and compose (AOR 0.26, 95% CI 0.12-0.57) had poor knowledge than others. Further in age group (31-35) (AOR 2.94, 95% CI 1.38-6.24) had a good practice, Amara (AOR 0.39, 95% CI 0.18-0.85) people had poor practice and mothers who not able to read and write (AOR 3.97, 95% CI 1.26-12.49) had good practice than other educated.

Conclusion: Mothers with children under the age of five have a considerably low degree of optimal awareness and experience when it comes to preventing intestinal parasitic infection. As a result, campaigns or formal training can be used to raise community consciousness about intestinal parasitic invasion counteraction and control.
Introduction

Intestinal parasitic infections (IPIs) Intestinal parasitic contaminations (IPIs) brought about by pathogenic helminths and protozoan species are accounted for broadly. Parasitic diseases affect and cause illness approximately 3.5 billion and 450 million people worldwide, respectively [1].

Worldwide, intestinal parasites are exceptionally predominant, especially in low-pay areas [2]. In Ethiopia, the number of infected parasites is high. The general public pervasiveness of any helminths disease was 29.8% with variable level of predominance among locales [3].

The most widely recognized intestinal parasites are Ascaris(A) lumbricoides, hookworms, Trichuris(T) trichiura, Giardia(G) lamblia, Entamoeba (E) histolytica, and Schistosoma species, through over 10.5 million new cases revealed every year [4].

Ascarislumbricoides, Trichuristrichiura, and Schistosomes influence young children at a high rate, making a significant burden [5]. These parasitic infections cause impeding driving to inadequate nutrient use, restricting children from achieving success in sports and education[6].

Several factors contribute to the expanded predominance of intestinal parasites in tropical and sub-tropical nations, such as climatic conditions, absence of sterilization, risky drinking water, and a deficiency of latrine offices [7].Besides that, a lack of awareness as to how parasitic infections are spread increases the possibility of disease. Henceforth, a superior comprehension of the above factors, just as how friendly, social, conduct, and local area mindfulness influence the study of disease transmission and control of intestinal parasites may assist with planning viable control procedures for these sicknesses[8-9]. Furthermore, there is a deficit of evidence on community awareness of the cause, transmission, and counteraction of infection in Ethiopia. Therefore, this study was intended to survey the level of mother's information and practice about the reason, impact, method of transmission, and preventive techniques of intestinal parasitic infections in Bule Hora town, in Southern Ethiopia.
Methods

Study Area: The examination will be led at Bule Hora town which is situated in the West guji zone Southern Ethiopia Oromia regional state. This town found in the southern direction of the Capital city Addis Ababa around 470KM. In Bule Hora town, According to 2013 E.C, based on a zonal report in Bule Hora town, the total estimated population is 59,024. From the total population, the estimated under-five children in this area were 9698.

Study Design: A people group based cross-sectional study configuration will be led from November 2020 to December 2020 among mothers of under-five children at Bule Hora Town. The source populace will be all mothers who have kids under five years old in Bule Hora Town.

Sample size determination: Test size was resolved utilizing standard recipe for single populace extent dependent on the accompanying suspicions. Z (α/2) =1.96 (95% certainty level of the review), 52.3%[18] commonness from the past examination. From the formula, the sample size was 382. Since the investigation populace under 10,000, Correction recipe required. Subsequent to adding 10% of non-respondent, the last example size is 403. The efficient basic arbitrary procedure was utilized to gather information; first by survey method required houses will be mapped. Finally, based on the kth formula every 24th house was labeled and data were collected.

Measurements: To measure the overall knowledge level. Five questions were used (Guttman scale type). From these various alternatives, 0 was for the choice “I don’t know” and other least options. 1 was for one correct option. Therefore, the highest and lowest score would be 5, and the lowest will be 0 points. After calculation of mean, the outcomes were considered as great information if the real score was higher than the mean and sorted as poor knowledge on the off chance that the determined score was lower than the mean. To measure the overall practice level eleven “yes” and “no” questions, with the highest and lowest scores (Ordinal Scale) were 11 and 0 points, respectively. A gathering of good and helpless practices was ordered dependent on the mean. The outcome was considered as a decent practice if the score was higher than the mean worth and considered as helpless practices if the score was lower than the mean.
Operational definitions:-

**Mothers of under-five children:** Mothers who have children less than five years old.

**Intestinal parasites: parasites:** Intestinal parasites: parasites that can taint gastrointestinal tracts of the human body.

**Good Knowledge:** Mothers who will score over the mean incentive for information questions.

**Poor Knowledge:** Mothers who will score underneath the mean incentive for information questions.

**Good practice:** Mothers who will score over the mean incentive for related components of intestinal parasitic diseases.

**Poor practice:** Mothers who will score underneath the mean incentive for related components of intestinal parasitic diseases.

**Prevention:** The action of stopping something from happening or arising, mothers appropriate steps or actions to avoid occurrence of Intestinal Parasitic Infections.

**The data collection tools and techniques:** the information assortment apparatuses adjusted by investigating distinctive important articles. The information were gathered utilizing self-regulated survey method. The questionnaire divided into three parts: part I: questions about Socio-demographic factors, part II: knowledge assessment questions, part III: practice assessing questions. It was set up in English language and nearby language (Afan Oromo) and was investigated by the language specialists. Prepared information gatherers included information assortment and the information assortment methodology were firmly administered.

During information assortment, every respondent welcomed to take part in the examination deliberately and furthermore have the option to stop cooperation when vital. The questionnaire was distributed and they were asked to return the filled questionnaire to data collectors within 24 hours. The supervisors have checked questionnaires for completeness.

**Quality control:** The nature of the information guaranteed by utilizing standard, pre-tried surveys and legitimate information assortment systems. Before the real
information assortment, pre-testing was done on 10% (42) of the absolute examination subjects at Gerba town; which was not be remembered for the real investigation and dependent on the discoveries vital changes made with respect to its consistency, lucidity, and consistent sufficiency and time it takes to finish Questionnaire.

**Data processing and analysis:** The information coded, checked for blunder, the missing worth should be managed, and cleaned data(edited) went into Epi-Data form 4.4.3.1 and sent out to SPSS Statistics Version 25 for investigation. The consequences of elucidating insights summed up and introduced by tables, diagrams, and charts. Rate, recurrence, and mean were determined.

**Ethical approval**

Moral freedom got from Bule Hora University, College of Health Science School Institutional Review Board (IRB). Authorization from separate specialists and verbal assent of respondents' was gotten by clarifying the goal of the examination before the information assortment.. Respondents were reassured that their answers would be kept private in order to gain their complete cooperation. They have likewise guaranteed their willful support and right to partake or end whenever they needed. The exploration partners were prepared by the vital examiners on the best way to keep the secrecy and namelessness of the reactions of the respondents in all viewpoints.
Result

Socio-demographic Variable of mothers of under-five children, Bule Hora Town, 2021

The examination was directed among 403 mothers of under-five kids. Most of the mothers in the age gathering of over 36 years of age about 149 (37%). Regarding mother’s marital status, more than half of 222 (55.1%) was living with their husband. About ethnicity 171 (42.4%) where belongs to Oromo. In addition to the educational status of the mother 149 (37%) were not able to read and write. With regard to the occupation, 142 (35.2%) were housewives. Further 248 (61.5%) of mothers had two and more under-five children. Regarding the monthly income of the family 218 (54.1%) was earning more than 3001 birr per month. In relation to husband education, 152 (37.7%) was unable to read and write and had secondary level education. (Table 1)

Over all Knowledge level of mothers regarding prevention of intestinal parasitic infections in Bule Hora Town, 2021

The mean and median were calculated as 3.93 and 3.60 respectively. As indicated by the mean worth, 48.4 % of the mother had over the mean worth and were considered as educated and 51.6 % of mothers had beneath the mean worth and were viewed as non-proficient about intestinal parasite anticipation in Bule Hora town. (Table 2)

Variable wise Knowledge level of mothers regarding prevention of intestinal parasitic infections in Bule Hora Town, 2021

Knowledge of Prevention mechanism

Mothers of youngsters were gotten some information about which avoidance component they was aware of. Most of the mothers, 96 (23.8%), detailed that avoiding food and water contaminations. 86 (21.3%) mentioned that washing vegetables, hand washing, avoid food, water contaminations, and use of latrine. 58 (14.4%) listed only hand washing. 57 (14.1%) mentioned washing vegetables. 18 (4.5%) listed I don’t know any practice. (Table 3)

Knowledge of the mode of transmission
Related to the mode of transmission, nearly 93 (23.1%) listed uncooked vegetables and unclean fruits. 77 (19.1%) mentioned soil contact. 56 (13.9%) reported contaminated water and food. Nearly 23 (5.7%) mentioned I don’t know. (Table 3)

**Knowledge of signs and symptoms**

Regarding signs and symptoms, about 82 (20.3%) mentioned anorexia as the main symptom. 72 (17.9%) listed diarrhea and vomiting. Only 64 (15.9%) described abdominal cramps, diarrhea, and vomiting. Nearly 38 (9.4%) mentioned I don’t know. (Table 3)

**Knowledge of complication of IPI**

In relation to complications of IPI, nearly 110 (27.3%) described malnutrition and growth retardation. 87 (21.6%) mentioned growth retardation. 37 (9.2%) listed anemia. About 65 (16.1%) told I don’t know. (Table 3)

**Knowledge on specific age for deworming a child**

Regarding specific age for deworming a child, nearly 94 (23.3%) mentioned I don’t know. 89 (22.1%) described starts from one year of age. 70 (17.4%) listed within 2-4 years of age. (Table 3)

**Over all practice level of mothers of under-five regarding prevention of intestinal parasitic infection in Bule Hora Town, 2021**

The mean and middle of maternal practices were 0.7647 and 0.7273 individually. In light of the mean worth, 53.1% of mothers were beneath the mean and 46.9% of mothers were over the mean. Accordingly, 53.1% of mothers had helpless practice and 46.9% of them had great work on with respect to counteraction of intestinal parasitic pervasion. (Figure 4)

**Variable wise practice level of mothers of under-five regarding prevention of intestinal parasitic infection in Bule Hora Town, 2021**

In this study, diverse aspect in the act of anticipation of intestinal parasitic infections shows that the majority of the mothers reported their child doesn’t have any stool examination before (44.4%), about not washing of hands and legs after the play in the soil (46.7%) and not advising the child to wear footwear outside the home (56.1).
Remaining all aspect shows considerably good practice from mothers mention. (Table 5)

Factors affecting knowledge and practice of mothers of under-five regarding prevention of intestinal parasitic infections in Bule Hora Town, 2021.

Bivariate regression was used at first, with indicator factors with $p<0.01$ to $p<0.05$ were included in multivariate analysis to assess factors unequivocally connected with the investigation result. Ethnicity (AOR 2.199, 95% CI 1.05-4.59), mothers instruction (AOR 0.26, 95% CI 0.12-0.57) were related with information on avoidance of Intestinal parasitic contaminations. In addition, age (AOR 2.94, 95% CI 1.38-6.24), ethnic group (AOR 0.39, 95% CI 0.18-0.85), and mothers education (AOR 3.97, 95% CI 1.26-12.49) were also associated with the practice of prevention of intestinal parasitic infections and remaining other variables doesn’t shows any association.

In ethnic group; Oromo group of people had two times (AOR 2.199, 95% CI 1.05-4.59) bound to have great information than other ethnic individuals. Mothers who not able to read and write had significant level of (AOR 0.26, 95% CI 0.12-0.57) poor knowledge than others. Further in age group of mothers (31-35) had three times bound to have great practice (AOR 2.94, 95% CI 1.38-6.24) than other age group mothers on prevention of IPI. In addition, Amara people (AOR 0.39, 95% CI 0.18-0.85) had poor practice than other ethnic group and mothers who had not able to read and write four times more likely to have (AOR 3.97, 95% CI 1.26-12.49) good practice than other educated mother regarding prevention of intestinal parasitic infections. (Table 6, 7).

Discussion

In this examination, as per the mean worth, 48.4 % of the mother had over the mean worth and were considered as proficient and 51.6 % of moms had beneath the mean worth and were viewed as non-educated about intestinal parasitic contaminations counteraction in Bule Hora town. This is higher than an examination that revealed the information on moms as 45.2% with respect to anticipation and control of intestinal parasites in Sekota Town, Waghimara Zone, Ethiopia. In agreement with another study in Wondo Genet, Southern Ethiopia, mothers had relatively reasonable
knowledge about intestinal parasitic infections, and they are very well aware of their impact[10-11].

In this study, the majority of the mother reported that avoiding contaminated food and water, hand washing, and least mentioned washing vegetables as prevention of Intestinal parasitic infections, which is like the investigation in which mothers mentioned washing vegetables, hand washing, and use of latrine as preventive strategies in IPI [10]. Another studies in Wondo genet found that drinking river water, chewing sugar cane, and feeding a child uncooked cabbage and green pepper were all related to intestinal parasitic contaminations in their kids [11].

In this study, knowledge on the mode of transmission of intestinal parasites, majority of the mother listed uncooked vegetables; fruits and soil are the major modes of transmission. A similar study done in Tripura, India reported of eating food contaminated with soil, eating with unclean hands, eating sugary foods, eating with unwashed hands and sugary foods, and eating meats separately were the reason for worm invasion [12].

Regarding knowledge on signs and symptoms associated with parasitic infestation most of the mothers mentioned that anorexia is the main symptom followed by diarrhea and vomiting. In a similar study in Wondo Genet, southern Ethiopia mothers mentioned diarrhea, vomiting, loss of appetite, abdominal discomfort, and an enlarged abdomen[11].

Regarding knowledge on complications in relation to parasitic infections, most of the mothers described malnutrition, growth retardation, and anemia as a primary complication. A similar study in Zouatta II, Ivory Coast; stated complications associated with liver damage, anemia, and other illnesses[13].In Sekota Town, Ethiopia, mothers mentioned malnutrition, anemia, and growth retardation as the major complications of intestinal parasites. In wondo Gent, Ethiopia an investigation referenced that intestinal parasites caused serious health problems including growth retardation, and malnutrition unless treated[10-11].

Regarding specific age for deworming a child, majority of the mother mentioned doesn’t know about the age of deworming a child and half of the percentage described starts from one year of age and 2-4 years of age. In a similar study in east Nigeria,
nearly half of the parents/guardians of school-aged children were aware of deworming, resulting in a very low level of child-deworming activities in the study population [14].

The general degree of good practice among mothers living in Bule Hora town regarding intestinal parasitic infestation prevention was 46.9%, which is less than the study done in Sekota Town (51.1%)(10). From another similar study, practices observed by mothers were higher compared to that observed from Ichhawar (22%) and lower than Astha block (54%) in Rural Madhya Pradesh[15].

The majority of the respondent in the current investigation washed their hands (90.8%) before a meal, cut nail regularly (91.1%), self-hand washing practice (83.1%), regular use of footwear (53.3%), food hygiene practice (83.9%) and clean body after the play in soil (53.3%). Comparing similar studies in Sekota town, shows good practice levels as washing their hand before meals (78%), cut nails regularly (65.6%), less practice level in self-hand washing (86.5%)(10). A similar study in Tripura, India by comparing shows that of less practice level in regular use of footwear (57.27%) and good practice level in food hygiene (83.9%)[12]. It was higher than the results from Ichhawar(8%) and Astha (22%) in rural Madhya Pradesh [15]. The distinction may be because of instructive foundation and financial variables between study subjects. Study discoveries of Mothers contrasted with others' work and different regions level of information and practice there was a restricted report in this title and study populaces cause to have confined conversation.

In ethnic group; Oromo group of people had two times (AOR 2.199, 95% CI 1.05-4.59) good knowledge than other ethnic group of people, this because of this group of people living majority in this town and this specific group of people educational status also cause for this. Mothers who not able to read and write had a significant level of (AOR 0.26, 95% CI 0.12-0.57) poor knowledge than other at least educated mothers. A similar study in Ethiopia, among school-age children whose mother was illiterate, were 3.3 times more likely to develop intestinal parasites (AOR = 3.3; 95% CI: 1.20–9.37) than those whose mothers had at least basic school education[16]. Further in the age group of mothers (31-35 years) had three times good practice (AOR 2.94, 95% CI 1.38-6.24) than other age group mothers on prevention of IPI. A study in Nepal, age of mothers associated (p<0.001) in solid waste management practice in the prevention
of worm infestations[15]. In ethnic Amara people had significant (AOR 0.39, 95% CI 0.18-0.85) poor practice than other ethnic group. A study in Nigeria, In various community-based parasitic infestation studies, particularly Ara community (14.81%) had the highest cases of intestinal parasites by their poor practice[17]. Mothers who had not able to read and write had four times (AOR 3.97, 95% CI 1.26-12.49) good practice than other educated mothers regarding prevention of intestinal parasitic infections.

**Conclusion**

Nearly half of the mothers of under-five had poor knowledge and practice. Even though the result is comparable with a similar study, it shows that people in the study setting had different practices and opinions about the prevention of intestinal parasitic infestations.

More the half of mothers didn’t know about what is the specific age for deworming a child. More than fifty percent of mothers stated that they didn’t have habits of advising the child to wear footwear while playing in the soil and also not washing legs and hands after a play in the soil.

As a result, through community educational campaigns or formal training for mothers, local area mindfulness about intestinal parasite counteraction ought to be created. This investigation didn't survey the level of relationship between autonomous factors and information and practice. Furthermore, it didn't address the relationship among information and practice. Along these lines, a further report with a huge example size is expected to survey the relationship of information and practice.

**What is known about this topic**

- The prevalence of intestinal parasitic infections has been high in developing country.
- The study on mothers’ knowledge and practice regarding control of intestinal parasitic infection was very limited.

**What this study adds**

- The study revealed gap between knowledge and practice on prevention of intestinal parasitic infections.
Identified Educational status and sources of information exposure is contributing factors in prevention of intestinal parasitic infections. This investigation put pattern for tentative arrangement of mediation and offers data to all concerned bodies that can give answer for the issue.

Competing Interests
- There are no competing financial interests declared by any individual or organization in this manuscript, nor are there any competing non-financial interests such as political, medical, religious, ideological, scholarly, intellectual, commercial, or other.

Authors’ Contributions:
- Pandiarajan Kasimayan as a corresponding author; the soul concept and design of work was done. Anandapandian Kanapathy Thangavel Kasirajan and Divya Rani Rajan were contributed in analysis and interpretation of data. Dr. Shankaralingam Subbiah and Dr. Harinathan Balasundaram have worked on drafting of final work. Similarly, the final version of the manuscript has been read and accepted by all contributors.

Ethical approval
Ethical clearance obtained from Bule Hora University, College of Health Science School Institutional Review Board (IRB). Permission from respective authorities and verbal consent of respondents’ was secured by explaining the objective of the study before the data collection. Respondents were reassured that their answers would be kept private in order to gain their complete cooperation. They have also ensured their voluntary participation and right to take part or terminate at any time they wanted. The research assistants were trained by the principal investigators on how to keep the confidentiality and anonymity of the responses of the respondents in all aspects.

Consent
A well-informed written consent was obtained from each research participant after the possible risks and benefits as well as the investigational purpose of the study were identified.

Conflict of Interest
There is no conflict of interest on the publication of this research paper.

Duplicated publication
- The authors confirm that the manuscript is original, has not already been published in a journal, and is not currently under consideration by another journal.
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Table 1 Socio-demographic variables of mothers’ of under-five children in Bule Hora town, Southern Ethiopia, 2021.

| SL. NO | VARIABLES                      | FREQUENCY (N) | PERCENTAGE (%) |
|--------|--------------------------------|---------------|----------------|
| 1      | Age                            |               |                |
|        | >36                            | 149           | 37.0           |
|        | 26-30                          | 137           | 34.0           |
|        | 31-35                          | 84            | 20.8           |
|        | <25                            | 33            | 8.2            |
| 2      | Marriage Status                |               |                |
|        | Single                         | 76            | 18.9           |
|        | Divorced                       | 70            | 17.4           |
|        | Living Together                | 222           | 55.1           |
|        | Widower                        | 35            | 8.7            |
| 3      | Ethnicity                      |               |                |
|        | Gedeo                          | 95            | 23.6           |
|        | Oromoo                         | 171           | 42.4           |
|        | Amhara                         | 79            | 19.6           |
|        | Others( burgi, guragee..)      | 58            | 14.4           |
| 4      | Mother’s Education             |               |                |
|        | College and above              | 39            | 9.7            |
|        | Read and write                 | 46            | 11.4           |
|        | Primary                        | 92            | 22.8           |
|        | Secondary                      | 77            | 19.1           |
|        | Unable to read and write       | 149           | 37.0           |
| 5      | Mother’s Occupation            |               |                |
|        | Gov’t Employee                 | 89            | 22.1           |
|        | House Wife                     | 142           | 35.2           |
|        | Private Employee               | 101           | 25.1           |
|        | Daily Wages                    | 71            | 17.6           |
| 6      | Number of Under-five children  |               |                |
|        | One                            | 155           | 38.5           |
|        | Two and More                   | 248           | 61.5           |
| 7      | Income/month                   |               |                |
|        | <1000 Birr                     | 43            | 10.7           |
|        | 1001 TO 3000 Birr              | 142           | 35.2           |
|        | >3001 Birr                     | 218           | 54.1           |
| 8      | Husband Education              |               |                |
|        | College and above              | 16            | 4.0            |
|        | Read and write                 | 30            | 7.4            |
|        | Primary                        | 53            | 13.2           |
|        | Secondary                      | 152           | 37.7           |
|        | Unable to read and write       | 152           | 37.7           |
Table 2 over all knowledge of mothers of under-five on prevention of intestinal parasitic infections:

| Over all knowledge level | Frequency (N) | Percentage (%) |
|--------------------------|---------------|----------------|
| Poor knowledge           | 208           | 51.6           |
| Good knowledge           | 195           | 48.4           |
| Total                    | 403           | 100.0          |
Table 3 Variable wise knowledge of mothers of under-five on prevention of intestinal parasitic infections in Bule Hora town, Southern Ethiopia, 2021.

| Sl. No | Knowledge Variables | Frequency (N) | Percentage (%) |
|--------|---------------------|---------------|----------------|
| 1      | Which prevention mechanism of IPI do you know of? |                           |                 |
|        | Hand Washing        | 58            | 14.4           |
|        | Using Latrine       | 27            | 6.7            |
|        | Washing Vegetables  | 57            | 14.1           |
|        | Avoid food and water contaminations | 96        | 23.8           |
|        | Hand washing and Using Restroom | 61        | 15.1           |
|        | Washing Vegetables, hand avoid food and water contaminations and using latrine | 86             | 21.3           |
|        | I don't know        | 18            | 4.5            |
| 2      | Which method of transmission of IPI do you know of? |                           |                 |
|        | Soil Contact        | 77            | 19.1           |
|        | Contaminated Water  | 28            | 6.9            |
|        | Contaminated Food   | 60            | 14.9           |
|        | Uncooked Vegetables and Unclean fruits | 93        | 23.1           |
|        | Debased food and water | 56            | 13.9           |
|        | Contaminated food and soil Contact | 23         | 5.7            |
|        | Uncooked Veg, unclean fruits, soil, contaminated food and Water | 43             | 10.7           |
|        | I don't know        | 23            | 5.7            |
| 3      | Which sign and symptoms of IPI do you know of? |                           |                 |
|        | Diarrhea            | 30            | 7.4            |
|        | Abdominal Cramps    | 56            | 13.9           |
|        | Vomitting           | 61            | 15.1           |
|        | Anorexia            | 82            | 20.3           |
|        | Diarrhea and Vomitting | 72        | 17.9           |
|        | Abdominal Cramps, diarrhea, and Anorexia | 64             | 15.9           |
|        | I don't know        | 38            | 9.4            |
| 4      | Which complication of IPI do you know |                           |                 |
|        | Malnutrition        | 53            | 13.2           |
|        | Anemia              | 37            | 9.2            |
|        | Growth Retardation  | 87            | 21.6           |
Table 4:- Over all practice level of mothers of under-five on prevention of intestinal parasitic infection.

| Over All practice level | Frequency (N) | Percentage (%) |
|-------------------------|---------------|----------------|
| Poor practice           | 214           | 53.1           |
| Good practice           | 189           | 46.9           |
| Total                   | 403           | 100.0          |

| 5 | Which is Specific age for deworming a child? | starts from 1 year | 89 | 22.1 |
|   |                                            | 2-4 years old      | 70 | 17.4 |
|   |                                            | school going 5 years old | 49 | 12.2 |
|   |                                            | 6-12 years old     | 8  | 2.0  |
|   |                                            | 14 years and above | 49 | 12.2 |
|   |                                            | 12-23 months and so on | 44 | 10.9 |
|   |                                            | I don’t know       | 94 | 23.3 |

Table of? of?

- Malnutrition and Growth Retardation 110 27.3
- Malnutrition, Growth Retardation and Anemia 51 12.7
- I don't know 65 16.1
Table: 5 Variable wise practice levels of mothers of under-five on prevention of intestinal parasitic infection in Bule Hora town, Southern Ethiopia, 2021.

| Sl. No | Variables                                                                 | Response  | Frequency (N) | Percentage (%) |
|--------|---------------------------------------------------------------------------|-----------|---------------|----------------|
| 1      | Does your youngster have any stool assessment history?                    | Yes       | 224           | 55.6           |
|        |                                                                           | No        | 179           | 44.4           |
| 2      | Do you wash your youngster's hand before any meal time?                   | Yes       | 366           | 90.8           |
|        |                                                                           | No        | 37            | 9.2            |
| 3      | Do you have habits of frequently changing child's dirty clothes?          | Yes       | 329           | 81.6           |
|        |                                                                           | No        | 74            | 18.4           |
| 4      | Do you cut your child nails often?                                        | Yes       | 367           | 91.1           |
|        |                                                                           | No        | 36            | 8.9            |
| 5      | Does your family have regular hand washing practice?                      | Yes       | 335           | 83.1           |
|        | Do you use always clean and safe water to prevent any infections?         | Yes       | 306           | 75.9           |
|        |                                                                           | No        | 97            | 24.1           |
| 7      | Do you wash your youngster's hands and legs after play in soil?           | Yes       | 215           | 53.3           |
|        |                                                                           | No        | 188           | 46.7           |
| 8      | Do you advice your child to wear foot wear always outside the home?       | Yes       | 177           | 43.9           |
|        |                                                                           | No        | 226           | 56.1           |
| 9      | Do you utilize cleanser to clean completely utilized utensils?            | Yes       | 347           | 86.1           |
|        |                                                                           | No        | 56            | 13.9           |
| 10     | Do you eat well cooked meat/food always?                                  | Yes       | 386           | 95.8           |
|        |                                                                           | No        | 17            | 4.2            |
| 11     | Do you wash foods grown from the ground vegetables completely prior to eating? | Yes       | 338           | 83.9           |
|        |                                                                           | No        | 65            | 16.1           |
Table 6: - Bivariate and multivariate analysis of information on mothers of under-five youngsters in regards to avoidance of intestinal parasitic infections in Bule Hora town, Southern Ethiopia, 2021.

| SL. NO | VARIABLES | COR(95% CI) | AOR(95% CI) |
|--------|-----------|-------------|-------------|
| 1 Age  | >36       | 1           | 1           |
|        | 26-30     | 0.381(0.773-1.966) | 1.234(0.704-2.160) |
|        | 31-35     | 0.007(1.223-3.640)** | 1.231(0.611-2.480) |
|        | <25       | 0.516(0.603-2.737) | 1.125(0.423-2.993) |
| 2 Marriage Status | Single | 1           | 1           |
|        | Divorced  | 1.14(0.590-2.226) | 0.387(0.124-1.202) |
|        | Living Together | 1.839(1.080-3.132)* | 0.624(0.223-1.751) |
|        | Widower   | 1.925(0.856-4.327) | 0.838(0.339-2.071) |
| 3 Ethnic Group | Gedeo | 1           | 1           |
|        | Oromoo    | 1.968 (1.014-3.821)* | 2.199 (1.054 - 4.587)* |
|        | Amhara    | 0.796 (0.437-1.449) | 0.804(0.404-1.599) |
|        | Others( burgi, guragee..) | 1.064 (0.540-2.098) | 1.181 (0.538- 2.593) |
| 4 Mother’s Education | College and above | 1           | 1           |
|        | Read and write | 1.318 (0.557-3.118) | 0.175(0.064-0.476)** |
|        | Primary   | 1.207 (0.566-2.578) | 0.382(0.165-0.886)* |
|        | Secondary | 0.776 (0.352-1.713) | 0.335(0.152-0.738)** |
|        | Unable to read and write | 2.074 (1.013-4.247)* | 0.258(0.117-0.568)** |
| 5 Mother’s Occupation | Gov’t Employee | 1           | 1           |
|        | House Wife | 1.041 (0.612-1.772) | 1.962 (0.965-3.992) |
|        | Private Employee | 0.560 (0.315-0.997)* | 0.978(0.423-2.261) |
|        | Daily Wages | 0.590 (0.314-1.108) | 0.871 (0.421-1.800) |
| 6 Number of Under-five children | One | 1.234 (0.825-1.846) | |
|        | Two and More | 1           | 1           |
| 7 Income/ month | <1000 Birr | 1           | 1           |
|        | 1001 TO 3000 Birr | 1.076 (0.540-2.147) | NA |
|        | >3001 Birr | 1.551(0.800-3.005) | NA |
| 8 Husband Education | College and above | 1           | 1           |
|        | Read and write | 0.765 (0.226-2.583) | NA |
|        | Primary | 1.650(0.535-5.090) | NA |
|        | Secondary | 0.600(0.213-1.687) | NA |
|        | Unable to read and write | 1.235(0.441-3.463) | NA |

* Factors huge at level of p<0.01 and 0.05

** Factors huge at the degree of p<0.001
Table 7: Bivariate and multivariate analysis of practice of mothers of under-five youngsters with respect to counteraction of intestinal parasitic infections in Bule Hora town, Southern Ethiopia, 2021.

| SL. NO | VARIABLES                   | COR(95% CI)      | AOR(95% CI)      |
|--------|-----------------------------|------------------|------------------|
| 1      | Age                        |                  |                  |
|        | >36                         | 1                | 1                |
|        | 26-30                       | 1.684 (1.048-2.705)* | 1.733(0.946-3.175) |
|        | 31-35                       | 3.260 (1.866-5.698)** | 2.938(1.384-6.238)* |
|        | <25                         | 1.705 (0.797-3.648) | 2.190(0.761-6.302) |
| 2      | Marriage Status            |                  |                  |
|        | Single                      | 1                | 1                |
|        | Divorced                    | 1.619(0.836-3.136) | 1.804(0.745-4.368) |
|        | Living Together             | 1.842(1.079-3.147)* | 1.563(0.726-3.363) |
|        | Widower                     | 0.894(0.386-2.070) | 0.613(0.178-2.111) |
| 3      | Ethnic Group                |                  |                  |
|        | Gedeo                       | 1                | 1                |
|        | Oromoo                      | 0.677(0.409-1.121) | 0.642(0.341-1.209) |
|        | Amhara                      | 0.406(0.218-0.754)* | 0.390(0.179-0.850)* |
|        | Others (burgi, guragee..)   | 1.171(0.605-2.268) | 1.541(0.695-3.420) |
| 4      | Mother's Education          |                  |                  |
|        | College and above           | 1                | 1                |
|        | Read and write              | 1.319(0.533-3.264) | 1.042(0.358-3.035) |
|        | Primary                     | 1.036(0.461-2.328) | 0.935(0.327-2.670) |
|        | Secondary                   | 2.192(0.972-4.946) | 1.709(0.608-4.806) |
|        | Unable to read and write    | 3.737(1.754-7.962)** | 3.969(1.261-12.488)* |
| 5      | Mother’s Occupation         |                  |                  |
|        | Gov’t Employee              | 1                | 1                |
|        | House Wife                  | 0.503(0.262-0.967)* | 0.885(0.352-2.226) |
|        | Private Employee            | 1.485(0.838-2.633) | 1.759(0.824-3.755) |
|        | Daily Wages                 | 1.346(0.732-2.475) | 1.309(0.597-2.869) |
| 6      | Number of Under-five children |                |                  |
|        | One                        | 1                | 1                |
|        | Two and More                | 0.786(0.525-1.177) | NA               |
| 7      | Income/month                |                  |                  |
|        | <1000 Birr                  | 1                | 1                |
|        | 1001 TO 3000 Birr           | 0.496(0.254-0.966)* | 0.721(0.309-1.682) |
|        | >3001 Birr                  | 0.387(0.250-0.600)* | 1.225(0.516-2.906) |
| 8      | Husband Education           |                  |                  |
|        | College and above           | 1                | 1                |
|        | Read and write              | 0.670(0.173-2.593) | 0.615(0.140-2.694) |
|        | Primary                     | 1.131(0.341-3.758) | 2.582(0.639-10.434) |
|        | Secondary                   | 1.435(0.475-4.336) | 1.321(0.345-5.057) |
|        | Unable to read and write    | 4.109(1.356-12.451)* | 1.954(0.497-7.676) |

* Factors huge at level of p<0.01 and 0.05
** Factors huge at the degree of p<0.001
Figure 1

Over all knowledge of mothers of under-five on prevention of intestinal parasitic infections