Chapter

Household Water Treatment Practice

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Abstract

Improvements in water quality and a decrease in the prevalence of diarrheal disease in poor nations have been linked to household water treatment and safe storage practices. The objective of this study was to assess knowledge and practice of household water treatment and associated factors in rural kebeles of Dega Damot Woreda, North West Ethiopia, 2021. In Dega Damot Woreda, North West Ethiopia, in 2020, a community-based cross-sectional study was carried out. To choose 845 households in the study area, a multistage sampling procedure was used. Pretested questionnaires were used to collect the data, which was then entered into Epi-data for cleaning and analysis before being exported to SPSS, and multivariable logistic regression analysis was used to identify factors. Only 14% of participants in this research were actively treating their home's water, whereas 71.8% knew about the technique. The following variables were significantly associated with household water treatment practice: educational status, income earning >600ETB per month, number of children under five in the household, and methods of fetching water. In Dega Damot Woreda, there was severe lack of household water treatment practices. The Woreda health office needs to raise community awareness and knowledge of domestic water treatment techniques.

Keywords: household water treatment, knowledge and practice, factors, Dega Damot, Ethiopia

1. Introduction

A sufficient supply of clean water is one of the most fundamental human requirements and must be provided for as they are two of the most significant factors affecting public health [1]. Water that poses no major risk to health over the course of a lifetime is considered to be safe for drinking. The United Nations (UN) formally recognized the human right to access safe water without restriction in 2010. To sustain a population's excellent health, safe water is essential [2, 3]. It is common knowledge that having access to clean water and sanitary facilities helps to stop the spread of disease. Only having access to clean water does not greatly lessen diarrheal illnesses. Even if the source is clean, feces can contaminate water during collection, transportation, storage, and home drawing [4–6].

Prior to usage, drinking water is subjected to household water treatment (HWT), which enhances its microbiologic purity. Due to the possibility of recontamination during the process of transport, storage, and consumption, it is thought to be superior to treatment at other levels (such as the source). It has been demonstrated to be among the most efficient and economical methods of preventing waterborne illnesses. Therefore, vulnerable groups take charge of their water security by treating and storing household water safely [7–9].

HWT can enhance the quality of drinking water at the point of use and lower the risk of diarrhea in the millions of people who rely on improved and unimproved water sources. HWT includes boiling, chlorination, filtration, and solar disinfection. When populations at risk of waterborne disease adopt efficient HWT procedures appropriately and consistently, the risk of diarrheal disease can be reduced by as much as 61% [10–12].

The majority of the world's 1.8 billion users of fecally contaminated water sources are in low- and middle-income nations. The largest health concern associated with water consumption is microorganisms found in water that has been feces-contaminated [13].

Nowadays, simple, low-cost, and acceptable household water treatment technologies are available. However, in many communities, there is limited knowledge and poor practice for water treatment [14]. Limited knowledge, misinformation, and lack of experience in best practices of alternative water treatment technologies are among the leading challenges [15]. People are not always aware of the risk related to transportation practices, storage, and handling of drinking water.

Nearly 90% of Ethiopia's rural residents do not use alternate water treatment techniques, putting them at significant risk for disease unless quick action is taken, such as alternative HWT techniques with safe water storage [16]. Furthermore, there are few studies on HWT knowledge, behaviors, and related factors in Ethiopia. Therefore, the purpose of this study is to evaluate household water treatment knowledge and practice in rural kebeles in Dega Damot Woreda, North West Ethiopia. The town/urban areas of eastern Ethiopia were where the majority of studies were conducted. The purpose of the current study is to evaluate home water treatment knowledge and practice in the study area.

2. Methods

2.1 Study area and period

The West Gojjam Zone's Dega Damot Woreda is where this study was carried out. The distance between Bahir Dar City, the seat of the Amhara Regional State, and Addis Ababa, the capital city of Ethiopia, is 275 kilometers. The district has a 41% highland climate, a 37% temperate climate, and a 22% lowland climate. In 2019, it will have an expected 184,369 residents (91,263 men and 93,106 women), who will be split among 42,877 houses. More than 99% of followers are orthodox. There are two urban and thirty-two rural Kebeles, seven health centers, one general hospital, two private clinics, and one private pharmacy [17]. There are 779 functional and 20 nonfunctional hand-dug wells, 68 functional and four nonfunctional protected springs, and two functional and one nonfunctional borehole. The rural population who use protected water sources is 138,740 (82.4%) [17]. The study was conducted from March 20/2021–April 20/2021.

Study design: Community-based cross-sectional study was employed.

Source population: All households in rural kebeles of Dega Damot Woreda.

Study populations: All households in the selected rural kebeles of Dega Damot Woreda.

Study subjects: Mothers who live in selected rural kebeles of Dega Damot Woreda.

Inclusion criteria: Mothers in the household were included in the selected kebeles.

Exclusive criteria: Mothers in the household who resided for less than 6 months were excluded from the study.

Dependent variables: Knowledge and practice of HWT.

Independent variables.

Sociodemographic characteristics: Sex, age, educational status, family size, marital status, occupation, religion, household income, and ethnicity were dependent variables that are found under sociodemographic character.

Knowledge about HWT: Knowledge of HWT methods, knowledge of purpose HWT, knowledge of water born disease, knowledge of negative outcome of drinking dirty water, and knowledge of causes and prevention of diarrhea.

Water source and handling status: Source of drinking water, type of container to fetch water, distance to fetch water, type of container to store water, and way of fetching water from container.

Operational definition.

Knowledge: Respondents are able to identify methods of HWT, recognize the importance of treating drinking water, and identify diseases that can result from drinking unclean water. Variables in the questionnaire were given a total score ranging from 0 to n where n is the number of knowledge questions. Using frequency distribution, a score of <50% of the total knowledge questions was considered as poor knowledge, whereas a score of ≥50% of the total knowledge questionswas labeled as good knowledge [15].

Household water treatment practice: Households who used at least one alternative method of HWT within the last 24 hrs were considered as good practices, which will be scored as one, while poor practices were considered as households who were not using any alternative method of HWT and scored as 0 [15].

Sample size determination and procedure.

Single population proportion formula was used to determine sample size with assumptions of 5% margin of error (d) 95% CI (Z = 1.96), design effect (d) of 2 and 10% nonresponse rate and taking prevalence of practice 44.8% from the study done in Burie, Northwest Ethiopia [18]. Thus, the final sample size was 845. A multistage sampling technique was used. Twenty percent of kebeles in Dega Damot Woreda were selected by simple random sampling method. The samples were distributed proportionally by the number of households for each selected kebeles. Study participants were selected by systematic random sampling from HHs in the selected kebeles. The sampling interval (k) was determined by study population (5218 HHS in the selected kebeles) divided by sample size (845) =6. Then, the data were collected at every six HH intervals. Lottery method was used to select the first study subject. Respondents were mothers of the households. In case, if there were more than one mother in the household, one of them was selected by lottery method.

2.2 Data collection tools and procedures

Socio-demographic characteristics were collected through face-to-face interviews and observation with mothers. The questionnaire and observation checklist were developed in English and were translated into local language (Amharic) and were translated back to English to keep the consistency prior to the actual data collection. Data were collected by ten students who completed grade 12 and were supervised by two public health officers.

2.3 Data quality control

The questionnaire was pretested on 5% of the sample size to check understandability and reliability of the questionnaires. One-day training was given to data collectors and supervisors on the study instrument, data collection procedure, and the ethical principles of confidentiality. The collected data were reviewed and checked for completeness and relevance by the supervisors and principal investigator each day.

2.4 Data processing and analysis

The questionnaire was manually reviewed for accuracy. It was afterward coded, inputted into Epi-Data version 4.2, and exported to SPSS version 25 for additional analysis. The population was explained using descriptive statistics in relation to the pertinent variables. Chi-square testing was conducted. The multivariable logistic regression was fitted to the variables with fewer than 0.25 p-values from the bivariate analysis using the binary logistic regression technique. In the multivariable logistic regression, odd ratios with 95% confidence intervals (CI) were generated, and statistical significance was assessed at p-values 0.05. Hosmer and Lemeshow tests were used to assess the fitness of the models. Text, tables, and graphs were utilized to present the data.

2.5 Ethical consideration

Ethical clearance was obtained from the ethical committee of BDU College of Medicine and Health Sciences and a letter of cooperation was delivered to the Dega Damot Woreda administration bureau in order to get letter of permission for kebeles. Anyone who has no willingness to participate in the study was not forced to participate. Informed (verbal) consent was obtained from each study participant. The study participants were also provided with information about the objectives and expected outcomes of the study. Information obtained from individual participants was kept secure and confidential.

3. Results

3.1 Sociodemographic characteristics of participants

This study included 845 mothers in all, with a 100% response rate. The respondents' mean (+SD) age was 40.46 (+12.16) years, and 64.9% of them were illiterate. Respondents had a mean (+SD) family size of 4.88 (+1.2). Nearly all of the interviewees were farmers and Christians, and most (87.2%) were married. More than half of the households made monthly incomes of over 600 ETB, (**Table 1**), (**Figure 1**).

3.2 Practice of respondents on HWT

Only 14.1% of the 845 participants were using HWT. For storing drinking water, nearly half of the respondents (51.7%) had two containers; the remaining respondents had three (27.7%), one (15.4%), and four or more (5.2%), respectively. Nearly all (98.8%) of the responders possessed a container large enough to hold more than 25 liters. Total of 43.6% of respondents reported fetching drinking water three times daily, while the rest of respondents did so only twice, three times, or more, once, or only once. The majority (96.9) of the household's drinking water storage containers were plastic containers (rotto). Others utilized iron containers (0.4%) and clay pots (2.72%). Similarly, they used jerican (96.8%) and clay pots for the remaining portion of water retrieval. Nearly all families (98.7%) had clean household water containers, and of those, little under half (53.8) were cleaned once a week. The others were cleaned every day (11.5%) and within three days (34.7%) (**Table 2**), (**Figures 2** and **3**).

3.3 Knowledge of participants on HWT

About 28.2% of households have adequate knowledge of HWT, which is close to one-third. Only 24.4% of the respondents acknowledged knowing at least one HWT method, with the remainder not having done so. And of those, 84.4% had mentioned boiling, while the rest were familiar with chlorine. Only 34.8% of homes answered "yes" to the question "is it advisable to treat water for promoting child health" since the majority (84%) of households had little knowledge of diseases that are transmitted by water (**Table 3**), (**Figures 4–6**).

Variables	Response	Frequency (n = 845)	Percentage (100)
Educational status	Unable to read and write	548	64.9
	Read and write	297	35.1
Family size	< 5	609	72.1
	>5	236	27.9
Marital status	Married	737	87.2
	Single	33	3.9
	Divorced	25	3
	Widowed	50	5.9
Income	< 600 ETB	285	33.7
	≥ 600 ETB	560	66.3
Occupation	Farmers	843	99.8
	Others	2	0.2
No. of under-five children	No under-five children	450	53.2
	One,	342	40.5
	Two, and above	53	6.3

Table 1.
Sociodemographic characteristics of participants in Dega Damot Woreda, North West Ethiopia, 2021 (n = 845).

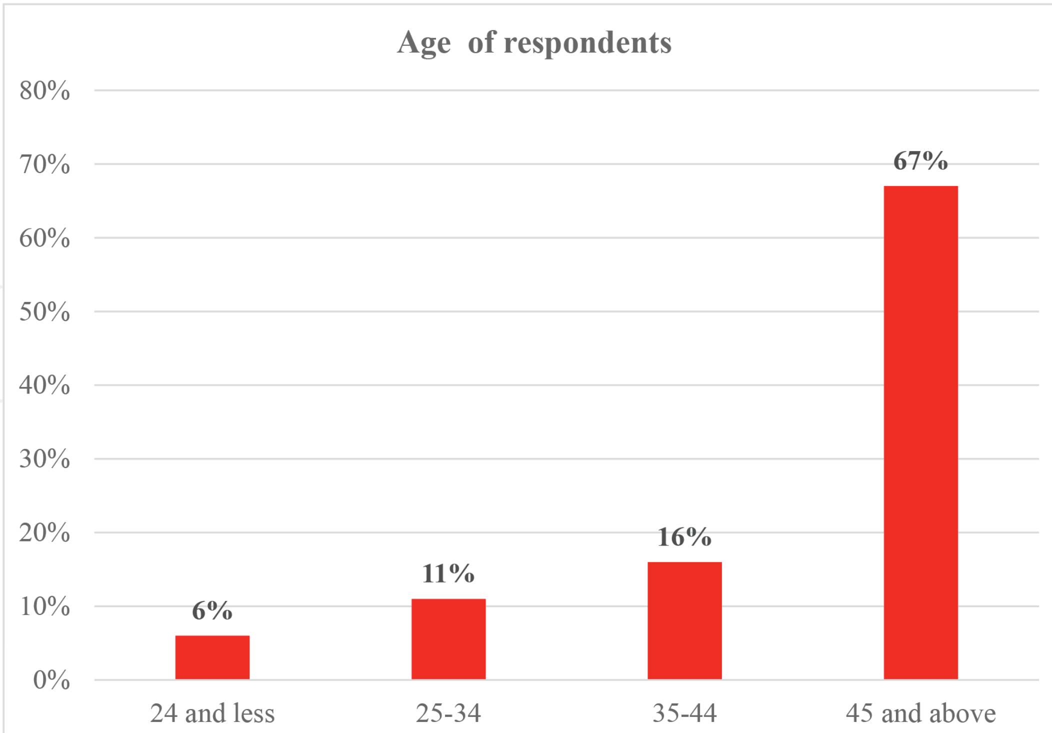

Figure 1.
Age of respondents in Dega Damot Woreda selective kebeles, North West Ethiopia, 2020 (n = 845).

Variables	Category	Frequency	Percent (100)
Overall HWT practice	Yes	119	14.1
	No	726	85.9
Individuals who fetch water	Mother	579	68.5
	Daughter	257	30.4
	Son	9	1.1
Distance to fetch water	<30 minute	643	76.1
	30–60 minute	192	22.7
	>60 minute	10	1.2
Number of days the water stored in the HH	One,	749	88.6
	Two,	74	8.8
	Three, and above	22	2.6
Days of the week water source has no service	Yes	39	4.6
	No	806	95.4
Way of fetching water from the containers	Pouring	467	55.3
	Dipping	378	44.7

Table 2.
Practice of respondents on HWT in Dega Damot Woreda selective kebeles, Amhara, Ethiopia, 2021 (N = 845).

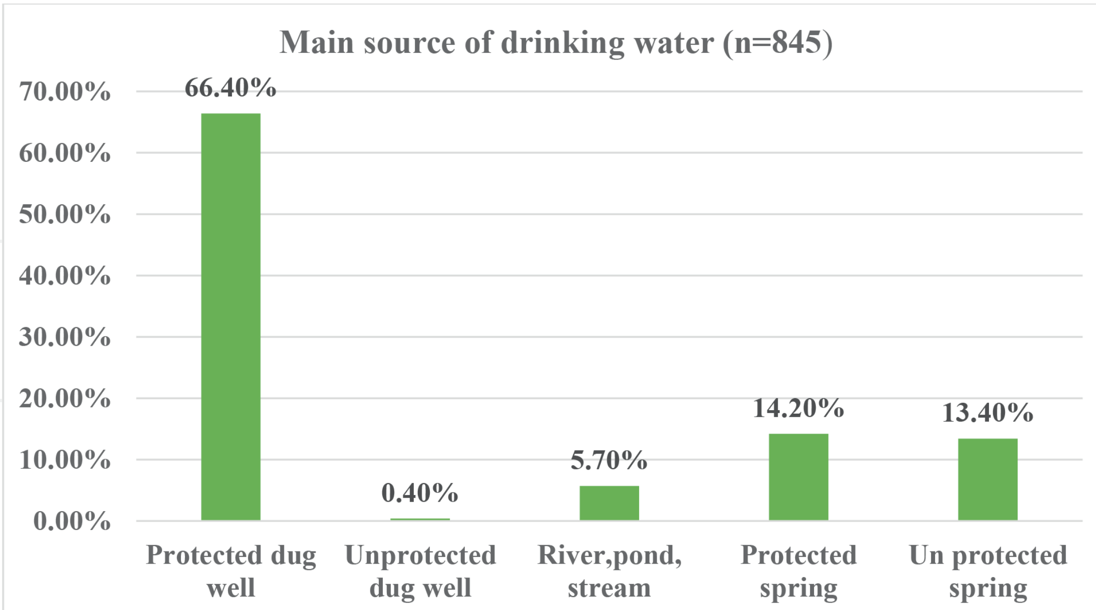

Figure 2.
Main source of drinking water for respondents in Dega Damot Woreda selective kebeles, North West Ethiopia, 2021 (n = 845).

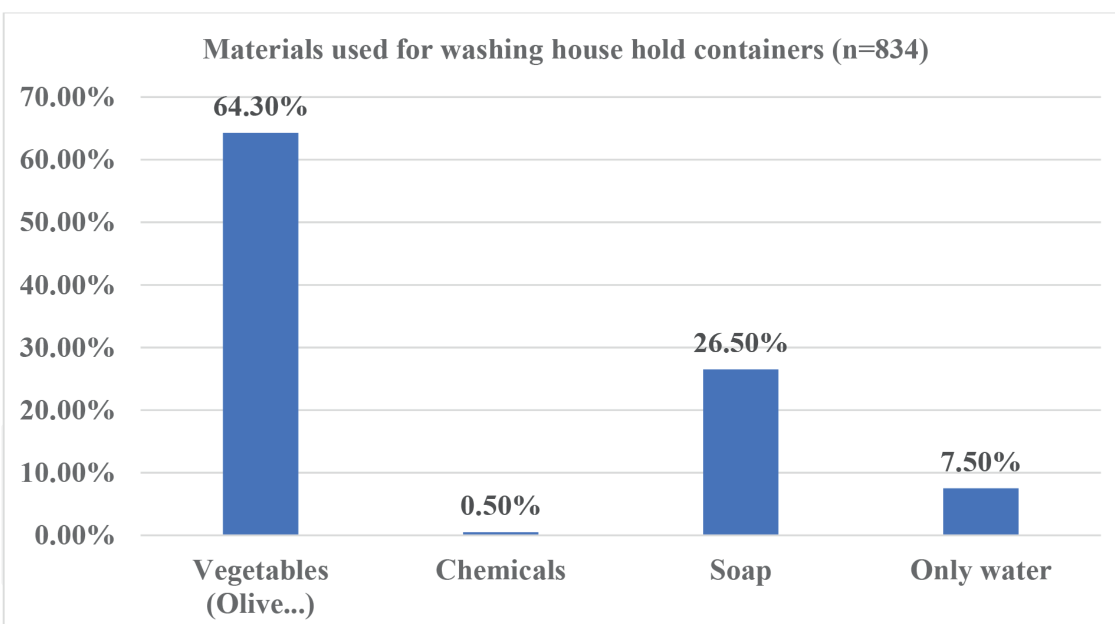

Figure 3.
Materials used for washing household containers for respondents in Dega Damot Woreda selective kebeles, Amhara, Ethiopia, 2021 (n = 845).

3.4 Bivariate and multivariate analysis of factors associated with practices on HWT

Age, educational level, family size, income, the number of children under the age of five, the method used to obtain drinking water, the type of container used to store

Variables	Response	Frequency	Percent (100%)
Overall Knowledge of participants on HWT	Good	238	28.2
	Poor	607	71.8
Knowledge about any disease caused by dirty water	Yes	194	23
	No	651	77
Childhood diarrheal disease prevented by safe water	Yes	307	36.3
	No	538	63.7
Knowledge about contamination of water at HH level	Yes	423	50.1
	No	422	49.9
Drinking water contaminated by unclean drinking utensils	Yes	467	55.3
	No	378	44.7
Difference between protected and unprotected water source	Yes	166	16.9
	No	679	84.1
Protected water sources may not be completely free from pathogenic organisms	Yes	155	18.3
	No	690	81.7
Cleanliness of drinking water by necked eye only	Yes	395	46.7
	No	450	53.3
Narrow necked water container is better than wide necked to prevent water contamination	Yes	591	69.9
	No	254	31.1
Children are more susceptible to diarrheal disease	Yes	375	44.4
	No	470	53.6
Treated water intake reduces family medical expense	Yes	347	41.1
	No	498	58.9

Table 3.
Knowledge level of the respondents on HWT in Dega Damot selective Woreda, Amhara, Ethiopia, 2021 (N = 845).

drinking water, the location where drinking water handling utensils were handled, and knowledge of HWT all had an association with HWT practice. Using the backward likelihood ratio approach, all factors with associations to the outcome variables in bivariate logistic regression analyses (p-value 0.25) were added to the multivariate logistic regression analysis models. Then, in multivariate logistic regression analysis, parameters such as educational status, income, the number of children under the age of five, the methods used to obtain drinking water, and HWT knowledge were found to be substantially associated with the practice of HWT.

The odds of practicing the HWT are more than seven times higher in homes with literacy than in households without literacy [AOR: 7.27, 95% CI: (4.36–12.11)]. When compared to households earning less than 600 ETB per month, households earning more than 600 ETB per month are almost three times more likely to practice HWT [AOR: 2.71 95% CI: (1.45–5.05)]. When compared to households with two or more under-five children, those without under-five children had an 83% lower likelihood of practicing HWT (AOR: 0.17, 95% CI: (.07–.41)). Similar to this, households that used pouring to obtain drinking water from the container are 0.42 times less likely to engage in HWT than households that utilized dipping [AOR: 0.42 95% CI: (.26–.67)].

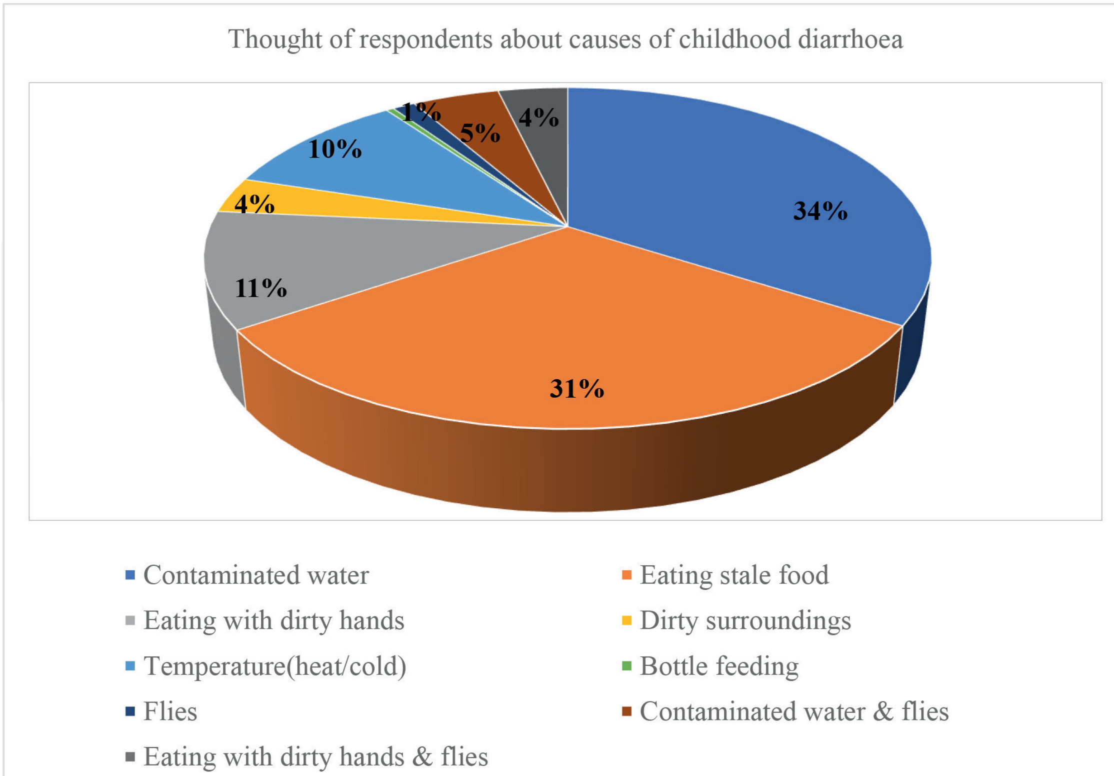

Figure 4.
Thoughts of respondents about causes of childhood diarrhea in Degad Dmot Woreda selective kebeles, Amhara, Ethiopia, 2021 (n = 845).

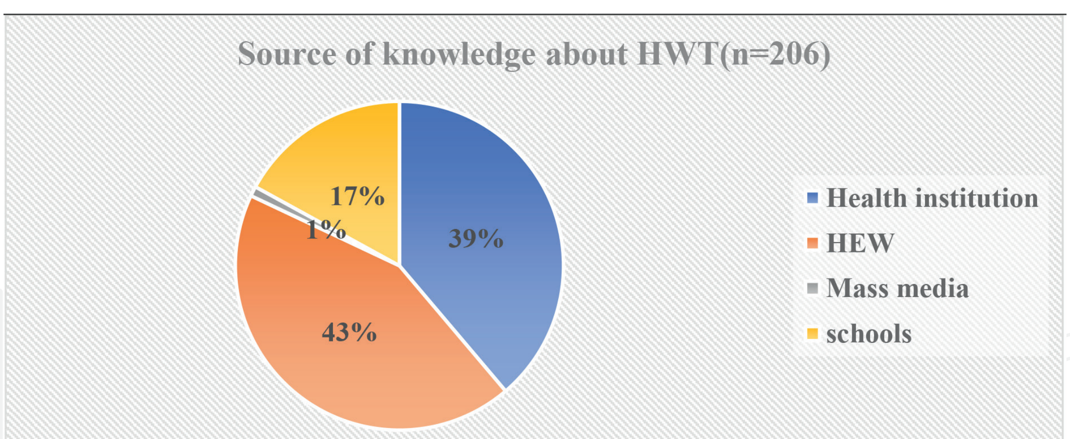

Figure 5.
Source of knowledge for respondents in Dega Damot Woreda selective kebeles, Amhara, Ethiopia, 2020 (n = 845).

Additionally, compared to their counterparts, those who had solid knowledge of HWT were approximately three times more likely to practice it [AOR: 3.03, 95% CI (1.84–5.01)] (**Table 4**).

3.5 Bivariate and multivariate analysis of factors associated with knowledge of HWT

Binary logistic regression was used to find the variables connected to HWT knowledge. Age of respondents, educational level, marital status, income, source of water to fetch, quantity of containers to fetch, methods to fetch drinking water, type of

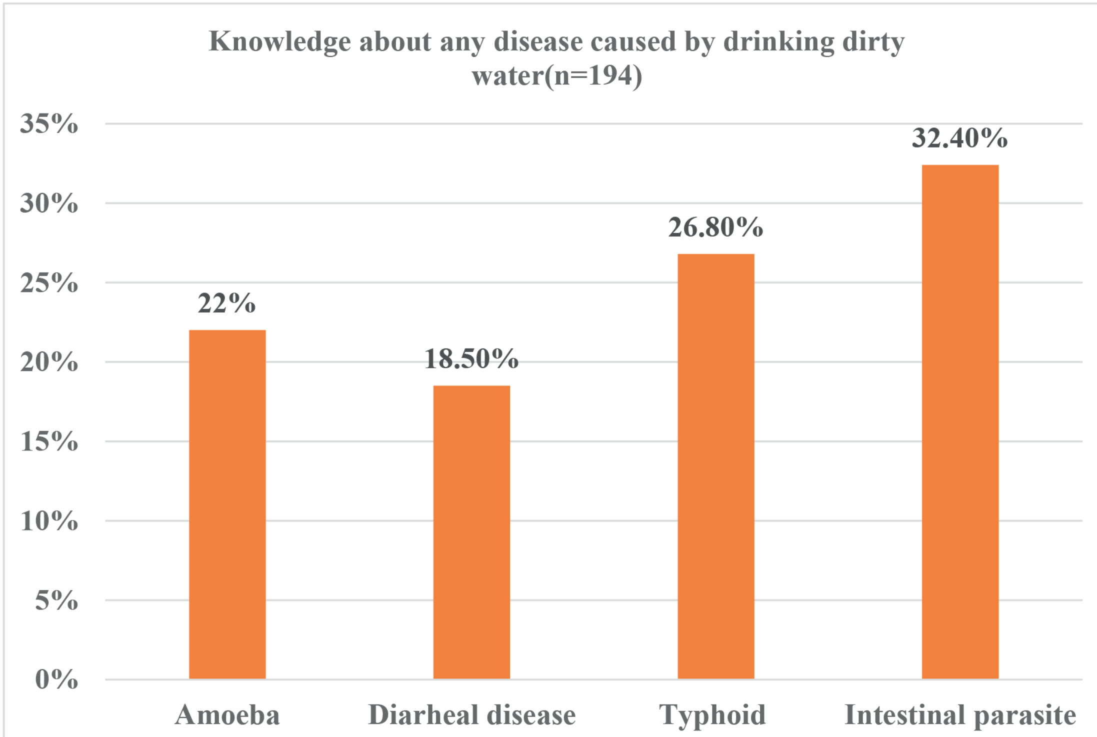

Figure 6.
Knowledge about any disease caused by drinking dirty water of respondents in Dega Damot Woreda, North West Ethiopia, 2021.

Variables	Category	Practice on HWT		COR (95%CI)	AOR (95%CI)	P-value
		Yes	No			
Educational status	Read and write	90	207	7.78 (4.96–12.18)	7.27 (4.36–12.11)	000
	Unable to read and write	29	519	1	1	
Income	<600	14	271	1	1	
	≥600	105	455	4.46 (2.5–7.95)	2.71 (1.45–5.05)	.002
Number of <5 children	No under-five children	21	429	.18 (.08–.41)	.17 (.07–.41)	000
	1	87	255	1.3 (.64–2.64)	.79 (.36–1.75)	
	≥2	11	42	1	1	
Ways to fetch water	Pouring	44	423	.42 (.28–.62)	.42 (.26–.67)	000
	Dipping	75	303	1	1	
Knowledge on HWT	Good knowledge	47	191	1.83 (1.22–2.74)	3.03 (1.84–5.01)	000
	Poor knowledge	72	535	1	1	

Table 4.
Bivariate and multivariate analysis of factors associated with practice on HWT among respondents in Dega Damot selective kebeles, Amhara, Ethiopia, 2021 (n = 845).

container to store drinking water, and location of handling utensils for drinking water all had associations with knowledge of HWT practice in bivariate logistic regression analysis. Using the backward likelihood ratio approach, all factors from the bivariate logistic regression analyses that have a relationship with the outcome variables were incorporated into the multivariate logistic regression analysis models. The factors that were significantly associated with knowledge of HWT in the multivariable logistic regression analysis were educational level, marital status, source of drinking water, number of containers for drinking water (those who had two and three or more), and locations to handle drinking water utensils.

The odds of having knowledge of the HWT are 1.78 times greater in households with literacy than in households without literacy [AOR: 1.784, 95% CI: (1.237–2.572)]. Being single increases the likelihood of knowing about HWT compared to households with widows [AOR: 4.68, 95% CI: (1.68–13.05). Similar to this, families with protected drinking water sources have nearly three times the likelihood of knowing about HWT than those with unprotected sources [AOR: 2.73, 95% CI: (1.88–3.96)]. In this regard, the odds of having knowledge of HWT are nearly two times higher in households with two water storage containers than in households with only one container

Variables	Category	Knowledge on HWT		COR (95% CI)	AOR (95%CI)	P-value
		Good	Poor			
Educational status	Read and write	174	374	1.69 (1.42–3.82)	1.78 (1.23–2.57)	000
	Unable to read and write	64	233	1	**1**	
Marital status	Married	200	535	1.06 (.55–2.03)	1.24 (.62–2.47)	
	Single	15	18	2.37 (.93–6.02)	4.68 (1.68–13.05)	000
	Divorced	10	15	1.89 (.68–5.26)	2.73 (.94–7.92)	
	Widowed	13	37	1	1	
Source of water to fetch	Unprotected	72	92	2.42 (1.7–3.46)	2.73 (1.88–3.96)	000
	Protected	166	515	1	1	
No of containers to store water	One	192	562	1	1	
	Two	27	37	2.13 (1.26–3.6)	2.22 (1.29–3.84)	0.04
	Three and above	19	8	6.95 (2.99–16.13)	7.59 (3.15–18.27)	000
Place of handling utensils	On shelf (over the floor)	141	271	1.8 (1.33–2.44)	1.86 (1.34–2.56)	000
	Anywhere on the floor	97	336	1	1	

Table 5.
Bivariate and multivariate analysis of factors associated with knowledge of HWT among respondents in Dega Damot selective kebeles, Amhara, Ethiopia, 2021 (n = 845).

[AOR: 2.22, 95% CI: (1.29–3.84)] and nearly eight times higher in households with three or more water storage containers than in households with only one container [AOR: 7.59, 95% CI: (1.29–3.84)]. Additionally, the likelihood that a family handles drinking utensils on a shelf as opposed to handling them randomly on the floor is nearly twice as high [AOR: 1.86, 95% CI: (1.34–2.56) (**Table 5**).

4. Discussion

Water is the most significant factor affecting public health, and having access to enough clean water is crucial for lowering disease transmission. Access to clean water does not dramatically reduce disease rates even if the source is safe since it can become faecally polluted during collection, transit, storage, and drawing in the home [4–6]. Above all, it is crucial to be knowledgeable about household water treatment and to put that information into practice by using highly advised techniques.

According to this study, HWT practice was found to be 14.1% (CI 11.8–16.3). This self-reported study's prevalence of HWT practice (14.1%) was much lower than studies carried out in India (53%), Zambia (50%), Nigeria (54%), and Kenya (69%) [9, 19–21], respectively. The disparity may result from different coverage of clean water as well as different household-level water treatment options across the nation depending on people's knowledge of the availability and quality of water. Additionally, Ethiopian communities, particularly in rural regions, do not use this water purification procedure [16].

This study's results were lower than those of a study done in North West Ethiopia (23.1%), as well. The discrepancy is likely the result of a different study environment where the community in the prior study received information from many sources and, as a result, had greater awareness of the problem than the study site in the present [15]. The current finding, however, was slightly higher than a study carried out in a rural area of Haryana, India (10%) [22]. The difference could be the result of a time difference between now and seven years ago when the prior was completed. Additionally, the sample size used in the earlier study was less than half of the sample size employed in this investigation.

When examining the extent of HWT knowledge, it was discovered to be 28.2% CI (25.3–31.5). This result was consistent with a research carried out in Nigeria (26.1%) [9]. However, this was considerably less than research conducted in India (69%) [19]. The original study was carried out in a nation that is more developed than the current study area, where it would have been possible to provide information regarding HWT that was more easily accessible. Additionally, this was less than the research conducted in North West Ethiopia (49.3%) [15]. This discrepancy may be the result of the communities' varying socioeconomic conditions, which may have an impact on how they use source water for drinking. However, it exceeds a research conducted in Patan (16.7%) [23]. This is most likely a result of the use of a tiny sample size, which is almost one-fourth of the sample size used in the current study.

There were variables in this study that showed a strong correlation with HWT practice. The first one was the level of education in each household. Reading and writing-capable households performed HWT better than their counterparts. Two studies conducted in Ethiopia's Bure Zuria and Dabat districts backed up the conclusion [15, 18]. This is because literate people are better able to learn about HWT practice and comprehend procedures than their illiterate counterparts.

The second factor that was substantially linked to practicing the HWT was having a household income of more than 600 ETB per month, which was 2.71 times higher than that of their counterpart. This was corroborated by a study carried out in North West Ethiopia, which explained that the more money a household makes, the more they can afford to purchase the supplies required for therapy [15].

Thirdly, HWT was less common in homes with less than five kids compared to those with just one. Since this study indicated that most households (52.4%) are aware that untreated water causes juvenile diarrheal disease, it is probably because mothers who live in households with children practice HWT more to protect their children from water-borne illness. The fourth substantially linked variable was the likelihood of HWT practiced by households; these households were less likely to obtain their drinking water by pouring from the container. This might be because participants believed that pouring was a secure way to handle water.

Good knowledge of HWT practice is the final and fifth factor that is significantly related to HWT practice. Research conducted in Patan and North West Ethiopia supported this [15, 23]. The more information families have about HWT, the more likely they are to use it.

Knowledge of HWT was another dependent variable in this study. The first factor that was strongly linked to this variable was educational attainment. Reading and writing-capable households were more likely to be aware of HWT. A study conducted in Patan, Biye Kaduna state, Nigeria, and Dabat North West Ethiopia provided evidence in favor of this [9, 15, 23, 24]. It goes without saying that being able to read and write is crucial if one wants to increase their knowledge through various methods.

The second variable that was significantly linked to HWT knowledge was marital status. Single-person households knew more about HWT than widowed households did. This is supported by a study done in Patan [23]. Due to the lack of children or elderly people to carry out the practice, singletons are likely to have a lighter workload. Additionally, singles had higher levels of education than divorced people (88% vs. 12%).

Thirdly, factors related to understanding of HWT included sources of water that were protected. Families with improved/protected drinking water sources have higher levels of knowledge than their counterparts. This was corroborated by a study conducted in Northwestern Ethiopia [15]. This suggests that households take more precautions to avoid using unprotected drinking water the more they are aware of HWT. The knowledge of all the negative effects of unprotected water on health also made people aware of the need to use protected water sources.

The fourth and final variable was the number of water storage containers, and it was substantially correlated with understanding of HWT. Homes with two water storage containers for drinking water were more likely to be aware of HWT than homes with just one container. Similar to this, homes with three water storage containers were more likely to be familiar with HWT than those with just one container, and even they were more familiar with it than households with only two containers. Households on the HWT may already be aware of this, and its benefit may have forced them to have more water storage tanks. The number of water bottles a household has actually indicated how well-versed they are in using them individually for various functions. The others may be used for different purposes, while one may be used for dipping water that is obtained from containers by fixing it within.

Last but not least, the location where drinking utensils were handled was a factor that significantly correlated with HWT knowledge. Families who handled their utensils on a shelf or anywhere other than the floor were more likely to be familiar with HWT than those whose utensils were handled on the floor. This suggests that handling their utensils while on the shelf, on the floor, or in a safe place may protect homes from many water-borne diseases. And they are acting in this way because they are aware of proper utensil handling. This is the fact that all water drinking supplies should be stored safely and away from any unclean items, such as on a shelf or somewhere else other than the ground.

5. Conclusion and recommendations

5.1 Conclusion

According to this study, there is a lack of HWT practice and knowledge in the Dega Damot Woreda. Factors substantially linked with HWT practice included educational status, income earning >600ETB, the number of children in the home under the age of five, the means of fetching water, and understanding of HWT. In contrast, characteristics such as educational level, marital status, drinking water source, quantity of water storage containers, and location of utensil handling exhibited a significant association with understanding of HWT.

5.2 Recommendations

The author offers the recommendations below in light of the findings of this study:

Woreda government office: The Woreda office, working with the Woreda health office, shall provide protected water for drinking in order to raise knowledge of the regional state.

Dega Damot Woreda water office: It is better to inform the community about HWT procedures and show them by kebeles/sub kebeles when the Woreda water office collaborates with the Woreda health office. Additionally, they must demonstrate how to obtain and use the chemicals used in water treatment.

Nongovernmental organizations: Nongovernmental organizations that are involved in the water supply are better to perform wonderful activities to enhance community knowledge and their practice. It is also preferable to adopt the supporting resources required for HWT practice as soon as the community approached to do so.

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