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Assessment of Urban Health Extension Package Utilization and Healthcare Seeking Behavior among Model and Non-Model Households in Addis Ababa, Ethiopia

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Abstract

Background: Ethiopia has been implementing the Urban Health Extension Program (UHEP) at the community level since 2009. The program was a pro-poor and cost-effective approach that aimed to enhance utilization of urban health extension program packages and empower community healthcare-seeking behavior. This study was conducted to compare the utilization and healthcare-seeking behaviors of urban health extension program packages and the healthcare-seeking behaviors of model and non-model households.

Methods: A community-based comparative cross-sectional study was conducted among 594 female household heads (297 models and 297 non-models) using a structured face-to-face interview. A bivariate and multivariable logistic regression analysis was employed to identify associated factors. A p-value less than 0.05 and an adjusted odds ratio (AOR) with a 95% confidence interval were carried out to identify significant factors.

Results: Urban health extension program package utilization was 78% among model households and 64.2% among non-model female households. A total of 75.5% model and 65.2% non-model female household heads had appropriate healthcare-seeking behavior. Moreover, having information about UHEPs (AOR = 2.35, 95% CI = 1.08-3.42), frequency of home visits by UHEWs (AOR = 2.12, 95% CI = 1.01-3.13), knowledge about UHEPs (AOR = 3.14, 95% CI = 2.43-4.47), and household graduation status (AOR = 3.052, 95% CI = 2.024-5.13) were significantly associated with urban health extension program package utilization and healthcare-seeking behaviors.

Conclusion: In terms of utilization, the overall urban health extension package favors model female household heads over non-model female household heads. As a result, raising awareness, having frequent home visits, and focusing more on disease prevention and control packages will boost the adoption of urban health extension packages.

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1. Introduction

Globally, urban health is underutilized and neglected, and there are health inequalities, particularly in low- and middle-income countries [1]. By 2050, nearly 60% of Africa's population is expected to live in cities, which are home to 35-40% of the world's children and adolescents [2]. According to UN-Habitat, the proportion of the urban population living in slums in developing countries has decreased from 39.4% in 2000 to 29.7% in 2014 [3]. Since 1997, Ethiopia has been implementing successive health sector development plans and has made notable advancements in expanding access to healthcare services and enhancing health outcomes [4].

The urban health extension program (UHEP) was implemented in Ethiopia, and the deployment of specially trained urban health extension professionals (UHE-Ps) began in 2009 with the goal of improving community utilization of urban health extension packages and healthcare-seeking behavior [5][6]. Urban health extension professionals (UHE-Ps) spend more than 75% of their time in the community educating residents about urban health extension program packages as well as identifying and preparing model households [7]. Model households (HH) are those who complete at least 75% of the model family training out of 60 training hours and implement and use packages at the household level, implying that households have acquired the necessary knowledge, skills, and behavioral changes to help them have better control over their health. Healthcare-seeking behavior (HSB), on the other hand, is the action of persons visiting any health facility for modern treatment rather than traditional medical care [8].

Evidence from Ethiopia revealed that only 59.2% and 72.8% of participants use urban health extension at the household level among model and non-models, respectively [9][10]. Several factors were reported for the poor utilization of urban health extension packages, including sociodemographic and economic factors, household factors such as occupation, household income, frequency of home visits, model household training, and graduation from a model household [11][12][13].

Evidence also showed that literacy, educational status, perceived illness, income, and treatment costs were some of the predictor factors for health-seeking behaviors [14][15].

Moreover, health care policies and programs' planning requires knowledge about healthcare seeking behavior for early diagnosis, effective treatment, and appropriate intervention [16]. Besides, identifying gaps and having regular and up-to-date data on model and non-model households are critical for evidence-based decision-making and baseline data for any stakeholders to take action. As a result, the aim of this research was to compare the utilization of urban health extension packages among model and non-model female household heads in Addis Ababa, Ethiopia, in 2022.

2. Methods

2.1. Study setting, design, and population

The study was carried out in Bole sub-city, Addis Ababa, Ethiopia. Addis Ababa is composed of eleven sub-cities with an estimated population of 5,006,000. Among these, 47.5% were males, and the remaining 52.5% were females [17]. Bole sub-city was chosen because it is one of the largest and most centrally placed sub-cities, and it was meant to represent the entire city. A community-based comparative cross-sectional study design was used to assess the urban health extension program package utilization and healthcare-seeking bahavior among model and non-model household heads.

2.2. Eligibility criteria

The study included female model and non-model household heads over the age of 18, as well as those who had lived in the study area for more than a year. However, the study excluded those female household heads who were seriously ill and unable to communicate.

2.3. Sample size determination and sampling procedure

The sample size was calculated using the two-population proportion formula by applying Epi-Info version 7.2.1 software stat with the following assumptions: 95% confidence interval, 5% margin of error, 80% power, 1:1 model-to-non-model household ratio, design effect of 2, 10% non-response rate, a previous study variable knowledge of 80.7% [11], and urban health extension package utilization proportion of 66.6% [9]. Since studies were conducted only on model households and there is no literature on non-model households, we assumed 50% of the proportions for non-model households.

$$n = \frac{\left(Z_{\alpha/2} + Z_{\beta}\right)^2 X \left(P_1\left(1 - P_1\right) + P_2\left(1 - P_2\right)\right)}{\left(P_1 - P_2\right)^2}$$

Therefore, the final sample size was 594 households (297 model and 297 non-model household heads). The study participant model and non-model female household heads were selected by using a multistage sampling technique. The

study area was divided into 15 districts at the initial stages; four districts were randomly selected by lottery methods.

In the second stage, because there was no kebele structure in Addis Ababa city administration, four ketena (the lowest administrative units in a kebele) were chosen at random, and proportional sample size allocation was done in each ketena. The total number of model and non-model female household heads was then obtained from the woreda health office. A sampling frame was prepared for each model and non-model female household head, and the first households were chosen at random from a list of registrations listed by the names of household heads in each ketena. Using the first household as an index, a simple random sampling technique was used to obtain the required sample size.

2.4. Study variables and definition

The dependent variables in this study were the use of urban health extension program packages and healthcare-seeking behavior. Besides, socio-demographic factors like distance to health facility, medical cost, perceived severity of the disease, disease condition, quality health service, referral linkages, health facility visit, understanding of packages, source of information, communication skills, training, being a model household, home visits/frequency of visits, traditional healer, and holy water were the independent variables.

The utilization of urban health extension packages:it was measured by the use of different components of the packages at the household and health facility levels. Participants who scored 75% were considered to have high utilization (use at least 12 packages from 15 packages), 60-74% moderate (9-11 from 15 packages), and = 60% low (= 9 from 15 packages).

Healthcare-seeking behaviors: were classified as appropriate or inappropriate. Participants who seek and visit healthcare consultation in a health facility were classified as appropriate, whereas those who visit holy water, traditional healers, pharmacies or drug stores, self-treatment (treating one's health without medical supervision or intervention), and stay at home during illness were classified as inappropriate healthcare-seeking behaviors.

2.5. Data collection procedures

A structured questionnaire was created using the Ethiopian demographic health survey questionnaire, the Ministry of Health's urban health extension program implementation guidelines, and previous literature [9][11][17]. The questionnaire was written in English first, and then translated into Amharic working language. Before data collection, the data collection tools were pre-tested with 5% of the total sample size in Yeka sub-city, Addis Ababa, and modifications were made accordingly. Four data collectors and two supervisors participated, and one-day training was given.

2.6. Data management and analysis

All questionnaires were reviewed for completeness and errors before being entered into Epi Info version 7.2.1 and then exported to SPSS version 26 software for further analysis. Bivariable logistic regression analyses were used to identify potential factors related to the use of urban health extension packages and healthcare seeking behaviors. To control

confounding factors and determine the relationship between independent and outcome variables, multivariable logistic regression analysis was carried out. The 95% confidence interval and a p-value less than 0.05 were used to assess the degree of association between dependent and independent variables.

3. Results

3.1. Socio-demographic and economic characteristics of the respondents

A total of 587 participants were successfully interviewed, including 294 model and 293 non-model female household heads, for a response rate of 99%. The average age of the study participants was 36.46 years, with an SD of 8 years. Both model and non-model female household heads had three children on average. The average monthly income of participants' model female household heads was 3671, with a standard deviation (SD) of 1184, while non-model female household heads earned 3524.91, with an SD of 1107 Ethiopian Birr (Table 1).

Table 1. Socio-demographic characteristics of the study participants

No	Variables	Model HHs	Non-model HHs	Total
		No.	(%)	No.
1	Age			
	19-29	68	23	68
	30-40	129	44	132
		41-51	63	21
		51-62	34	12
2	Marital status			
	Single	37	13	41
	Married	208	71	196
	Divorced	29	10	33
	Widowed	20	6	23
3	Educational status			
	Illiterate	57	19	65
	Read and write	41	14	44
		primary school	64	22
		secondary	76	26
		Certificate& above	56	19
4	Occupation			
	Housewife	183	62	173
	Government employs and others	111	38	120
5	Family size			
	0-3	183	62	173
	4-6	111	38	120
6	Monthly Income			
	1550-1900	43	15	47
	1901-5200	251	85	246

3.2. Knowledge status of households towards urban health extension packages

The majority of study participants, 264 (90%) model and 213 (73%) non-model female HH heads, heard about the urban health extension program, and UHE-Ps were the source of information for 227 (77%) model and 82 (28%) non-model HH heads.

Among the study participants, 247 (84%) model and 159 (54%) non-model female HH heads were aware of the components of the urban health extension program package. The most commonly known and reported packages by model female HH respondents were 257 (87%), 247 (84%), latrine and excreta disposal, and 239 (81%), solid and liquid waste disposal, while non-model HHs had 221 (75%), 217 (74%), solid and liquid waste disposal, and 216 (74%), family planning.

On the other hand, the model female HH participants knew and reported the fewest packages: 83 (28%), first aid and emergency measures, 90 (31%), mental health, and 109 (37%), rodent and insect control, while non-model HH participants knew and reported the fewest packages: 62 (21%), first aid and emergency measures, 66 (24%), malaria prevention, and 74 (25%). In general, participants' knowledge status toward UHEPa was assessed using a mean score of 75-100% classified as good knowledge, 60-75% as moderate knowledge, and less than 60% as poor knowledge. According to this, model female HH heads had good knowledge with a mean score of 221 (75%), whereas non-model female HH heads had moderate knowledge with a mean score of 181 (64%).

3.3. Healthcare seeking behaviors of households

The overall healthcare-seeking behaviors of the study participants were 339 (78%), with 184 (79%) model households and 155 (77%) non-model households. Only 139 (76%) model households and 131 (65%) non-model households had appropriate healthcare-seeking behaviors among those who sought health care. In terms of health care consultation location, the health center was the most common location where 189 (65%) model and 94 (47%) non-model households sought health care. Other places visited during illness included a pharmacy or drug store (10%), a private clinic (11%), and homemade treatment (15%) for model households, and a pharmacy (23%), a private clinic (18%), homemade treatment (9%), and a visit to traditional healers (holy water) (4%) for non-model households.

Among the participants, 48 (21%) model households and 46 (23%) non-model households did not seek health care anywhere during the sick period (illness). The main reason for not seeking health care was the distance to the health facility for both model and non-model HHs, 72 (37%), and 68 (32%), respectively. Quality of service (33%), lack of money (19%) for model female HH heads, lack of money (30%) for non-model female HH heads, and symptoms not severe (28%) were the other reasons for not seeking health care. Participants in the study, 254 (86%) model and 189 (65%) non-model HHs, reported that UHEP was important in increasing healthcare-seeking behaviors. In general, 161 (88%) model and 151 (75%) non-model HHs practiced appropriate health care-seeking behavior, while the remaining 23 (13%) model and 50 (25%) non-model HHs practiced inappropriate healthcare-seeking behavior (Table 2).

Table 2. The healthcare-seeking behaviors of model and non-model households

No.	Variables	Model HHs	Non-model HHs	Total
		No.	%	No.
1	Disease Status			
	Yes	232	79	201
		No	62	21
2	Seek healthcare consultation			
	Yes	184	79	55
	No	48	21	46
3	Consultation Place			
	Health center	121	66	101
		Private clinic	40	22
		Self-treatment	18	10
	Homemade treatment	5	3	7
	Traditional healers/Holy water	0		4
4	Healthcare-seeking practices			
	appropriate healthcare-seeking behaviors	161	88	125
	Inappropriate healthcare-seeking behaviors	23	13	30
5	Estimated walking time to HF (Distance to HF)			
	<30 minutes	49	21	42
	≥30 minutes	112	49	83
6	Time for health care seeking during illness			
	Immediately	124	53	83
	No improvements	86	37	90
	Unable to eat or drink	22	10	28
7	Reason for not seeking health care			
	Symptoms not severe	23	12	59
	Lack of money	36	19	65
		Distance to health facility	72	37
	Quality of service	64	33	22
8	Referral linkage			
	Yes	156	67	72
	No	76	33	129
9	Urban health extension program increases healthcare-seeking behaviors			
	Yes	254	86	189
		No	40	14

3.4. Family health package utilization of households at the health facility level

Two hundred eight (71%) model HHs participants and 183 (63%) non-model HHs participants visited health facilities. The most common reasons for both model and non-model household participants visiting health institutions were disease diagnosis and treatment, which accounted for 83 (40%) model and 50 (24%) non-model HHs. On the contrary, the main reasons for not visiting health institutions were the long distance to health facilities for 43 (50%) model and 19 (17%) non-model HH participants (Table 3).

In terms of family health package use, 142 (48%) model and 136 (46%) non-model HHs used various types of family planning methods. The overall delivery rate was 156 (88%), with 74 (91%) model and 82 (85%) non-model HHs participants having their deliveries at the health facility level. In addition, 120 (85%) of the infants in the model HHs and 126 (77%) of the non-model HHs were vaccinated. Based on community perception, the majority of model HHs study participants rated the quality of health services as very good (49.3%) and non-model HHs as good (49.5%) (Table 3).

Table 3. Health service utilization of model and non-model households

No	Variables	Model HHs	Non-model	Total
		No.	%	No.
1	Visit health Institution			
	Yes	208	71	183
		No	86	29
2	Reason for visiting Health institution			
	Immunization	50	24	45
		Family Planning	45	22
		Antenatal care & delivery	30	14
		Diagnosis and treatment	83	40
3	Reason for not visiting the Health Institution			
	Transportation	26	30.2	7
		Lack of knowledge	6	7
		Distance to health facility	43	50
	Poor quality service	11	12.8	18
4	Community perception of quality health service			
	Very good	145	49.3	102
		Good	141	48
	Poor/bad	8	2.7	46
5	Family planning method user			
	Yes	142	48	136
		No	152	52
6	Infant vaccinated			
	Yes	120	85	126
		No	21	21
7	Delivery attended at health Institution			
	Yes	74	91.4	82
		No	7	8.6

3.5. Environmental health package utilization in the household level

Two hundred fifteen (73%) model and 154 (53%) non-model household participants had homes visited by UHE-Ps. In terms of the frequency of households conducted by UHE-Ps, 196 (67%) had at least one visit per month for model households, and 83 (54%) had at least one visit per quarter for non-model households.

Concerning the use of environmental health packages, more than three-fourths of the participants, 254 (86%) model households and 218 (74%) non-model households, had different types of latrine facilities in their home. Only 75 (30%) of the model households and 53 (24%) of the non-model households had a handwashing station near the latrine. More than two-thirds of participants, 247 (84%) model households and 212 (72%) non-model households, had a solid waste disposal

site, with the majority of 166 (67%) model households and 132 (62%) non-model households disposing of solid waste into covered containers. A total of 227 (77%) model and 188 (64%) non-model households' participants have liquid waste disposal drainage systems in their homes (Table 4).

Table 4. Utilization of environmental health packages by model and non-model households

No.	Variables	Model HH	Non-model HH	Total
		No.	%	No.
1	Availability of latrine facility			
	Yes	254	86	218
	No	40	14	75
2	Type of latrine facility			
	Flush latrine	24	9	16
	Ventilated improved Pit Latrine	68	27	69
	Traditional pit latrine	162	64	133
3	Share a latrine facility with other households			
	Yes	46	18	73
		No	208	82
4	How often use the latrine			
	Always	248	98	213
	Sometimes	6	2	5
5	Hand-washing facilities near to latrine			
	Yes	75	30	53
	No	179	70	165
6	Time for washing hands			
	Before eating	0		46
	Both before and after eating	183	62	210
	Before & after eating and after cleaning compounds	111	38	37
7	The solid waste disposal system			
	Yes	247	84	212
		No	47	16
8	Types of solid waste disposal system			
	Disposed to covered container	166	67	132
		Disposed to open container	81	33
		Burning	0	
		Thrown anywhere	0	
9	Liquid waste disposal drainage system			
	Yes	227	77	188
		No	67	23

3.6. Disease prevention and control package utilization in households

UHE-Ps' role in this package was to provide health education and make referral connections. Based on this, 229 (78%) model and 161 (55%) non-model HHs participants received tuberculosis health education. During coughing for more than two weeks, the majority of model HHs (217%) and non-model HHs (132%) visited HF for diagnosis and treatment. According to 194 (66%) model and 157 (54%) non-model HH participants, using an insecticide-treated bed net might help prevent malaria. Among model HH participants, 254 (86%) and 197 (67%) non-model HHs received HIV/ADIS health education, with 155 (53%) model and 85 (29%) non-model HHs receiving HIV testing. Only 56 (19%) model and 45 (15%) non-model HHs had first aid kits in their homes, as did 199 (68%) model and 164 (56%) non-model HHs (Table 5).

In general, the overall urban health extension package utilization was 416 (71%), of which 228 (78%) were model and 188 (64.2%) were non-model female HH heads. On the contrary, based on the study participants responses, the main reasons for not implementing and utilizing UHE-Ps for the model HHs were 33 (50%) that some components are not important and non-model HHs 45 (43%), which I do not know how to use (Table 5).

Table 5. Disease prevention and control packages in model and non-model households

No	Variables	Model HHs	Non-model	Total
		No.	%	No.
1	Health education on tuberculosis			
	Yes	229	7	161
	No	65	22	132
2	What to do during cough for more than two weeks			
	visit HF for diagnosis	217	74	132
	Visit Pharmacy	77	26	114
	Take Home treatment	0		38
	Nothing	0		9
3	Preventing malaria using insecticide a bed net			
	Yes	194	66	157
	No	100	34	136
4	Learn about HIV/ AIDS			
	Yes	254	86	197
	No	40	14	96
5	HIV/ADIS Test			
	Yes	155	53	85
	No	139	47	208
6	Know how to use first aid kits			
	Yes	199	68	164
	No	95	32	129
7	First aid kits in your home			
	Yes	56	19	45
	No	238	81	248
8	Utilization of Packages at home			
	Yes	228	78	188
	No	66	22	105
9	Reasons for not implement and using the urban health extension packages			
	Some packages not important	33	50	28
	Some package do not know how to use	29	44	45
	Cost/need money	4	6	33
10	Community perception on the relationship with UHE-Ps			
	Very good	99	34	80
	Good	160	54	145
	Poor/bad	35	12	68

3.7. Factors associated with urban health extension program package utilization

The bivariate logistic regression analysis revealed that hearing (having information) about UHEPs, income, occupation,

understanding of UHE-Ps, perception of service quality, being model HHs, home visits, and frequency of home visits by urban health extension workers were all significantly related to utilization of urban health extension program packages at a p-value of less than 0.25. However, variables like age, educational status, marital status, religion, and family size had no significant association with UHE-Ps utilization.

In the multivariable logistic regression analysis, only having information about UHEPs, frequency of home visits, understanding the UHE-Ps, and being model graduated HHs were predictors of UHE-Ps utilization at a p-value of less than 0.05.

As a result, participants in the study who were regularly contacted by urban health extension workers had more than twice the odds of utilizing UHE-Ps (AOR = 2.12, 95% CI = 1.01-3.13) than those who were not frequently visited. Model female HH heads who heard about urban health extension programs more than twice utilized the UHEPs compared to their counter peers (AOR = 2.35, 95% CI = 1.08-3.42). Model female HH heads who understood the urban health extension program packages were more than three times more likely to use the UHEPa (AOR = 3.14, 95% CI = 2.43 to 4.47) than those female HH heads who did not understand the packages. Moreover, model female HHs who graduated were nearly three times more likely to use the UHEPa than non-model HHs (AOR = 3.052, 95% CI = 2.024 to 5.113) (Table 6).

Table 6. Factors associated with utilization of urban health extension packages

Variables	Model HHs	Non-model HHs
	UHEPa Utilization	COR (95% CI)
	Yes	No
Heard about urban health extension program		
No	7	23
Yes	218	46
Home visits by urban health extension professionals		
No	52	27
Yes	205	10
Frequency of home visits by urban health extension professionals		
Once per quarter	29	2
At least once per month	163	53
Knowledge of Urban health extension packages (UHEPa) Components		
No	32	15
Yes	222	25
Mothers' occupation		
Government employees and others	97	24
House wife	128	45
Family (HHs) income		
≤1900	25	15
≥1901	226	28
Household graduation status		
No	41	28
Yes	209	16
Community perception on quality of health service		
Poor (bad)	25	8
Good	200	61

Note: *Reference Category * P-value <0.001, **P-value ≤0.05 cut off points for AOR*

4. Discussion

This study attempted to assess and compare the utilization of urban health extension program packages by model and non-model female household heads. The overall knowledge status on UHEPa was moderate among participants, with model female household heads having a higher level of knowledge than non-model female household heads. This disparity could be attributed to the presence of frequent home visits, during which UHE-Ps provided health education among model households.

In the current study, the most frequently mentioned UHE-Ps components by both model and non-model female household heads were immunization, latrine and excreta disposal, and solid waste disposal; on the other hand, the least frequently mentioned packages by both model and non-model female household heads were first aid, mental health, and malaria prevention and control activities. The findings are similar to those of a study conducted in Addis Ababa, Ethiopia [7][11], in which solid waste, immunization, and latrine and excreta disposal were the three most mentioned packages, while first aid, malaria prevention and control, and mental health were the least mentioned. Furthermore, this consistency could be due to similarities in the study setting, socio-demographic characteristics, and a lack of attention.

The findings are also consistent with a systematic review conducted in Ethiopia from 2003 to 2018 on the success and challenges of health extension programs, which revealed that family planning, immunization, solid and liquid waste disposal, and latrine utilization were the most frequently mentioned packages [14]. The current knowledge status of households on urban health extension packages was higher than study findings from Gondar and Hosanna town in Southern Ethiopia where 65.3% and 42% of participants had good knowledge of UHE-Ps [15][16]. This inconsistency could be explained by differences in study settings and socio-demographic characteristics.

The study's findings were also consistent with a study conducted in Hadiya Zone, South Ethiopia, where 68.3% of participants had good knowledge of UHE-Ps [18], but lower than in Addis Ababa[11]. The absence of mode HH training, a low commitment, and the current COVID-19 in AA restrict UHE-Ps frequency home visits to given health education activities could be reasons for this difference. The overall urban health extension program prioritizes the use of model female HH heads over non-model female HH heads. This finding was consistent with a systematic review conducted in Ethiopia from 2003 to 2018, which found that model HH used more health extension packages than non-model HH [19]. This disparity could be explained by the presence of frequent home visits, health education, and demonstrations of various packages at the household level during home visits.

The current study found that 29.6%, 59.5%, and 42% of participants in AA, Gondar Amhara region, and Hossana town, Hadiya Zone, South Ethiopia, use UHE-Ps [3][15][16]. The current study's findings were nearly consistent with a study conducted in Bishoftu, Oromia region, which found that 72.8% of participants used UHE-Ps [20], but lower than a study conducted two years ago in AA, where 86% of participants used UHE-Ps [11]. The absence of model HH training, the restriction of UHE-P home visits, the low commitment, and the lack of supportive supervision and feedback could all be reasons for this inconsistency. Evidence also indicated that one of the challenges to implementing and using HEP was the presence of limited supportive supervision [19][21].

Furthermore, the current study identified that having information, understanding different package components, frequency of home visits, and model household graduation status were predictors of UHEPa utilization.

The current result is supported by the study conducted in AA[7][11], west Gojjam zone, Amhara region[22], Ambo town, Oromia region [23], and the systematic review done in Ethiopia[14], in which understanding of the packages, frequency of home visits, being model graduated HHs, and monthly income were significantly associated with UHEPa utilization. The finding is also consistent with the other study carried out in Gondar, Amhara region, and Sebeta Hawas district, Oromia region, which indicated that understanding packages were significantly associated with urban health extension services and maternal and child health package utilization [10][15][24][25]

In this study, the frequency of home visits was higher in model female HHs than in non-model female HHs. The results in the model female HH heads were consistent with the MOH UHEP implementation guideline [26][27] but lower than the results in Addis Ababa [11] and Hosanna town, Hadiya zone, south Ethiopia[18]. This disparity could be attributed to COVID-19's restriction of UHE-P home visits and the presence of a large disparity in the proportion of UHE-Ps to HHs; one UHE-P is expected to cover 500 HHs [26].

According to the study participants' responses, the main reasons for not using the UHE-Ps were a lack of knowledge about some of the package components, some of the packages being unimportant, and some costing or requiring money. According to a study conducted in the AA and Akaki districts of the Oromia region, the main reasons for not using packages were some components that were not important, were not prepared well, and required money [28][29].

Strengths and limitations of the study

The key strength of this study was that it had a relatively larger sample size. The fact that the study used a cross-sectional study design with only one point in time, observation and interview recall bias were possible, and it was difficult to identify a cause-and-effect relationship.

5. Conclusion

Based on the findings of this study, it can be concluded that household status, both model and non-model households, had an effect on UHE-Ps utilization. Understanding packages, frequent home visits, income, and being a model household graduate were significantly associated with UHE-Ps utilization. Therefore, providing model household training, frequent home visits, awareness creation on different components of packages, and giving more attention to disease prevention and control packages are essential to increasing UHE-Ps utilization of HHs.

Statements and Declarations

Data availability

The raw data used for this study can be made available with a reasonable request from the corresponding authors.

Competing interests

The authors declare that there is no competing interest.

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