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ASSESSMENT OF THE EFFECT OF HOUSE HOLD EXTENTION PACKAGE ON PREVENTION OF TRACOMA IN KOLA TEMBIEN DISTRICT

BY

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A thesis submitted to
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ASSESSMENT OF EFFECT OF HOUSEHOLD HEALTH EXTENSION PACKAGE ON PREVENSION OF TRACHOMA IN KOLA TEMBIEN, TIGRAY REGION, NORTH ETHIOPIA

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DECLARATION

I THE UNDERSIGNED, SENIOR MPH STUDENT DECLARE THAT THIS THESIS IS MY ORIGINAL WORK IN PARTIAL FULFILLMENT FOR THE REQUIREMENTS FOR THE DEGREE OF MASTER OF PUBLIC HEALTH. ALL THE SOURCES OF THE MATERIALS USED FOR THIS THESIS AND ALL PEOPLE AND INSTITUTIONS WHO GAVE SUPPORT FOR THIS WORK ARE FULLY ACKNOWLEDGED.

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DEDICATION

This dissertation paper is dedicated to my beloved wife Sr. Sara Tosheme, my kids Filmon & Kaleb Yohannes.

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ACRONYMS

CBHC	Community based health care
CHA	Community health agent
CHW	Community health workers
CI	Confidence interval
FDRE	Federal Democratic Republic of Ethiopia
FGD	Focus group discussion
HEP	Health extension package
HSDP	Health sector development program
IEC	Information education communication
MOH	Ministry of Health
NGO	Non governmental organization
NHEP	Non health extension package
OR	Odds ratio
PHC	Primary health care unit
TF	Follicular trachoma
TI	Intense inflammation
WHO	World Health Organization

ABSTRACT

Background: Tigray is one of the first regions in Ethiopia that implementing health extension package program at household level. In 2002/2003 EC this program strengthened and expanded in all woredas of the Region. Kola Tembien woreda, which is our study area, has 4000 households which are graduated and involved in the program for the last 3 years.

Objective: To assess the impact of having HEP on active trachoma prevalence, and identify challenges, achievements and factors for sustainable implementation of the program.

Methodology: This is a quasi-experimental study conducted in Kola Tembien District. Using systematic random sampling 310 households from intervention and 621 households from non-intervention households were interviewed in 31 randomly selected villages. Ophthalmic nurses use a simplified clinical grading to assess stages of trachoma while environmental technicians assessed risk factors of trachoma. Qualitative data were also collected through FGDs to identify community perception on household HEP program and the relation within all stakeholders, major achievements and challenges, and mechanisms used to sustain the program.

Results: Prevalence of active trachoma in under ten years in household with HEP is 17% and in households without HEP is 35.5%. Prevalence of active trachoma is lower among households with HEP [OR: 0.37 95% CI, 0.22-0.63]; who have latrine and used properly [OR:0.62 95%CI, 0.38-0.95]. who washed face frequently [OR:0.10 95%CI, 0.05-0.18], who used soap to wash face [OR:0.37 95%CI, 0.15-0.94]; and clean face [OR:0.40 95%CI, 0.29-0.57] but higher in those who dispose waste to disposal pit [OR:1.43 95%CI, 1.04-1.95] and distance to fetch water less than one kilometers [OR:1.47 95%CI, 1.00-2.15]. The FGDs suggested that households who implement the HEP program prevented eye diseases and eye irritation and they internalize importance of the HEP program.

Conclusion: Health extension package has significant effect in prevention of active trachoma and has to be expanded to households who have not implemented the HEP program. Further sensitization and training of woreda and kebele councils, health workers and CHW and make understanding with stakeholders like Agriculture, Education, Water development and Cooperatives is necessary to enhance expansion of the program.

Key words: Health extension package, Active trachoma, quasi-experimental stud

1. INTRODUCTION

The Alma-Ata Conference in 1978 declared primary health care and community based health care as the most practical approach in achieving a health status consistent with socially and economically productive life. The principles of PHC are equity, community participation, focus on prevention & health promotion, appropriate technology, inter sectoral collaboration, and decentralization. The commitment of many nations never translated into real effect and the concept of PHC/CBHC has hardly achieved its goal. In Ethiopia there is wide spread poverty, low educational levels, inadequate access to clean water and sanitation facilities, poor nutritional status, a high fertility rate, together with low levels of access to health services contributing to the high burden of ill health in the country. Infectious and communicable diseases account for about 60 – 80% of the health problem in the country. Both the quality and coverage of the health service are very low. Provision of safe water reaches only 24.7% of the rural population, and 83.5% of those living in urban areas. Around 7.2% of rural and 74% of urban populations have access to sanitation services. The quality of health services is inadequate due to poorly maintained infrastructure and equipment, shortage of trained manpower and sufficient supply of drugs and other necessary supplies [1]. Community health workers' successful contribution since the inception of the initiative have made them to be the key player in managing the activities of the HEP, even after HEP is put into formal government structure, once endorsed in the Health Sector Development Program (HSDP) II of the Federal Democratic Republic of Ethiopia Ministry of Health (FDRE MOH) [1]. The health sector had been challenged to address such basic health services like routine immunization even in the most accessible communities with out social mobilization. It is convinced that there is a

remarkable gap in the health seeking behaviour of individuals, households and the community at large. In dealing with this gap in the health extension package is designed with the aim of capitalization on active participation of communities in their health affairs; to give emphasis to action based health message deliveries to bring about positive change in health behaviour of individuals and communities and to initiate a practical implementation of some of the concepts and components of PHC/CBHC [3, 4].

In many developing countries, health care initiations are inadequate and not easily accessible however, if there is an implementation of basic health services at household level by coordinating the community health workers and health care providers, the limited resources available in institutions can be fully utilized to help those most in need. Another approach is to encourage the active involvement of individuals and their family, the community and health care providers with the aim of helping people to understand how to look after their own health. Simple and scientifically sound technology, suitably adapted to local conditions, is also needed [3].

The role of health workers, HEP workers and CHW who are involved in the health extension package program were to provide the household with the opportunity to improve and/or acquire knowledge to boost their health seeking behavior and skills to practice the basic preventive and promotive health practices to improve their health status. Creating this opportunity through their full participation; increases adoption of healthy practices as per the set standards and guidelines at the household level and their compliance to the different health service provision. Among all activities, we tried to see the impact of hygiene and environmental sanitation on prevalence of active trachoma compared to households without HEP.

For households without HEP the above activities were not given except the traditional way of health education method. About 4000 households fulfilled the 16 components of the health extension package.

HHEP is conceptualized considering that a good deal of work on health promotion can be done at home by parents who are informed on key health issues and supported with health promotive techniques and skills, to take care of the health of their family [4]. However, although these and other activities have been undertaking to improve the health status of the people, their condition was not known and even there was no attempt to assess the condition systematically. Many strategies have been designed to overcome the health problem of the community. PHC was one of the major designs. However due to the low political concern and community involvement, it could not achieve the desired outcomes. The HEP strategy is designed in a way that brings a synergetic effect with the prevailing PHC program.

The fundamental nature of HEP is creating opportunities to enable households to exercise a health practice and living healthy through comprehensive, interrelated, economically and technically feasible health interventions. With their full participation using their own resources, training, and follow up by community health workers, HEP workers and health staffs of respected kebeles, and full support of kebele and wereda councils. Integration with NGO's, other sectors such as schools, agriculture, and water development projects. with overall support and periodic evaluation by District health-office team are important.

Security of health of a community is achieved when individuals or households have the capacity to identify, prevent and manage significant risks to their health, supported by optimal health service inputs. Health and health related activities are inherently linked and

influencing each other. A single health intervention will never bring an impact that it can potentially achieve, unless complemented with other health interventions in an integrated way. To my knowledge, this is the first study done in assessing the impact of having HEP. Therefore, this study will have a significant input in identifying challenges and facilitators of the outcomes of the household health extension package program, and also help as a baseline for further similar studies

2. RATIONALE OF THE STUDY

1. Health extension package program is a major component of the countries health program, which needs close follow up

2. Health extension package was not evaluated since its implementation

3. This study can serve as a base line for future similar studies

3. LITERATURE REVIEW

The socialist government of Ethiopia was tried to introduce rapid expansion of PHC, but its rapid expansion was hampered due to - protracted war, centralized, urban-based, bureaucratic approach and attitudes that failed to participate communities. Currently achievement and opportunities of PHC are characterized by, economic progress, democratization, decentralization and private initiatives [2]

Health Extension Package (HEP) is a new initiative included in the HSDP II. It is an innovative community-based health care delivery system aimed at creating healthy environment as well as healthful living. The main objective of HEP is to improve access and equity through community/kebele based health services with strong focus on sustained preventive health actions and increased health awareness [3].

HEP initiative at this level is its pioneering role towards the implementation of the concepts and principles of PHC/CBHC. It is not only its pioneering role to access the households to the best of its effect, but also it is the most feasible approach to bring the household to discuss and contribute towards its health matters. This has a comparative advantage in using a shortcut to address the basic health needs of the household with its full participation, and it's being easy to integrated with other household based development schemes like the agricultural extension package [4]

The HHEP designed with the aim of capitalization on active participation of communities in their health endeavors; to give emphasis to action based health message deliveries to

bring about positive change in health behavior of individuals and communities and to initiate a practical implementation of some of the concepts and components of PHC [4].

HHEP is conceptualized considering that a good deal of work on health promotion can be done at home by parents who are informed on key health issues and supported with health promotive techniques and skills, to take care of the health of their family.

Studies showed in Bolivia that provision of community based, integrated health service can significantly improve child survival in poor countries [5]. Another study in India showed home based neonatal care, including management of sepsis is acceptable, feasible, and reduced neonatal and infant mortality by 50% among malnourished, illiterate, rural study population. [6]

In a report that come out in worldwide about 84 million peoples have active trachoma and 7.6 million people have active trachomatous trichiasis. [7] Trachoma is highly prevalent and affecting all age group. The overall proportion of people with active trachoma in 2004 was 39% had one or more signs. follicles (TF), intense inflammation (TI and /or TF/TI)]. Active trachoma was prevalent (60.5%) in children under 10 years of age but it was also common across all age groups (range 2 month to 85 years) [8]. The distribution of trachoma corresponds with that of poverty in much of Africa and Asia. Conditions that facilitate the transmission of chlamyda trachomatis such as household crowding, poor access to and use of water by women and children in Africa living in rural communities and dry areas are common [9]. The greatest individual level risk factors for active trachoma appears to be having an active disease at the community level, access to water and sanitation, especially availability of human feces, determine the risk of endemic trachoma [10] Studies have shown that latrine and improved access to water are associated with a

lower prevalence of active trachoma. There is likely to be long-term beneficial effect of a combination of improved water supplies and provision of latrines, facial hygiene promotion through established infrastructure and control of eye seeking flies [11]. Latrines appear to be associated with a lower prevalence of active trachoma and there are evidences that flies are vectors of the trachoma [11].

The type of water used for washing face seemed more important than the distance from its source. The use of pond water, though not significantly different had a high risk for trachomatous trichiasis compared to pipe and river sources [12]. Improving educational status and regular face washing of the community may decrease the likelihood that people will be at risk of developing trachomatous trichiasis and its blinding complication [12]. Children whose faces were repeatedly washed more than daily had significantly lower risk of contracting active trachoma than those for whom face washing would be suitable tool for intervention deliverable through primary health care and education system [13].

A study showed that the prevalence of active trachoma was found to be 50% in highland areas, (2501 -3000 mts), 69.9% in medium altitude areas (2001 – 2500 mts) and 73.8% in lowland areas (1600 – 2000 mts) [14]. Distance from water source and presence of window in cooking place, were found to be positively associated with active trachoma [14].

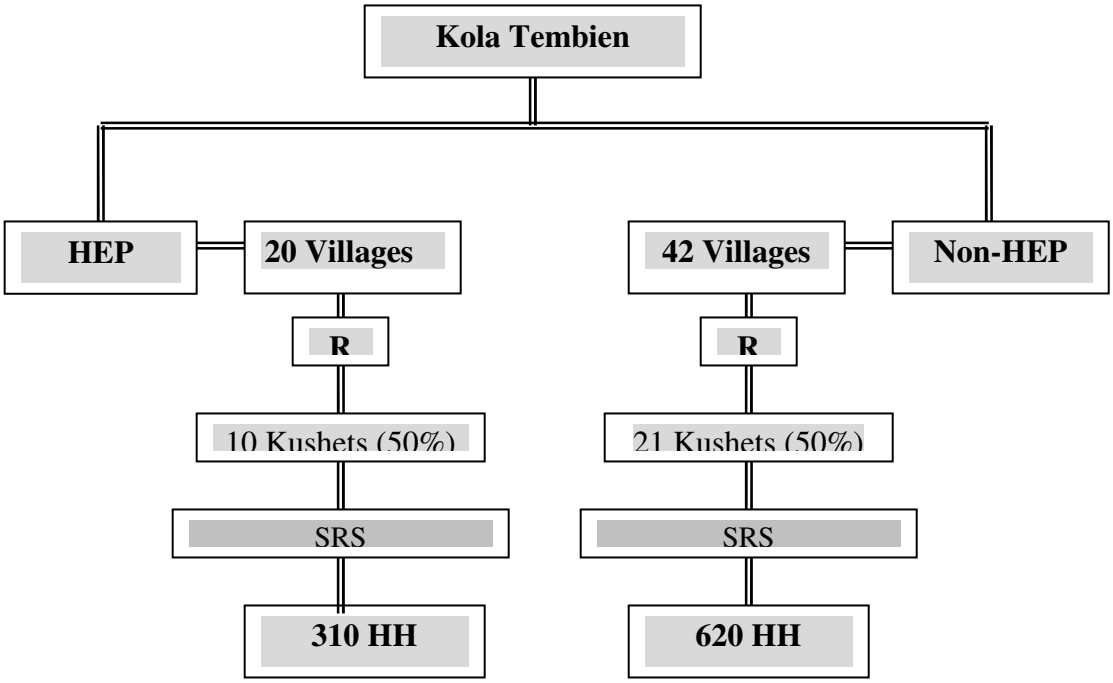
Measures to improve hygiene, such as promoting facial cleanliness and better disposal of human and animal waste will be culture and setting specific. They are critical to reducing the transmission of chlamyda infections. It is acknowledged that these changes in behavior are difficult to achieve and sustain and must therefore be promoted with full community participation and recommended that activities to promote facial cleanliness and improve

environmental hygiene be considered an essential component of the SAFE strategy for trachoma control [17].

Trachoma is concentrat®d in hot, dusty, dry parts of the world, and is prevalent in areas of widespread pov$rty. It is often endemic in areas that are rural, without good water supplies, which makes washing more difficult - and without basic sanitation. Asgit is a communicable infection, it often clusters within the household or at neighborhood level. Demographically, active trachoma is most prevalent in children, although the scarring does not usually become visible until the early 20s. For those who haveösuffered since.

(SOME TEXT MISSING)

Fig1. Sampling frame



5.7 Data collection

5.7.1 Quantitative study

Standardized and structured questionnaire were developed for use in interview. The questionnaire was prepared originally in English and then translated to Tigrigna, which was used in the field and back translated to English.

Data was collected from January 03 – 17, 2006 by six trained health workers, including ophthalmic nurses and sanitarians, and two health officers' supervisors. Using the world health organization (WHO) simplified clinical grading [17] three ophthalmic nurses were recruited and trained for one day by an ophthalmologist. The agreement on diagnosis between the ophthalmologist and the ophthalmic nurses were scored above 85%. The agreement for diagnosis was based on simplified clinical grading of trachoma using torchlight and magnifying loup (2.5 X). The ophthalmic nurses examined both eyes. Three environmental health workers were also trained for one day on methods of assessment regarding environmental sanitation, personal hygiene practices and access to water supply. The questionnaire was pre tested in Begashika with characteristics similar to the study area but not in the study villages. The actual data collection was conducted from January 07 to 17, 2006. The intervention villages are Nemare, Selewne, Guya, Atsaleko, Amberswa, Agafari, Aytako, Edigib, Abozench, and Workamba. Control villages are Teamina, Saglla, Adi shihat, Maigundi, Adialemot, Bawke, Mariamke, Newi, Merere, Gurero, Kakimiela, Chemrero, Wetlako, Akafay, Tahtayseken, Satia, Gelebeda, Santa, Tentsefa and Adiguro

5.7.2 Qualitative study

Qualitative assessment was done to explore and understand the challenges and achievements of household health extension package. Issues addressed included: how HEP workers perceived household health extension package, attitude of the health worker towards HEP program, community perception of the HEP, major achievements of the HEP, mechanisms designed for sustainability of the HEP and major challenges of the program. Focus group discussion was held from January 18 to 27, 2006 the four groups were, one of CHA, the second with HEP workers the last two groups from HEP implementing households. The Principal Investigator conducted the FGDs with the two supervisors involved as note takers and recruiters of the focus group discussants. We also used video recorder just not to miss important ideas and see their reaction. The discussion held in Abi-Adi was in the CHAs, and HEP workers; and for members of the HEP, it was held at their nearest vicinity of sub Districts in Guya and Gurero. The sizes of the groups were 10 – 12 individuals of both sexes in order to assure that all individuals participate. Each participant had enough time to speak, and forward ideas. The average time taken was 60 to 90 minutes. It also helped to reduce dominance within groups and the tendency of side conversation between respondents.

5.7.3 Data quality assurance

Questionnaires were checked for completeness daily by immediate supervisors. After checking for consistency and completeness, the supervisors submitted the filled questionnaire to the Principal Investigator who also rechecked to maintain the quality of data. The Principal Investigator supervised five households from each village surveyed to confirm that the households are visited and screened for trachoma properly.

5.7.4 Operational definitions

- Sustainability: - is the capacity to maintain service coverage at a level that will provide continuing control of a health problem [32].
- Active trachoma: - clinically diagnosed by signs of follicles and papillae on the conjuctival epithelium of the upper lid [33].
- Follicular Trachoma:- the presence of 5 or more follicles at least 0.5 mm found in the center of upper tarsal conjunctiva.
- Intense inflammatory trachoma: - pronounced inflammatory thickening of the tarsal conjunctiva that obscure more than one half of the normal deep tarsal vessels
- SAFE: - which advocates **S**urgery for advanced trachoma, **A**ntibiotics, **F**acial cleanliness, and **E**nvironmental improvements.
- Clean face: - faces have no discharge from the eyes and nose
- Regular face washing: - washing of face at least once a day.
- Irregular face washing: - individual practiced it only when water is available.

5.8 Data analysis

Data was analyzed using EPI Info version 6, and SPSS version 10.0 statistical packages. Age, sex, education and other socio demographic variables were analyzed. Mean, median and mode were calculated. X^2 test was used for categorical data (socio demographic characteristics, environmental factors, access to water and personal hygiene) Odds ratio, 95% Confidence interval and binary logistic regression were used to see the differences between households with and without HEP.

The qualitative data was transcribed manually from video tape records and notes taken during discussion. Results analyzed manually were written by summarizing the idea forwarded by the focus group discussants.

6. ETHICAL CONSIDERATION

Ethical clearance was obtained from the Department of Community Health and Addis Ababa University Ethical Committee. Permission was also obtained from the Regional Health Bureau and the concerned bodies of the District. Prior to interview and screening for trachoma data collectors requested for the respondents' consent after informing them about the confidentiality of the information they provided and that their names or addresses would not be recorded, with answers being anonymous. Participation in the survey was voluntary and they could choose not to participate. However, they were told that their involvement would be important to their health and health of their community. Following this, all targeted participated in the survey.

Respondents with clinical signs of active trachoma were treated with tetracycline eye ointment and those with advanced disease were registered and transferred to Abi-Adi Hospital for surgical management.

7. RESULTS

Socio demographic characteristics

There was a difference between the intervention and control groups in mean monthly income 210.63 birr in households with HEP and 213.31 birr in non-HEP households. On average the study area households with HEP were found 1886.5 and 1885.22 meters above sea level for non- HEP. Main source of income (occupation) of both groups was farming accounting for about 98%. Mean number of rooms were 3 and 2 in households with HEP and non-HEP respectively. The number of bedrooms were 4 in HEP households, where as they were 3 in households without HEP. Household that own functional radio were 23.9% in HEP and 16.4% in non-HEP (Table 1).

Table1. Comparison of socio demographic characteristics between those with HEP and those without HEP, Kola Tembien, Tigray, January 2006 (n=931 households)

Characteristics	HEP n=310	NHEP n=621	Chi square	P-value
Household head occupation				
Farmer	304(98.1)	607(97.7)	0.10	0.752
Other	6(1.9)	14(2.3)		
Household head education				
No schooling	246(79.4)	492(79.2)	0.00	0.964
Had schooling	64(20.6)	129(20.8)		
House wife education	n=251	n=444		
No schooling	238(94.8)	419(94.4)	0.06	0.802
Had schooling	13(5.2)	25(5.6)		
Household having radio				
Yes	74(23.9)	102(16.4)	7.47	0.006
No	236(76.1)	519(83.6)		
Under 10 year				
≤ Two	168(66.9)	303(67.3)	0.32	0.571
Above 2	83(33.1)	136(32.7)		
Number of bedroom				
One	127(41.0)	355(57.2)	21.71	0.000
Above 1	183(59.0)	266(42.8)		
Number of beds/places				
≤ Two	83(27.7)	324(52.2)	50.03	0.000
Above 2	224(72.3)	287(47.8)		
Average monthly income				
≤ 200	205(66.1)	363(58.5)	5.11	0.023
Above 200	105(33.9)	258(41.5)		

Information on socio demographic characteristics known to be associated with trachoma was collected from both groups. There was no statistically significant difference between the two groups when we looked at occupation and education of head of households, housewife education and number of under-ten year children. Only having functional radio and average monthly income less than 200 birr were higher in households with HEP, and the differences were statistically significant [X^2 =7.47, P< 0.006 and X^2 = 5.11, P< 0.023],

respectively. Number of bedroom one and number of beds/places less than two were fewer in households with HEP than in households without HEP [X^2 =21.71, P<0.000, and X^2 =50.03, P<0.000] respectively.

Environmental conditions

Almost all of the households with HEP 297 (95.8%) and only 64 (10.3%) of households without HEP had latrines. The latrines were privately owned pit latrines and out of these; 39(12.6%) belonging to households with HEP and nine (1.4%) to households without HEP had collapsed. At the time of the study, 190/258 (73.6%) households with HEP and 27/55 (49.1%) households without HEP, had latrines that were clean, with 8.9% and 27.3% of the latrines had more than 5 flies and 14.0% and 10.9% had not been used respectively of house holds with and without HEP program. Reasons given for not having latrine in households with HEP were 85% did not have time and money, and the rest 15% lacked knowledge. Of those households without HEP 20.5% said they did not have time and money, 70.3% lacked knowledge, 5.1% had no appropriate place and 2.5% did not think latrine were useful. Fifty-four percent of households with HEP and 69% of those without HEP did not use proper waste disposal systems and almost all of the households disposed near the houses.

Eighty-eight percent of households with HEP had cooking rooms (kitchen) outside their living rooms and 75.5% of the cooking rooms had smoke outlets (chimneys) while seventy-three percent households without HEP ha d cooking rooms (kitchen) outside their living rooms and 21.9% of the cooking rooms had smoke outlets (chimneys). Biomass energy sources (fire wood, animal dung and crop remnants) were used in 100% of the households with and without HEP (Table 2).

Table2. Comparison of practices with environmental factors between those with HEP and those without HEP, Kola Tembien, Tigray, January 2006 (n=931 households)

Characteristics	HEP n=310	NHEP n=921	Chi squares	P-value
Households used latrine				
Yes	258(83.2)	55(8.9)	511.9	0.001
No	52(16.8)	566(91.1)		
Latrine cleanliness				
Clean	190(73.6)	27(49.1)	12.81	0.000
Not clean	68(26.4)	28(50.9)		
Number of flies				
≤ 5 flies	235(91.1)	40(72.7)	14.28	0.000
Above 5 flies	23(8.9)	15(27.3)		
Location of cooking room				
Outside living room	274(88.4)	448(72.1)	31.31	0.000
Inside living room	36(11.6)	173(27.9)		
Kitchen				
With chimney	234(75.5)	133(21.4)	252.84	0.000
Without chimney	76(24.5)	488(78.6)		
Waste disposing				
Disposal pit	135(43.5)	171(27.5)	25.15	0.000
Open field	175(56.5)	450(72.5)		
Place animals shield				
Not separated	104(36.2)	237(53.1)	20.02	0.000
Separated	183(63.8)	209(46.9)		
House cleaning				
Not daily	22(7.1)	142(22.9)	35.39	0.000
Daily	288(92.9)	479(77.1)		

All of the above practices had statistically significant differences between households with and without HEP.

Access to water and personal hygiene

Protected wells and springs were safe water sources for 83.5% and 50.3% of households with HEP and households without HEP respectively. The estimated one way distance from water points to residence was 1.6 km and 2 km (median 1 kmt and 2 km) from households with HEP and households without HEP, respectively. The time taken in fetching water by households was 36.1% less than 30 minutes, 34.8% half to an hour and 25.8% one to two hours in households with HEP, and 27.7% less than 30 minutes, 39.3% half to an hour and 30.4% one to two hours in households without HEP. The estimated volume of water consumption per day for household with HEP: 61.6% used 20 to 39 liters, 23.9% used 40 to 60 liters and 61.2% used 20 to 39 liters, 26.2% used 40 to 60 liters per capita per a day respectively had used households with HEP and households without HEP. About 59% of household adults both with and without HEP program and 32% and 12% of their children usually bath their body in rivers/ponds and the rest adults and children usually bath their body in their home using bucket and other materials. Majority (83.5% of households with HEP and 82.6% of households without HEP) reported washing their face on daily basis, and 79.1% households with HEP and 73.5% households without HEP were found to have clean faces on physical examination. Close to 11.0 % of respondent from HEP and 3% of respondents from NHEP reported frequent use of soap for face washing (Table3).

Table3. Comparison of personal hygiene and water use between those with HEP and those without HEP, Kola Tembien, Tigray, January 2006 (n=931 households)

Characteristics	HEP n=310	NHEP n=621	Chi squares	P-value
Source of water				
Safe	259(83.5)	290(54.3)	76.88	0.000
Un safe	51(16.5)	284(45.7)		
Distance from water source				
≤ one km	170(54.8)	290(46.7)	5.48	0.019
Above 1 km	140(45.2)	331(53.3)		
Time to fetch water				
≤ one hour	220(71.0)	416(67.0)	1.51	0.219
> 1 hour	90(29.0)	205(23.0)		
Water consumption per a day				
≤ 40 liters	217(70.0)	421(67.8)	0.47	0.494
> 40 liters	93(30.0)	200(32.2)		
Frequency of water fetched				
≤ Two times	269(86.8)	561(90.3)	2.71	0.099
Above 2 times	41(13.2)	60(9.7)		
Household used soap to wash body				
Yes	135(43.5)	278(44.8)	0.12	0.724
No	175(56.5)	343(55.2)		
Household used soap to wash face				
Yes	107(34.5)	21(3.4)	168.85	0.000
No	203(65.5)	600(96.6)		

Screening for trachoma

Nine hundred thirty one households (310 with HEP and 621 without HEP) were selected for screening for trachoma. Clinical examination of both eyes (screening for trachoma) was performed for 1024 under ten years of age, 323 (31.5%) from households with health extension package program and the rest from non-HEP program.

Of the total children examined, 509 (49.7%) were females, with 162(50.2%) being from households with HEP and 347(49.5%) from non-HEP. Pre-school children account 215(66.6%) for households with HEP and 528(75.3%) for non-HEP.

Nine-hundred eleven (97.9%) households of intervention and control groups [304 (98.1%) households with HEP and the rest 607(97.7%) households without HEP] depend on farming for livelihood. Thirty five percent and 39.1% of households with health extension package and households without health extension package programs respectively were economically dependent.

The mean and median age of respondents were 23.2 and 17 for households with HEP and 22.2 and 17 for households without HEP. There were 55 (17.0%) and 249 (35.5%) children from households with HEP and households without HEP with one or more clinical signs of trachoma respectively. Children with trachomatous foliculitis (TF), trachomatous inflammation (TI) and TF/TI respectively represents 34 (10.5%), 12(3.7%) and 9 (2.8%) for households with HEP and 220 (23.5%), 39 (5.6%) and 45(6.4%) for households without HEP.

The prevalence of active trachoma in children aged under 10 years was 17.0% and 35.5% in households with HEP and households without HEP respectively.

Active trachoma in under 10 was more prevalent in under seven years children in households with HEP and illiterates in households without HEP had 19.5% and 40.4% respectively. (Tables 4, 5)

Table4. Comparison on prevalence of active trachoma in under and above ten years between those with HEP and those without HEP, Kola Tembien, Tigray, January 2006 (n=931 households)

Diagnosis		HEP Under 10 yrs n=323 Above 10 yrs n=594	NHEP Under 10 yrs n=701 Above 10 yrs n=1093
TF			
	Under ten years	34(10.5)	165(23.5)
	Above ten years	66(11.1)	220(20.1)
	Total	100(10.9)	387(21.5)
TI			
	Under ten years	12(3.7)	39(5.6)
	Above ten years	55(9.3)	130(11.9)
	Total	67(7.3)	169(9.4)
TF & TI			
	Under ten years	9(2.8)	45(6.4)
	Above ten years	13(2.2)	75(6.9)
	Total	22(2.4)	120(6.7)
TF &/or TI (total active trachoma)			
	Under ten years	55(17.0)	249(35.5)
	Above ten years	134(22.6)	425(38.9)
	Total	189(20.6)	674(37.6)

The dependent variable is active trachoma and the independent variables included in the binary logistic regression analysis under ten years of age were grouped into household with HEP and non-HEP. Sex, education, availability of latrine, methods of waste disposal, location of cooking place, type of kitchen, animal shield, house cleaning, source of water, distance to fetch water, water consumption, frequency of water fetched, face washing frequency, use of soap to wash face, and observed face clean were independent variables. After adjusting for confounders we found that there is statistical significance in under ten years of age grouped into household with HEP and non-HEP, availability of latrine, methods of waste disposal, distance to fetch water, face washing frequency, use of soap to wash face, and observed face clean.

On bivariate analysis active trachoma in households with HEP was significantly related with clean face (OR: 0.42; 95% CI 0.30 – 0.59). Frequent face washing daily (OR: 0.26% CI 0.18-0.38). Frequent use of soap for face washing (OR: 0.36; 95% CI 0.26-o.51). Water consumption less than 40 liters per a day (OR: 0.37; 95% CI 0.27-0.52). Safe water sources (OR: 0.61; 95% CI 0.46-0.82). Distance to fetch water above one kilometer (OR: 2.54; 95% CI 21.90-3.39). Household who have latrine and used properly (OR: 0.48; 95% CI 0.32 – 0.72).Waste disposal pit (OR: 1.49; 95% CI 1.12-1.98). Kitchen without chimney (OR: 0.89; 95% CI 0.64-1.22), location of kitchen in side living room (OR: 0.95; 95% CI 0.69-1.32) and animal shield not separated (OR: 0.85; 95% 0.63-1.14), were not significantly related with the occurrence of active trachoma.

After adjusting for all factors (multivariate logistic regression analysis); the prevalence of active trachoma in households with HEP in under ten was lowered by 63%. Household who have latrine and used properly, use of soap to wash face, face washing daily and cline face prevalence of active significantly lower and higher households who disposed domestic wastes to disposal pit and distance to fetch water less than one kilometer. (Tables 5)

Table5. Environmental factors, personal hygiene & access to water supply by trachoma prevalence in HH with HEP and without HEP, Kola Tembien, Tigray, January 2006 (n= 1024)

Variables	Total number of Under ten years n=1024	Children with active trachoma n=304	OR (95% CI)	
			Crude	**Adjusted**
Age groups in < 10 years			0.37	0.37
HEP	323(31.5)	55(17.0)	(0.27-0.52)*	(0.22-0.63)*
NHEP	701(68.5)	249(35.5)	1.00	1.00
Sex			1.08	1.02
Female	509(49.7)	155(30.5)	(0.83-1.42)	(0.74-1.43)
Male	515(56.3)	149(28.9)	1.00	1.00
Education				
1 – 7 years	743(72.6)	223(30.0)	1.00	1.00
Grade 1 - 4	159(14.6)	40(25.2)	1.03(0.69-1.55)	1.32(0.77-2.24)
Illiterate	131(12.8)	41(31.3)	0.90(0.59-1.38)	0.74(0.44-1.26)
Water source			0.61	0.72
Safe water	610(59.6)	144(23.6)	(0.46-0.82)*	(0.50-1.03)
Unsafe water	414(40.4)	160(38.6)	1.00	1.00
Distance to fetch water			2.54	1.47
≤ One kmt	552(59.6)	206(37.3)	(1.90-3.39)*	(1.00-2.15)*
Above 1 km	472(46.1)	98(20.8)	1.00	1.00
Face washing frequency			0.26	0.10
Daily	928(90.6)	239(25.8)	(0.18-0.38)*	(0.05-0.18)*
Not daily	96(9.4)	65(67.7)	1.00	1.00
Soap used to wash face			0.36	0.37
Frequently used	35(3.4)	12(34.3)	(0.26-0.51)*	(0.15-0.94)*
Not used	989(96.6)	292(29.5)	1.00	1.00
Observed face clean			0.42	0.40
Clean	628(61.3)	119(18.9)	(0.30-0.59)*	(0.29-0.57)*
Not clean	396(38.7)	185(46.7)	1.00	1.00
Water consumption			0.37	0.97
≤ 40 lts	640(62.5)	178(27.8)	(0.27-0.52)*	(0.65-1.45)
Above 40 lts	384(37.5)	126(32.8)	1.00	1.00
Availability of latrine			0.48	0.62
Yes	323(31.5)	60(18.6)	(0.32-0.72)*	(0.38-0.95)*
No	701(68.5)	244(34.8)	!.00	1.00
Waste disposal			1.49	1.43
Disposal pit	370(36.1)	123(33.2)	(1.12-1.98)*	(1.04-1.95)*
Open field	654(63.9)	181(27.7)	1.00	1.00
Location of kitchen			0.95	0.77
Inside living room	229(22.4)	72(31.4)	(0.69-1.32)	(0.51-1.17)
Outside living room	795(77.6)	232(29.2)	1.00	1.00
Kitchen had			0.89	1.20
No chimney	645(63.0)	206(31.9)	(0.64-1.22)	(0.80-1.80)
Chimney	379(27.0)	98(25.9)	1.00	1.00
Animals shield (n=866)			0.85	0.80
Not separated	409(47.2)	135(33.0)	(0.63-1.14)	(0.57-1.14)
Separated	457(52.8)	124(27.0)	1.00	1.00

Summary results of focus group discussion

1.1 Perception of communities towards health extension package program

When we asked about perception of HEP program, the most common responses were.

"This program should have been started earlier" (a 45-year old, female member of a household with HEP)

Most discussants expected that, the HEP program would not be implemented and it will be time consuming. However, they had realized that, its implementation appropriate at household level and best for group formation to discuss health issues of the village. In addition, they appreciated efforts of health workers and community health agents for the repeated follow up, training and technical support.

"There was no latrine in our village. After we constructed latrines its appearance changed having a number of "Hidmo" and we are now being asked by a number of people who crosses our village to show our residences and share experiences" (a 40-year old, male member of a household with HEP)

Majority of the discussant have been approached by many people to share their experiences and performance. In addition, people from unselected village were worried of being left out.

Most discussants were not satisfied with the traditional health education practice and its outcome in changing the health status of the community, but know "*The sun has risen for us*"

1.2 Relationship with health workers, community health agents and leaders and each other.

Majority of discussants who came from HEP program areas said; they had good relation with community health agents and health workers. They were planning together and

assisting/guiding in practical activities. Recently frequency of follow up by health workers decreased and nearly stopped. This lead to loss of group integrity and has resulted in collapsed latrines not being reconstructed for some time now.

“Those HEP workers need time to know the kebele and adjust themselves. We are working together, helping them as much as our capacity permits” (a 39 year-old, male CHA)

1.3 Major achievements

Majority of the discussants when asked about their major achievements said the following:

“**መስኖ ማይን ህዝበቢን ናብ ዝመራሕኻዩም ይኣትው** ”

“*Irrigation water and people follow their guide*” (a 35-year old, male farmer)

“Our house now has more space, because household utensils that were placed on the floor in our locally built cupboard. This has mad it easy to keep the furniture and utensils clean” (a 60-year old, male farmer)

“In the past our kitchen did not have smoke outlet (chimney) and we suffered from eye irritation and frequently developed eye diseases. Now after there is smoke outlet and we are relieved of eye irritation and eye diseases from which I repeatedly suffered” (a 40-year old, woman)

“I have a clean house, separate bedrooms, cattle shelter with clean compound and clean latrine. Different guests frequently visit my house. And now I no more make repeated visit to clinics. All of our families are healthy, thanks to God”. (a 50-year old, women)

“All domestic animals were used to eat human feces and we were not feeling at ease on consuming their products. Most cattle’s teeth loosened as a result of eating human feces. But know after we constructed the latrine the domestic animals have no access to human

feces and all are relieved from previous problems. We are feeling good in using animal products too". (a 45-year old, male farmer)

Most of the discussants agreed that there was change in their health status. Frequent attendance of clinics has decreased. There are fewer malaria epidemics compared to previous times and other non-HEP villages.

1.4 Mechanisms for sustainability of the program

Sustainability is believed to have been attained when individuals and communities are able to sustain their development and to run programs on their own, with limited support from other bodies. Sources used were governmental employee's (health workers), IEC materials and community contributions as labor, local materials few amount of money contribution.

When we asked about how the program will be sustainable, to cope with the results were the most common responses.

Most discussants forward, households grouped into 30 to 45 and they have to tie by a group gathering called "mahber". The groups select one non working day (Sunday and holidays), provide accommodation for the busy farmers and use the stage for discussion of important issues such as, conflict resolution and setting solutions.

"ሓረስታይ መብዛሕቲኡ ጊዜ ኣንፃር ረብሓኡ እዩ"

"*Always a farmer goes opposite to his benefit unknowingly"* (a 40-year old, male). Who suggested that, they should not be left alone. "*Always a farmer needs continuous and strict follow up"*

Majority of discussant suggested, concerning health issues the kebele councils be evaluated based on their performances on HEP programs. District health offices should identify

priority activities through wereda councils with all other developmental activities of the wereda for implementing activities smoothly at kebele level.

They recommended experience sharing, with those achieved the best performances from kebele to kebele and even from wereda to woreda, distribution of leaflets and locally produced teaching materials for a group of households with HEP to be as used an entry point for discussion and upgrading their knowledge.

1.5 Major challenges of health extension package program

Most discussants agreed that HEP was not seen as a priority unlike other developmental activities at a kebele level. Kebele and village/Kushet leaders left this program to community health agents who do not have as much power as the kebele leaders to arrange time for practical activities like construction of latrines, separation of cattle shelter, etc.

"*We repeatedly went to selected, closely grouped households to give intensive training of whole HEP components. Nevertheless, in their residence we could not find any responsible person to handle the messages or decide. Adults were gone to the field for food security activities. This makes it difficult to give intensive training and exposure, and to have household graduated. Working days of the week are scheduled for other developmental activities. In addition, there is distance from residence and health post to the selected households. This was upsetting. Crossing up and down the hills without having any result". (a 22-year old, female HEP worker)*

"*Our training was not intense enough to help us handle all practical activities such as delivery services, how to construct a latrine, how to make modern cooking rooms (kitchens with chimney) etc. It was not supported by practical sessions and we always felt incompetent". (a 24-year old, female HEP worker)*

8. DISCUSSION

The study found a high level of active trachoma about 30% prevalence, in children age less than ten years in Kola Tembien District with and without HEP program. There is a difference between the two groups. In households with HEP, prevalence of active trachoma was about 17% while in households without HEP it was about 35.5%. This finding is very close to that of a previous study conducted in 2004, in Tigray Region, where 39.6% had signs of active trachoma [8]. The results of this study show that the prevalence of trachoma still exceeds the WHO threshold level used to define trachoma as a severe public health problem. The threshold prevalence for active trachoma among children aged 1 to 10 years old is 20% [20]. The prevalence of active trachoma in Kola Tembien District in under 10 years of almost 30% is nearly one and half times that of the WHO threshold. However, the prevalence of active trachoma in households with HEP was 17.0% which is below the WHO threshold while it was 35.5% for households without HEP which is about two times the threshold. The HEP program was not specifically designed for prevention of trachoma. Thus screening of trachoma at baseline was not done. There fore this could make it difficult to identify the magnitude of problem solved within those communities that implemented the HEP program. However, it is possible to see the differences between the two comparative groups with similar socio demographic characteristics. This study showed a statistically significant difference between the two groups, with rates lower by 63% in HEP than NHEP [OR=0.37; 95% CI: 0.22-0.63].

There was no significant difference between the groups in terms of household head occupation and education, and housewife education. This shows comparability of the two groups. On the other hand, there are statistical significant differences in number of

bedrooms (59% and 42.8%) and beds/spaces (72.3% and 47.8%), for HEP and NHEP households respectively. This is common in most rural parts, where bedrooms are not separated and with little attention to such aspects. However, households with HEP had separate bedrooms and enough places showing impact of the program. Twenty-four percent of households with HEP and 16.4% households without HEP own functional radio which is considered as one of the indicators of wealth/household income. Nevertheless, the average monthly income of less than or equal to 200 birr was higher in households with HEP than the non-HEP. It seems a contradictory result and may not be reliable to accept. The possible reason perhaps those households with HEP could expect support and might not willing to tell the real household in come.

Environmental factors groups including latrine availability and use, cleanliness of latrine and fly density less than 5 were significantly different between households with HEP and non-HEP. They were better in households with HEP than non-HEP. Location of cooking out side living room and kitchens with chimney were significantly higher in households with HEP than non-HEP and lower with cattle shelter not separated [Table 1, 2, 3]. Hence in this study, the practice of prevention of trachoma between the two groups differed widely. This was corroborated by FGDs of households with HEP who reported having frequent training, technical support and follow up of health workers and community health agents at household level, distribution of IEC materials, intense training, the role of household with HEP group leaders and their discussion with their members about their village heath issues. In households without HEP, these activities were not fully practiced, except health education at churches, meetings with community health agents, and at health institutions by health workers, which give additional chance to household with HEP. The

findings are in line with other studies that showed additional positive outcomes for the model that involved community participation [26]. This also supported by relationships among community leaders, health workers and supervisors, as well as the supervision evaluation process resulted to improved outcome [26, 31].

Poor environmental and personal hygiene practices are associated with increased risk of trachoma [21, 22]. In this study, active trachoma was significantly related with availability and proper use of latrines. Prevalence of trachoma is 62% lower in households with HEP than those without HEP [24]. We observed that 73.6% of latrines of households with HEP and 49.1% of latrines of households without HEP were clean and less than 15% of households in both groups were not using the latrines. FGDs supported perceived needs by the user were developed and the desired effect of reducing fecal contamination of the environment had been achieved. A study conducted in a sub Saharan village showed that there was a dramatic fall in disease occurrence parallel with improvements in sanitation, water supply, education access to health care, and training of village health workers and traditional birth attendance in eye care [32]. Its particular importance is that the decline in trachoma occurred without any specific interventions [33].

It is known that accumulation of garbage around residence (in backyard) could attract flies will be a risk factor for trachoma. In this study, there was a significant difference between disposal pit and open field disposal system with respect to prevalence of trachoma [OR=1.43; 95% CI: 1.04-1.95]. Among those who dispose domestic wastes to a disposal pit the prevalence was 1.43 times higher in households with HEP than households without HEP. This could probably be due to improper handling and distance of the disposal pit from living houses and comparatively those with HEP had used disposal pit than NHEP.

Poorly handled disposal pit could be equally good breading sites for flies as open filed disposal of domestic wastes, particularly when pits are located nearer to residential houses [23].

Dirty faces are associated with active trachoma. Children with dirty faces are more likely to transmit trachoma if they have an active infection or to get trachoma if they are not infected [10]. A study conducted in Tanzania showed that poor facial cleanliness in children [OR=1.70; 95% CI: 1.17-2.50] and household fly density [OR=1.63; 95% CI: 1.17-2.29] are associated with active trachoma [33]. Both factors are potentially amenable to intervention. The investigator suggested that an intervention strategy aimed at these hygiene measures would provide an effective method of controlling trachoma [32]. Another study conducted in Kongwa, Tanzania showed that having a clean face is associated with lower risk of odds of active trachoma in children [OR=0.40; 95% CI: 0.18-0.87] [33]. In our study, we had similar findings. The prevalence of active trachoma [OR=0.40; 95% CI: 0.29-0.57], between individuals who had clean face were 60% having reduced prevalence of active trachoma than unclean face.

Frequency of face washing was significantly associated in the area HEP implemented and was significantly associated with active trachoma prevalence, [OR=0.10, 95% CI: 0.05-0.18]. It showed that, frequency of face washing daily decreases prevalence of active trachoma by 90% in area where HEP was implemented. Even though both groups had very low use of soap to wash face, (10.6 % in households with HEP and 3.0% without HEP), prevalence of trachoma in individuals who used soap had significantly lower prevalence of active trachoma [OR=0.37, 95% CI: 0.15-0.95].

Education was being given to households with HEP to use soap; however, the communities did not have access to affordable soap, or in some cases, any soap.

The degree of access in terms of distance to water source was associated with active trachoma prevalence [24]. We have assessed one-way walking distance to collect water from sources as a measure of access to water supply, assuming that long distance can be a constraint on the volume of water brought to households for hygiene purposes. Distance to fetch water less than one kilometer was significantly related with prevalence of active trachoma. It was 1.47 time higher in households with HEP than non-HEP. This apparently contradictory result can be due the quantity of water brought into a household may be more important than the distance it has come.

9. STRENGTH and LIMITATIONS

Strength of the study

- This study is the first of its kind in our country and can serve as a baseline for future studies
- This study triangulates different data collection methodologies
- The study uses comparison based on objective findings i.e. Screening for trachoma
- There was no non-responses during the survey

Limitations

- This is the first study carried out in the practical implementation of household health extension package, no local peer reviewed articles; knowledge and experiences are limited.
- Subjectivity of measuring distance to water source
- Contamination of information.

10. CONCLUSSIONS

The prevalence of active trachoma in households with HEP in under 10 years was 17% while in non- HEP was 35.5%. And it is decreased by 37% than those in the non-HEP program.

In households with HEP suffering from eye irritation and eye diseases and frequency of visit to health institution for different health problems have decreased.

Those who were involved in the HEP program have internalized its importance, and other communities not involved identified and appreciated the HEP program.

The relation between communities and health workers, community health agents and HEP workers was very well. They are helping each other. Nevertheless, the frequency of follow up by health workers is declining. Grouping into 30 to 45 households, that are closely related and having time-frame and committee leaders used for regular follow up of the program.

There are no monitoring tools for kebele councils concerning health extension package program.

The district Health Office was not undertaking integrated activities with other developmental programs of the wereda through wereda council to implement at grass root level.

There was lack of intense training on practical activities to health extension package workers to help them handle the assigned components of the HEP program.

11. RECOMMENDATIONS

- The prevalence of trachoma is lower in the HEP program area by as compared to the non-HEP area. Therefore, extension of the HEP program to the non-HEP area will improve the health status of the community.
- Prevalence of trachoma in the District is higher than the WHO threshold level used to define trachoma as a severe public health problem and this needs urgent implementation of SAFE strategy through HEP program.
- Though prevalence of solid waste disposal pit has increased in the HEP area, we found increased prevalence of active trachoma. This was due to the distance of the pit and method of disposing wastes. Therefore, consideration and modification of solid waste disposal pit in rural settings is necessary.
- Kebele councils concerning health issues be evaluated based on their performance on HEP program. Priority health activities should pass through woreda council and integrated with other developmental activities.
- Continuing education to HEP workers through in-service training and/or short course training and also supporting with reference materials.
- Further sensitization and training is necessary to enhance the awareness of political and community leaders, to create community concern and sustainability of the program.
- Norms and standards should be developed to help monitoring and evaluation of the program at each level of implementation.

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ANNEX

Appendix A: Questionnaire

STRUCTURED QUESTIONNIARE FOR QUANTITATIVE STUDY

Questionnaire ID Number _____

HOUSEHOLD QUESTIONNAIRE

District Name _____Kebele/Tabia Name_____ "Kushet" Name_____

SECTION I. General Information

INTRODUCTION AND CONSENT

INFORMED CONSENT

Hello. My name is _____ and I am part of a team of people who are carrying out a survey to "Compare effects of household health extension packages between villages with household health package and villages without household health extension package in Kola Tembien District" (Show a letter of approval from DHO). We would very much appreciate your participation in this survey. I would like to ask you some questions and it will take about 30 minutes. Your answers will remain confidential, and we will not be taking down your name or address, so your answers will be anonymous.

Participation in this survey is voluntary and you can choose not to answer any individual question or all of the questions. However, we hope that you will participate in this survey since your views are important.

At this time, do you want to ask me anything about the survey?

May I begin the interview now?

Start time____: _ End time____: __ Date_____/____/_____

RESPONDENT AGREES TO BE INTERVIEWED	RESPONDENT DOES NOT AGREE TO BE INTERVIEWED .....

Socio demographic characteristics of the household

No	Questions	Responses	
101	Residence	1 - Urban 2 - Rural	
102	Altitude of living area above sea level in meter	☐☐☐☐	
103	Sex of the head of the household	1. Male 2. Female	
104	Marital status	1 - Married 2 – Single 3 - Divorced 4 – Widow 5 – Separated (above 1 year)	
105	Sex of respondent (if household head escape to question number 107)	1. Male 2. Female	
106	What is your relationship to the head of household	1 - Wife 2 - Husband 3 - Daughter 4 - Son 5 - Sister 6 - Brother 7 - Cousin 8 – No relation 9 – Other	
107	Age of respondents	☐☐	
108	Educational status of head of the household	1. Illiterate 2. Read only 3. 1 to 4^{th} grade 4. 5 to 8^{th} grade 5. 9 to 12^{th} grade 5. Above 12^{th} grade	
109	Religion of respondent	1 -Orthodox 2 - Catholic 3 - Muslim 4 - Protestant 9 – Others (Specify)	

110	Occupation of head of the household	1. Farmer 2. Government employ 3. Craftsman 4. Merchant 5. House wife 6. Retired 9. Other specify _____	
111	Occupation of the mother (if she is not head of household)	1. Government employ 2. House work 3. daily laborer 4. house wife 5. Private gain 9. Other specify _____	
112	Educational status of the mother (if she is not head of household)	1. Illiterate 2. Read only 3. 1 to 4th grade 4. 5 to 8th grade 5. 9 to 12th grade 5. Above 12th grade	
113	Ethnicity	1. Tigrian 2. Amharic 3. Oromian 4. Other	
114	Do you or anyone in your household own a functioning radio?	1 - YES 2 – NO	
115	Mostly, time of listening radio per a day	1. Morning 2. Day 3. Noon 4. All the day 9. Other (specify)	
116	Mostly, time of listening radio per a week	1. Monday to Friday 2. Saturday and Sunday 3. Every day 9. Other (specify)	
117	Family size	☐☐	
118	Number of children less than 10 years of old	_____	

119	Average monthly income	_____	
120	Relative to your neighbors how is your economic status?	1 – Very poor 2 – Poor 3 – Average 4 – Better off than average 5 – Rich	

Housing and environmental factors of trachoma

121	Cover of house	1. Corrugated iron 2. Hat 3. Hidmo 9. Other (specify)	
122	Houses owned by the families	1. Yes 2. No	
122	Number of living rooms in the house	☐☐	
124	Number of sleeping rooms in the house	☐☐	
125	Number of sleeping beds/places in the house	☐☐	
126	Do you have latrine?	1 – Yes 2 – No	
127	If yes, type of latrine	1. Private pit latrine 2. Communal pit latrine 3. Private water carriage 4. PVC 5. Communal water carriage 9. Other (specify)	
128	If yes, cleanliness of the latrine	1. Clean 2. Unclean	
129	If yes, do you use the latrines regularly?	1 – Yes 2 – No, because it is full 3 – No 9. Other (specify)	

130	If yes, number of flies	1 – No flies 2 – Less than 5 flies 3 – Five to ten flies 4 – Above ten flies	
131	If yes, distance of latrine from the house in meters	☐☐	
132	Reasons for not having a latrine	1 – No appropriate place 2 – No time, money 3 – Lack of knowledge 4 – Not important	
133	Do you own cattle?	1 – Yes 2 – No	
134	If your answer to question 209 is yes, where do the cattle pass the night?	1 – In the same room where family lives 2 – In the compound not separated 3 – In the compound separated 9 – If other, specify ------	
135	If your answer to question 209 is yes, where do the cattle pass the night?	1 – Unclean with flies 2 – Unclean without flies 3 – Clean without flies 4 – Clean with flies	
136	What do you do with your domestically produced refuse (garbage)	1 – Burn it 2 – Bury it 3 – Dispose it in the farm 4 – Simply dispose it in other place	
137	If your answer to question 206 is option 4, where do you dispose it?	1 – Near by living house 2 – Far away from the living house 3 – In the river or stream	
138	Frequency of house cleaning	1. ____ times per a day 2. ____ times per a week 3. ____ times Per a month 4. ____ times per a year	
139	Type kitchen used	1 – With chimney 2 – Without chimney 3 – In the compound	

140	Does cook room separated from living rooms?	1 – Yes 2 – No	
141	What action did you take when the family is Sick?	1 – Take him/her to health institution 2 - Take him/her to traditional healer 3 - Take him/her to CHW 4 - Take him/her to holy water 5 – No thing 6 – Other (specify) _____	

Access to water and personal hygiene

142	From where do the family members get water for domestic consumption?	1. River 2. Unprotected spring 3. Pond 4. Unprotected well 5. Protected spring 6. Protected well 7. Other (specify) _____	
143	Distance in kilometers from residence to water source	_____	
144	How much do the family members consume water per day for cooking, washing utensils, clothes and personal hygiene?	1. Less than one pot (20 liters) 2. 1 to 2 pots (20 – 40 liters) 3. 2 to 3 pots (40 – 60 liters) 4. 3 to 4 pots (60 – 80 liters) 5. 4 and above (> 80 liters)	
145	Frequency of water fetched per a day	_____	
146	Who is responsible for water to fetch	1 – Mother 2 – Females 3 – Boys 4 – Father 5 – Others (specify)	
147	Where did the family bath their body	1 – Home 2 – Outside home 3 - Shower 9 - Others (specify)	

148	Where did the family wash their clothes	1 – Home 2 – Outside home 3 - Shower 9 - Others (specify)	
149	Mostly, what did you use to bath your body	1 – Soap 2 – Nothing 9 - Others (specify)	
150	Mostly, what did you use to wash your face	1 – Soap 2 – Nothing 9 - Others (specify)	
151	When did you bath your hand	1. After urination/deification 2. After eating 3. When hands were not clean 4. After weak up	

Screening of trachoma

SN	Name	Age in years	Sex 1- Male 2-female	Educational status /Grade completed for child in school or dropped out 1 – Too young to go to school (pre school child) 1. Illiterate 2. Read only 3. 1 to 4th grade 4. 5 to 8th grade 5. Dropped out of school (discontinued)	How often does with his her face 1 – Two or more times per day 2 – Once daily 3 – Two to six times per week 4 – Once weekly 5 – Stays unwashed for longer than a week	Does he/she use soap when washing face 1-Yes 2 - No	Diagnosis of trachoma 1. Normal 2. TF 3. TI 4. TS 5. TT 6. CO 7. Bitots spot 8.TF/TI 9……
301							
302							
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QUALITATIVE QUESTIONNAIRE FOR FOCUS GROUP DISCUSSION

Interview guide, for FGD with, Health extension workers, community members, (Members and head of the health extension groups), Community health workers

THEME I. INTRODUCTION

Thank you for coming to this session, your presence is very important. (Description: - what a focus group what it like an opinion survey, but very general, broad questions).

PURPOSE: - We will be discussing your reaction/perception and experience about the importance, impact and challenges of household extension packages.

- All your ideas, comments and suggestions are of great importance for us.
- There is no right or wrong answer; all comments both positive and negative are welcome.
- Please disagree to one another when necessary. We would like to have many points of view. Ask each participant to introduce him/her self.
- Name
- Some thing about one's self, position, work or residential experience and others as desired.

1 – Discussion points

A – Community perception on the household health extension package.

B – The relation ship of health worker, community health agents, HEP workers, Wereda/Tabia councils

C – Major achievements of the household with health extension package.

D – Major challenges of the household health with extension package.

E – Mechanisms designed for sustainability of the household health extension package.

Checklist for observational study

A – Guidelines

B – Reporting formats

C – Baseline data

D – Criteria and List for identifying sub villages/"Kushets" to be covered by health extension package program