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Article

Knowledge, Attitudes, and Practices about Trachoma in Four Evaluation Units of Low Endemic Areas, in Yemen: Implications for Prevention and Control

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Abstract: Background: Trachoma is a bacterial infection that causes blindness worldwide and affects impoverished communities disproportionately. However, knowledge, attitudes, and practices (KAP) are yet to be conducted in Yemen. Objective: To assess the KAP regarding trachoma and its associated factors among rural communities in six districts within four Evaluation Units (EUs) of Hodeidah and Ibb governorates in Yemen. Methods: A community-based cross-sectional study was conducted in six districts of four EUs of the Hodeidah and Ibb governorates in January 2025. Bivariate analysis (chi-squared) identified variables for multivariable logistic regression ($p < 0.25$). Multicollinearity was addressed by excluding relevant variables from each model. Results: The study of 1164 participants revealed varying levels of trachoma-related KAP: 38.8% had good knowledge, 19.1% had positive attitudes, and 46.5% had good hygiene. Significant associations ($p < 0.001$) showed that older household heads had lower KAP, maternal literacy significantly improved KAP, paternal employment had mixed effects, larger households had lower knowledge, higher wealth boosted expertise and practices, and male-headed households had lower knowledge. Conclusions: This study found significant disparities in KAP related to trachoma prevention influenced by factors such as the age of the household head, parental literacy, and household wealth.

Keywords: trachoma; evaluation unites; KAP; Yemen

1. Introduction

Trachoma, a bacterial infection of the eye, constitutes the second leading cause of preventable blindness worldwide. This treatable and preventable disease disproportionately affects impoverished populations. [1-4] Trachoma disproportionately affects individuals in disadvantaged rural areas with limited access to necessities like clean water and sanitation. [5, 6] Globally, an estimated 142.2 million people are at risk of trachoma, and it is responsible for visual impairment in approximately 1.9 million individuals. [7, 8] The World Health Organization (WHO) endorses the SAFE (Surgery, Antibiotics, Facial cleanliness, and Environmental improvement) strategy for trachoma elimination, which has been implemented in over 40 countries worldwide where trachoma is endemic. [9, 10] The SAFE strategy can eliminate trachoma, but its proper application remains crucial as the disease continues to pose a global health threat. [11]. Trachoma persists as a significant health issue in the world's poorest communities. Several factors contribute to an increased risk of trachoma, including limited access to clean water, poor personal hygiene, and inadequate environmental sanitation. [12-14]. In Yemen 2024, the adjusted prevalence of the clinical sign trachomatous inflammation-follicular [15] among children aged 1–9 years in the enumeration units encompassing highly endemic areas specifically Hodeidah and Ibb was 0.9 % and 0.8%, respectively. (Unpublished) Trachoma is a substantial segment of the population that exhibits unfavorable attitudes and a lack of knowledge concerning trachoma infection. Although the implementation of various interventions, including annual mass drug administration (MDA), for trachoma control has

expanded in Yemen in recent years, significant knowledge gaps persist among vulnerable populations, particularly those residing in remote rural areas and those experiencing economic hardship. (Unpublished) These populations may have limited awareness and adherence to recommended trachoma prevention and control measures. However, there is currently a dearth of data on KAP regarding trachoma prevention and control within rural communities in the six districts. The research findings shed light on critical gaps in knowledge, community practices, and perceptions surrounding trachoma, and how these factors influence patient health-seeking behavior. This valuable information is crucial for promoting health and preventing trachoma by addressing the underlying causes and drivers of disease spread. Ultimately, these findings can significantly enhance the impact of programs aimed at preventing and eliminating trachoma within the country. Furthermore, these findings will provide valuable insights for policymakers in formulating appropriate interventions to implement the SAFE strategy effectively. However, the study aimed to assess the KAP to give us more concepts for eliminating the disease.

2. Methods

2.1. Study design, population and setting

A community-based cross-sectional study was conducted among households in six low-endemic trachoma districts across four Evaluation Units (EUs) in January 2025. These districts, identified in 2024 with a TF prevalence exceeding 5%, included Far Aludayan and Mudaykhirah in Ibb Governorate, and Almighalf, Almunirah, As Salif, and Azayadyah in Hodeidah Governorate (Fig. 1). Eligible participants were male and female heads of households who provided informed consent.

2.2. Sample size calculation

The sample size was calculated to be 1164 using standard epidemiological procedures. This calculation incorporated the following assumptions: a 95% confidence level ($Z_{\alpha/2} = 1.96$), an estimated population proportion of 60% with adequate knowledge regarding trachoma, a desired margin of error of 5%, a design effect of 2.63, and an inflation factor of 1.2 to account for potential data loss. [16]

2.3. Sampling strategy

A two-stage cluster sampling approach was utilized. In the first stage, 30 clusters were systematically selected from villages within the study districts, and grouped into (EUs) according to WHO criteria. [17] In the second stage, a compact segment sampling method was used to select households from each cluster, with selection proportional to cluster population size. Households were defined as individuals residing in a dwelling unit, regardless of marital status. Households were then randomly selected from the lists. Informed consent was obtained from the heads of selected households (or their adult representatives) before study participation, as per WHO guidelines. [17]

2.5. Data collection

A structured questionnaire was adapted from a previous study. [18, 19] Face-to-face interviews with eligible household heads were conducted. Direct observations were used to measure personal and household practices. A qualitative method was used to determine the attitudes of the community toward the trachoma. Before conducting interviews with respondents, the team was trained on research tools. To prevent disease transmission among participants, investigators used disposable gloves or cleaned their hands with 70% alcohol.

2.4. Operational Definition

Knowledge was assessed using nine questions, with correct answers scored as 1 and incorrect as 0. Good knowledge was defined as scoring above the median score. Attitudes and practices were

similarly assessed using seven questions each. Individuals scoring above the median on the attitude and practice scales were categorized as having good attitudes, and good practices, respectively. Therefore, participants scoring above the median of 7, 7, and 24 were considered to have good knowledge, practice, and attitude, respectively.

2.6. Statistical analysis

SPSS version 26 was used for data analysis. All the total KAP score variables were not normally distributed, as determined by the Shapiro-Wilk test ($p\text{-value} \leq 0.05$). However, the median was used as the cutoff point for the categorizing of the total knowledge, practice, and attitude scores. Frequency, and percentage were used to present categorical variables.

Bivariate analyses were conducted to identify potential associations between independent and dependent variables. Variables with p -values less than 0.25 in the bivariate analyses were included in a multivariable logistic regression model. Multicollinearity was checked using variance inflation factors (VIF), and variables with high multicollinearity were removed. For example, the practice variable was removed during the multivariate analysis for knowledge, the knowledge variable was removed during the multivariate analysis for practice, and both knowledge and practice variables were removed during the multivariate analysis for attitude. A $p\text{-value} < 0.05$ was considered statistically significant.

3. Results

3.1. Characteristics of the study population

The majority of household heads were female (68.3%), aged 40 years or younger (57.6%), and a substantial proportion of households had more than seven members (49.1%). Most fathers were literate (79.0%), mothers were literate (58.7%), and the majority of fathers were employed (77.2%). In addition, a significant proportion of households were classified as poverty-poor in terms of the wealth index (38.8%) (Table 1).

Table 1. Sociodemographic characteristics of study participants (N=1164).

Characteristics	<i>n</i>	(%)
Gender of the household head		
Male	369	31.7
Female	795	68.3
Age of the household head (years)		
≤40	671	57.6
>40	493	42.4
Family size (members)		
≤7	592	50.9
>7	572	49.1
Father’s literacy status		
Literate	919	79.0
Illiterate	245	21.0
Mother’s literacy status		
Literate	683	58.7
Illiterate	481	41.3
Father’s employment status		
Employed	899	77.2
Unemployed	265	22.8
Wealth index		

Rich	712	61.2
Poor	452	38.8

3.2. Knowledge of Trachoma.

A majority 983 (84.5%) of the study subjects had heard of trachoma. However, 722 (62.0%) had heard of MDA. Two hundred and thirty-seven (20.4%) respondents correctly identified the cause of the trachoma. Regarding measures that can be taken to prevent trachoma, 402 (34.5%) daily hand washing with water and soap, and symptoms of redness and tearing of the eye were 352 (30.2%),362 (31.1%), respectively. Transmission of trachoma, 570 (46.6%), 90 (7.7%), and 175 (15.0%) of the study subjects correctly responded that contact with an unhygienic environment, through flies landing on the face, and contact with nasal or eye discharges, respectively. A total of 941(80.5%) patients with trachoma’s were treated. Less than two quarters, 435 (38.8%) of the study subjects had good knowledge of trachoma (Table 2).

Table 2. Knowledge, of study Community Toward trachoma in Four Evaluation Units in Yemen,2025.

Characteristics	<i>n</i>	(%)
Heard about trachoma disease		
Yes	983	84.5
No	181	15.5
By what have you heard		
MDA	722	62.0
Community	90	7.7
TV	56	4.8
Radio	98	8.4
Others	198	17.0
What do you think causes trachoma		
Bacteria	237	20.4
Dust	542	46.6
Flies	201	17.3
Virus	74	6.4
I don’t know	110	9.5
What measures can be taken to prevent trachoma		
Avoid contact with nasal or eye discharges	88	7.6
Avoid sharing clothes	125	10.7
Daily hand wash with water and soap	402	34.5
Improving access to clean water	141	12.1
Use medicine	408	35.1
What are the symptoms of trachoma that you know		
Itching	219	18.8
Photophobia	86	7.4
Redness of the eye	352	30.2
Scratching of the eyelashes	145	12.5
Tearing of the eye	362	31.1
How is trachoma transmitted?		
Unhygienic environment	570	46.6
Through flies landing on the face	90	7.7
Contact with nasal or eye discharges	175	15.0
Sharing clothes or fomites	206	17.7
I don’t know	110	9.5
How often should a person wash their face to prevent trachoma		
One	157	13.5

Twice	185	15.9
Three times	452	38.8
When it dirty	370	31.8
Can trachoma be treated?		
Yes	941	80.8
No	155	13.3
I don't know	68	5.8
Where would you go if a family member had symptoms of trachoma		
Hospital	351	30.2
Local Clinic	298	25.6
Ophthalmologist	207	17.8
Traditional Healer	217	18.6
I don't know	91	7.8
Knowledge status		
Good	435	38.8
Poor	712	61.2

3.3. Attitude on Trachoma Prevention and Control.

Of the and forty-two (80.9%) of the study participants had a poor attitude toward trachoma infection. According to this study, 471 (40.5%) participants strongly agreed that trachoma is a health problem in the community. Conversely, 535 (46.0%) agreed and 426 (36.6%) agreed that lies are the main vector of the disease and are transmitted from person to person. Of the study participants, 369 (31.7%) disagreed that trachoma may eventually lead to blindness. Nearly 370 (31.8%),334 (28.7%), and 458 (39.3%) of the respondents agreed and strongly agreed that hygiene and sanitation are preventing disease, disposal of waste is protection from disease, and taking drugs is important to prevent and control, respectively (Table 3)

Table 3. Attitude of the Study Community Toward Trachoma in Four Evaluation Units in Yemen,2025.

Variables	Likert Scale				
	Agree	Strongly agree	Disagree	Strongly disagree	Neutral
Trachoma is a health problem in your community	392 (33.7%)	471(40.5%)	123(10.6%)	127(10.9%)	51(4.4%)
Flies are the main vector of the disease	535(46.0%)	219(18.8%)	142(12.2%)	101(8.7%)	167(14.3%)
Trachoma transmitted from person to person	426(36.6%)	273(23.5%)	168(14.4%)	147(12.6%)	150(12.9%)
The disease may eventually lead to blindness.	132(11.3%)	145(12.5%)	191(16.4%)	369(31.7%)	327(28.1%)
Hygiene and sanitation are a preventing disease	370(31.8%)	288(24.7%)	301(25.9%)	183(15.7%)	22(1.9%)
Disposing of waste is a protection from disease	332(28.5%)	334(28.7%)	103(8.8%)	291(25.0%)	104(8.9%)
Taking drugs is important to prevent and control	458(39.3%)	360(30.9%)	96(8.2%)	106(9.1%)	144(12.4%)
Attitude Category					
Good	222 (19.1%)				
Poor	942 (80.9%)				

3.4. Practices on Trachoma Prevention and Control.

The majority of respondents, 348 (29.9%) and 347(29.7%), reported that the main source of water for domestic use during the dry season was from wells and springs, respectively. A total of 862 (74.1%) participants reported a distance between home and water source of less than 30 min. The majority,1003 (86.2%) reported no presence of flies on the child's face, and 987 (84.8%) reported no presence of animals in the house. However, 781 (67.1%),667 (57.3%), and 912 (78.4%) participants used enough water for bathing, had proper solid and liquid waste disposal management, and utilized a latrine, respectively. Of the total, 541 (46.5%) respondents were classified as having good practices towards trachoma prevention and control (Table 4).

Table 4. Practices of study Community of trachoma in Four Evaluation Units in Yemen,2025.

Characteristics	<i>n</i>	(%)
The main source of water for domestic use during the dry season		
Rainwater	118	10.1
River	87	7.5
Spring	347	29.8
Transportation tankers	264	22.7
Well	348	29.9
Distance between home and water source		
<30 Min	862	74.1
>30Min	302	25.9
The presence of flies on the child's face		
No	1003	86.2
Yes	161	13.8
The presence the feces around the house		
No	987	84.8
Yes	177	15.2
The presence of animals in the house		
No	541	46.5
Yes	623	53.5
Use enough water for bathing		
No	383	32.9
Yes	781	67.1
Having proper solid &liquid waste disposal management		
No	497	42.7
Yes	667	57.3
Latrine utilization		
No	252	21.6
Yes	912	78.4
Practice Category		
Good	541	46.5
Poor	623	53.5

3.5. Multivariable Logistic Regression Analysis for Factors Associated with Knowledge of Study Participants about Trachoma in Four Evaluation Units in Yemen,2025

Multivariable logistic regression analysis revealed that age of the head of household, gender of the head of household, household size categories, mother’s literacy status, father’s occupation status, and wealth index were significantly associated with knowledge status of the participants (AOR=0.13,95%CI:0.08–0.22), (AOR=0.59,95%CI:0.37–0.96),

(AOR=0.62,95%CI:0.0.99,(AOR=102,95%CI:47.7–219.4),(AOR=43.6,95%CI:22.2–85.5),andAOR=6.47,95%CI:3.94–10.62), respectively (Table 5).

Table 5. Logistic regression analysis of selected variables with knowledge of study participants on trachoma in Four Evaluation Units in Yemen,2025.

Variables	Knowledge		COR (95% CI)	P-value	AOR (95% CI)	P-value
	Adequate %	Inadequate %				
Age of the head of household (years)						
≤40	75(16.6%)	418(58.7%)	0.14(0.11-0.19)	<0.001	0.13(0.08-0.22)	<0.001
>40	377(83.4%)	294(41.3%)	Ref		Ref	
Gender of the head of household						
Male	96(21.2%)	273(38.3%)	0.43(0.33-0.57)	<0.001	0.59(0.37-0.96)	0.033
Female	356(78.8%)	439(61.7%)	Ref		Ref	
Household size categories						
≤7	195(43.1%)	397(55.8%)	0.60(0.48-0.76)	<0.001	0.62(0.40-0.99)	0.044
>7	257(56.9%)	315(44.2%)	Ref		Ref	
Father's literacy status						
Literate	373(98.2%)	239(33.6%)	1.44(1.065-1.935)	0.010	0.59(0.33-1.06)	0.076
Illiterate	8(1.8%)	473(66.4%)	Ref		Ref	
Mother's literacy status						
Literate	444(86.6%)	82(17.4%)	109(53.7-224.8)	<0.001	102(47.7-219.4)	<0.001
Illiterate	93(13.4%)	388(82.6%)	Ref		Ref	
Father's occupation status						
Employed	438(96.9%)	461(64.7%)	17.03(9.79-29.64)	<0.001	43.6(22.2-85.5)	<0.001
Unemployed	14(3.1%)	251(35.3%)	Ref		Ref	
Wealth Index						
Rich	366(81.0%)	346(48.6%)	4.50(3.41-5.94)	<0.001	6.47(3.94-10.62)	<0.001
Poor	86(19.0%)	366(51.4%)	Ref		Ref	
Practice Category						
Good	451(100.0%)	89(12.5%)	6.08(5.03-7.35)	<0.001		
Poor	0(0.0%)	623(87.5%)	Ref			
Attitude Category						
Good	66(14.6%)	156(21.9%)	0.61(0.44-0.84)	0.001	0.98(0.57-1.69)	0.939
Poor	386(85.4%)	556(78.1%)	Ref		Ref	

3.6. Multivariable Logistic Regression Analysis for Factors Associated with Attitudes of Study Participants about Trachoma in Four Evaluation Units in Yemen,2025

Multivariable logistic regression analysis showed that age of the head of household, household size categories, mother’s literacy status, and father’s occupation status were significantly associated with attitude status of the participants (AOR=3.12, 95%CI: 2.23–4.36), AOR=1.82, 95%CI: 1.33–2.50), AOR=3.60, 95%CI: 2.50–5.17), and AOR=0.43, 95%CI: 0.31–0.61), respectively (Table 6).

Table 6. Logistic regression analysis of selected variables with Attitude of study participants on trachoma in Four Evaluation Units in Yemen,2025.

Variables	Attitudes		COR (95% CI)	P-value	AOR (95% CI)	P-value
	Good (%)	Poor (%)				
Age of the head of household (years)						
≤40	123(55.4%)	370(39.3%)	1.92(1.43-2.58)	<0.001	3.12(2.23-4.36)	<0.001

>40	99(44.6%)	572(60.7%)	Ref		Ref	
Gender of the head of household						
Male	148(66.7%)	647(68.7%)	0.91(0.67-1.25)	0.307		
Female	74(33.3%)	295(31.3%)	Ref			
Household size categories						
≤7	135(60.8%)	457(48.5%)	1.65(1.22-2.22)	0.001	1.82(1.33-2.50)	<0.001
>7	87(39.2%)	485(51.5%)	Ref		Ref	
Father’s literacy status						
Literate	45(20.3%)	200(21.2%)	0.94(0.656-1.36)	0.415		
Illiterate	177(79.7%)	742(78.8%)	Ref			
Mother’s literacy status						
Literate	160(72.1%)	523(55.5%)	2.07(1.50-2.85)	<0.001	3.60(2.50-5.17)	<0.001
Illiterate	62(27.9%)	419(44.5%)	Ref		Ref	
Father’s occupation status						
Employed	147(66.2%)	752(79.8%)	0.50(0.36-0.68)	<0.001	0.43(0.31-0.61)	<0.001
Unemployed	75(38.8%)	190(20.2%)	Ref		Ref	
Family ownership of land						
Rich	133(59.9%)	579(61.5%)	0.94(0.70-1.26)	0.362		
Poor	89(40.1%)	363(38.5%)	Ref			
Knowledge Category						
Good	66(29.7%)	386(41.0%)	0.61(0.44-0.84)	0.001		
Poor	156(70.3%)	556(59.0%)	Ref			
Practice Category						
Good	155(69.8%)	386(41.0%)	3.33(2.43-4.56)	<0.001		
Poor	67(30.2%)	556(59.0%)	Ref			

3.7. Multivariable Logistic Regression Analysis for Factors Associated with Practices of Study Participants about Trachoma in Four Evaluation Units in Yemen,2025

Multivariable logistic regression analysis indicated that the age of the head of household, mother’s literacy status, father’s occupation status, and wealth index were significantly associated with the practice status of the participants (AOR=0.26, 95%CI: 0.18–0.39), AOR=170, 95%CI: 82–358), AOR=3.67, 95%CI: 2.35–5.73), and AOR=1.57, 95%CI: 1.03–2.40), respectively (Table 7).

Table 7. Logistic regression analysis of selected variables with Practice of study participants on trachoma in Four Evaluation Units in Yemen,2025.

Variables	Practices		COR (95% CI)	P-value	AOR (95% CI)	P-value
	Good (%)	Poor (%)				
Age of the head of household (years)						
≤40	106(19.6%)	387(62.1%)	0.15(0.11-0.19)	<0.001	0.26(0.18-0.39)	<0.001
>40	435(80.4%)	236(37.9%)	Ref		Ref	
Gender of the head of household						
Male	133(24.6%)	236(37.9%)	0.54(0.42-0.69)	<0.001	0.70(0.47-1.06)	0.088
Female	408(75.4%)	387(62.1%)	Ref		Ref	
Household size categories						
≤7	234(43.3%)	358(57.5%)	0.56(0.45-0.71)	< 0.001	0.75(0.50-1.11)	0.148
>7	307(56.7%)	265(42.5%)	Ref		Ref	
Father's literacy status						
Literate	105(19.4%)	140(22.5%)	1.20(0.91-1.60)	0.114		
Illiterate	436(80.6%)	483(77.5%)	Ref			

Mother's literacy status						
Literate	533(98.5%)	150(24.1%)	210(102-432)	< 0.001	170(82-358)	<0.001
Illiterate	8(1.5%)	473(75.9%)	Ref		Ref	
Father's occupation status						
Employed	457(84.5%)	442(70.9%)	2.23(1.67-2.98)	< 0.001	3.67(2.35-5.73)	<0.001
Unemployed	84(15.5%)	181(29.1%)	Ref		Ref	
Wealth Index						
Rich	380(70.2%)	332(53.3%)	2.07(1.62-2.65)	< 0.001	1.57(1.03-2.40)	0.038
Poor	161(29.8%)	291(46.7%)	Ref		Ref	
Knowledge Category						
Good	452(83.5%)	623(100.0%)	0.12(0.10-0.15)	< 0.001		
Poor	89(16.5%)	0(0.0%)	Ref			
Attitude Category						
Good	155(28.7%)	67(10.8%)	3.33(2.43-4.56)	< 0.001		
Poor	386(71.3%)	556(89.2%)	Ref			

Discussion

The study revealed significant associations between good knowledge, attitudes, and practices regarding trachoma and several factors, including the age of the head of household, mother's literacy status, and father's occupation status. Good knowledge and attitudes were significantly associated with household size, while good knowledge and practices were significantly associated with the wealth index. Additionally, the gender of the head of the household was significantly associated with good knowledge.

Regarding knowledge, the majority of respondents (84.5%) had heard of trachoma, comparable to findings in Northern Ethiopia (89.2%) and Bangladesh (86%) [18, 20]. However, this rate was higher than that reported in Kenya (65.7%) and lower than in other countries [21, 22], suggesting that community mobilization and sensitization efforts may have been implemented in the study sites. MDA campaigns were the primary source of information for 62% of the participants, suggesting that these initiatives have significantly contributed to raising awareness of trachoma. This is similar to the findings of studies in other countries, such as Zambia, Ethiopia, and Kenya. [23-25]The present study revealed that (46.6%), (20.4%), and (17.3%) of respondents correctly reported that trachoma can be transmitted by dust, bacteria, and flies, respectively. Similar studies from Kenya and Ethiopia reported that the most reported mode of trachoma transmission was contact with flies and dirt. [20, 26] Daily handwashing with soap and water and the use of medication were identified as the most common preventive measures. While less frequent, other preventive measures mentioned, such as avoiding contact with eye discharges and sharing clothes, demonstrate some understanding of the potential trachoma transmission routes.

This suggests a gap in the understanding of trachoma's true etiology, and the likely reason is the lack of awareness of the participants toward trachoma, which is in line with a study conducted in other countries. [3, 27, 28] Participants identified several potential transmission routes for trachoma, including unhygienic environments, contact with nasal or eye discharges, and the sharing of clothes or contaminated items. They also recognized that trachoma can be prevented by going to the hospital or health facility, seeing specialists, using appropriate medications, improving sanitation, and regular hand and face washing with soap. Similar findings have also been reported in studies conducted in other countries. [29-31] Finally, (61.2%) of the community demonstrated inadequate knowledge of trachoma.

Regarding attitudes, the majority (74.2%) of respondents agreed or strongly agreed that trachoma is a health problem in their community, indicating a general awareness of the issue. Similar findings have also been reported in studies conducted in other countries. [19, 27, 29, 32] A considerable proportion (64.8%) agreed or strongly agreed that flies are the main vector of the disease, highlighting

a significant misconception about trachoma transmission, (59.1%) agreed or strongly agreed that trachoma is transmitted from person to person, indicating a partial understanding of transmission routes.[33, 34] (23.8%) agreed or strongly agreed that trachoma may eventually lead to blindness, suggesting a limited awareness of the potential severity of the disease.[35-37] A majority (56.5%) agreed or strongly agreed that hygiene and sanitation are important for preventing the disease, indicating some understanding of preventive measures. A large proportion (70.2%) agreed or strongly agreed that taking drugs was important for prevention and control, suggesting a positive perception of medical interventions. Overall Attitude: A significant proportion (80.9%) of the community demonstrated poor attitudes towards trachoma, characterized by misconceptions about transmission, limited awareness of potential consequences, and inadequate understanding of preventive measures. It is crucial to emphasize that medication is part of a comprehensive approach to trachoma control and should be used in conjunction with other preventive measures.[14, 38-40] Regarding practices, water source, and accessibility: the majority of the households (74.1%) had access to water sources within a 30-minute walk, Springs (29.8%) and wells (29.9%) were the common sources of domestic water.[41-43] Hygiene Practices: A significant proportion of households (67.1%) reported using enough water for bathing, and a significant proportion of households (86.2%) reported no presence of flies on children's faces.[44, 45]

Environmental Factors: The majority of households (84.8%) reported no presence of feces around the house. More than half of the households (53.5%) reported the presence of animals inside their houses.[32, 46, 47]

Reducing the burden of flies and improving environmental sanitation through proper disposal of human excreta are crucial for public health.[48] Waste Disposal: A substantial proportion of households (57.3%) reported proper solid and liquid waste disposal management. Latrine utilization was high, with 78.4% of the households reporting using a latrine[49, 50]

Overall Practices: A significant proportion (53.5%) of households demonstrated poor practices related to trachoma prevention.[18, 27]

Regarding multivariate knowledge, the study found that adequate trachoma knowledge was linked to several socioeconomic factors, including the age of the household head, parental literacy, father's occupation, and household wealth.

This suggests that socioeconomic disparities significantly influence knowledge levels within the community. The finding that female-headed households demonstrate higher levels of adequate knowledge is a significant observation and warrants further investigation.[51]

The strong association between good practices and adequate knowledge highlights the importance of promoting and reinforcing positive health behaviors within the community. Targeted interventions are needed to address the knowledge gaps among vulnerable populations, particularly those from low-income households and those with limited access to education.[52, 53]

Regarding multivariate attitudes, several socioeconomic factors, such as the age of the household head, household size, mother's literacy status, and father's occupation status, were significantly associated with attitudes towards trachoma.[31, 43] This suggests that socioeconomic disparities play a crucial role in shaping community attitudes.

The finding that households with good knowledge are less likely to have good attitudes towards trachoma is unexpected and warrants further investigation. Individuals with some knowledge may be more aware of the complexities of the disease and may have developed more nuanced (and potentially more negative) perspectives. Improving community knowledge about trachoma is crucial for fostering positive attitudes and promoting effective preventive behaviors. Interventions to improve attitudes towards trachoma should be tailored to address the specific needs and concerns of different population groups, such as younger heads of households and low-income households.

Regarding reparation multivariate practices, several socioeconomic factors, such as the age of the head of the household, the mother's literacy status, the father's occupation status, and household wealth, were significantly associated with good practices related to trachoma prevention.

This emphasizes the importance of addressing socioeconomic disparities to improve health outcomes. The strong association between good knowledge and good practices highlights the crucial role of health education in promoting positive health behaviors. The finding that maternal literacy is significantly associated with good practices underscores the importance of women's education in improving household health.

Trachoma prevention interventions should be tailored to address the specific needs and circumstances of different population groups such as low-income households and those with limited access to education.

5.2. Conclusion and Recommendation

Our study suggests that even in areas with low trachoma prevalence, community KAP regarding trachoma prevention and control must be enhanced to achieve elimination. This necessitates health education campaigns focused on the SAFE strategy implemented at the community level, during mass drug administration campaigns, and at health facilities. The aim was to increase knowledge, address cultural perceptions that hinder behavior change, and ultimately promote positive behaviors for trachoma prevention and control within communities. Interestingly, our findings revealed higher levels of knowledge among female-headed households, warranting further investigation of the factors contributing to this observation. Notably, we observed an association between good knowledge and less favorable attitudes toward trachoma prevention and control, suggesting the need for further research to understand this unexpected relationship and tailor interventions accordingly.

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