

Effectiveness of Health Education Program on Rural Mothers' Knowledge and Practice Regarding Blinding Trachoma among Their Children.

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Abstract

1. Background: - Trachoma is the second leading cause of blindness worldwide, continues to be hyper endemic in many areas of Africa, Asia, and the Middle East. It is a neglected disease which causes misery, dependency and is a barrier to development. **Aim of the study:** Evaluate the effect of health education program on rural mothers' knowledge and practice regarding blinding trachoma among their children. **Subjects and Methods: Study design:** - In this study a quasi – experimental study design was used. This study was conducted in Rural Health Unit in Cebrbay village affiliated to Ministry of Health in Tanta city, El-Gharbeya Governorate. A convenience sample of 100 rural mothers, having at least one child at age 1-6 years were included in the study. **Tools:** Three tools were used by the researcher in order to obtain the necessary data for the study as follows: **Tool I:** A structure questionnaire schedule which composed of three parts :Biosocial demographic characteristic, environmental data and past history of eye infection. **Tool II:** Modified social scale for family social leveling in rural community. **Tool III:** A structure questionnaire schedule of knowledge and reported practice of mother related to trachoma which composed of two parts. Mothers' knowledge about trachoma disease and mothers' self-reported practice regarding trachoma prevention. **Results:** A significant improvement in the knowledge and practice scores of the studied sample about trachoma was observed from preprogram, immediate and three month after program intervention. **Conclusion:** it can be concluded that the education program was effective and improved the level of rural mothers' knowledge and practice toward trachoma prevention. **Recommendations:** The present study recommended that, further studies and surveys are needed at national level in Egypt to detect the most affected areas and the actual magnitude of the problem. **Keywords:** Trachoma, blindness, SAFE strategy, Rural Health Unit.

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I. Introduction

Trachoma is a neglected disease, and also the world's leading infectious cause of blindness. It causes misery, dependency and is a barrier to development. Trachoma is the second leading cause of blindness worldwide, continues to be hyper endemic in many areas of Africa, Asia, and the Middle East. ^(1,2)

Trachoma is endemic in over 42 countries. It is generally confined to resource-limited settings in developing nations of Africa, the Middle East, Asia, Latin America, Pacific Islands, and remote Aboriginal communities in Australia. Worldwide, over 200 million people live in trachoma-endemic areas and 7.2 million live with advanced trachoma. ⁽¹⁻³⁾

Trachoma occurs in areas with overcrowded housing where personal and community hygiene are difficult to maintain. It caused by an ocular infection with *Chlamydia trachomatis*, this *Chlamydia trachomatis* bacterium is easily spread through infected eye secretions. These secretions are passed back and forth between young children during close contact such as playing and sharing the same bedding. Flies can also spread the bacterium. Children are the main reservoir of infection. Dirty faces are the most important risk factor in the transmission of trachoma ⁽¹⁻⁵⁾.

Trachoma infection can initially cause no symptoms or mild redness or discharge (conjunctivitis) which usually occurs 5-15 days after contact with an infected person. This chronic conjunctivitis results in more blindness than any other infectious eye disease. Diagnosis of trachoma is by clinical examination which shows pale round spots (follicles) or further changes on the inner surface of the upper eyelid ^(1,6).

Repeated infections, especially during childhood, may lead to scarring of the eyelid which can then cause the eyelashes to rub against the front of the eye (cornea). Scarring of the cornea can cause it to look white

or milky and is irreversible. The condition of in turned eyelashes is known as trichiasis and can lead to blindness if not corrected by surgery to prevent further damage^(1,6-8).

Trachoma is controlled by a World Health Organization(WHO) -endorsed integrated strategy of surgery for trichiasis, antibiotic therapy, facial cleanliness and environmental improvement, which is known by the acronym SAFE. The strategy is based on evidence from field trials and is continually being refined by operational research that informs national policy and planning; the strategy has affected both programme delivery and implementation. As a result of the findings of operational research, surgery is now frequently conducted by paramedics in communities rather than by ophthalmologists in hospitals; yearly mass distribution of a single oral dose of Azithromycin has replaced the use of topical Tetracycline; and the promotion of better hygiene, face-washing and the use of latrines are used to reduce transmission^(1,7,8).

Health education helps individuals and groups of people learn to behave in a manner conducive to the promotion, maintenance or restoration of health. The ultimate aim of health education is positive behavioral modification. A key part of preventing diseases like trachoma is promoting good hygienic practice, so educating rural mothers about the relation between hygiene and infection is vital^(1,7-9).

Community health nursing involves working with communities and populations as equal partners, and focusing on primary prevention and health promotion. Community health nurse has better awareness on common blinding trachoma than the general public and has significant role in primary eye care and blindness prevention activities⁽⁹⁾.

Aim of the study

This study aimed to evaluate the effect of health education program on rural mothers' knowledge and practice regarding blinding trachoma among their children.

Research hypothesis:

The application of health education program expected to change rural mothers' knowledge and practice regarding blinding trachoma among their children.

Subjects &Method:

Research design: A quasi- experimental research design was used in this study.

Setting:

The study was conducted in Rural Health Unit in Cebrbay village affiliated to Ministry of Health in Tanta city, El-Gharbeya Governorate.

Subjects:

A convenient sample of 100 rural mothers who attending the previous mentioned setting for any services provided at R.H.U(antenatal care, family planning, well baby follow up, and vaccination clinic) according to the schedule of work, and who were willing to participate in the study. The total sample size was 100 rural mothers, having at least one child at age 1-6 years was the only criteria for selecting the study sample.

Tools of the study:

Three tools were developed by the researcher after reviewing the related literature to collect the needed data.

Tool I: A structure questionnaire schedule

It composed of the following data:

a) Sociodemographic characteristic of the rural mothers: which include data about mother's age, marital status, level of education, occupation, family income, number of rooms, number of children, age of the youngest child, and father's education and occupation.

b) Environmental data: such as housing condition as regard availability of water supply, ventilation, presence of domestic animal, and the presence of sewage and refuse disposal system.

c) past history of eye infection: asprevious eye infection, if any medication taken for eye infection and the type and source of prescribed medication.

Tool II: Modified social scale for family social leveling in rural community :-

The family social level was determined according to Fahmy and Elsherbini(1983) modified social scale for rural family social leveling. This scale was developed by Fahmy and Elsherbini, to assess the socioeconomic status of the family. It assesses the family status according to seven items which include father's education and work, mother's education and work, monthly income, crowding index and sanitation. The total score of the social level is 46 points which distributed as follows:

- Education and work of father and mother = 24 points
- Percapita income/ month = 8 points
- Family size = 8 points

- Crowding index = 3 points
 - Sanitation = 3 points
- Social leveling will be determined according to the score obtained by the family as follows:-
- Less than 23 points, will be consider low social level.
 - From 23 to < 34, will be consider low middle social level.
 - From 34.5 to < 39, will be consider high middle social level.
 - From 39 to 46 points, will be consider high social level.

Tool III: A structure questionnaire schedule of knowledge and reported practice of mother related to trachoma :(pre-immediately after and after three month of program implementation):

This tool was developed by the researcher based on the literature review to assess mothers' knowledge and reported practice related to trachoma and its prevention⁽¹⁻³⁾. It composed of the following parts:

Part (1): Mothers' knowledge about trachoma disease. This part assesses the mothers' knowledge regarding trachoma such as mothers' knowledge regarding trachoma such as definition, Clinical picture, causes, mode of transmission, hygiene factors affecting trachoma, household risk factors associated with active trachoma, protective factors associated with active trachoma, symptoms, prevention of trachoma, treatment, complication, and source of information. this part compromised 11 questions the mothers response were categorized scored as follow :

- Complete and correct 2 point
- Incomplete correct 1point
- Incorrect/don't know 0 point

The scoring system for knowledge was as follow:

- A score of < 50% of total score indicate poor knowledge
- A score from 50%–< 70% of total score indicate fair knowledge
- While a score from 70%–100% of total score indicate good knowledge.

Part (2): Mothers' self reported practice regarding trachoma prevention:

This part assesses mothers' practice regarding trachoma prevention as:

A- Following the preventive measures as:-

- Facial cleanliness and hand washing behaviors
- Access to water and sanitation
- Domestic hygiene or indoor sanitation
- Taking treatment

The total scoring system for mothers' reported practice was as follow: this part compromised 30 questions(from q37 to q66) .each question was scored as follow :

- Done 1point
 - Not done 0 point
- Good practice if the percent score more than 70%.
 - Satisfactory if the percent score 60% or more.
 - Poor if the percent score less than 60%.

B- Barriers for not following preventive measures:

- Socio economic barriers as insufficient family income, large family size and lack of time.
- Environmental barriers as lack of water supply, lack of sewage and refuse disposal system and the house away from services.
- Barriers regarding medical services as shortage of staff and lack of their knowledge about disease.

II. Methods:

1. Obtaining approval:

Permission was granted from the Faculty of Nursing in Tanta university by official letter to the director of the rural health unit in Cebrbay village in order to obtain his acceptance to collect the data . Furthermore, an approval was obtained from the identified setting in order to get the relevant data necessary for conducting the study.

2. Developing the tools:

Study tools were developed by the researcher based on literature review. The developed tools were reviewed by the supervisors then introduced to a jury committee of five experts in the field of nursing and medicine, for testing the content validity.

3. Pilot Study:

A pilot study was then conducted on 10 rural mothers to test the study tool for its applicability and clarity and to determine the length of time needed to collect the data. Those mothers were excluded from the study samples. Based on the results obtained, the necessary modification was done. Some questions were omitted while others were added. The reliability of the study tool was assessed using cronbach's alpha test and found to be 0.749 indicating high reliability .

4. Ethical consideration:

- An informed consent was obtained from each mother included in the study after explanation of the aims of the study.
- Keeping the confidentiality and privacy of the information obtained from the study subject.

5. Developing the education program:-

The following steps were adopted to develop the program.

A-Formulating program objectives

General objective

The general objective of the program was to enable the rural mothers to gain knowledge helping them in early detection and prevention of blinding trachoma.

B-preparing and organizing the program content:

A review of the current and past available literature covering the various aspects of the problem, using textbooks, articles, magazines and internet search was done. This was necessary for the researcher to get oriented about aspects of the research problem and to assist in the development of data collection tools and preparation of health education program. Rural mothers' needs were determined in the pre program assessment. Based on the result obtained from the pre assessment as well as literature review, the health education program was developed

The content was organized in five sessions as follows:-

Session I: Program orientation and expectation. Time 30 minutes. The aim of this session is to orient the mothers about the importance of the program, its sessions and expectation of each session.

Specific objectives

By the end this session the mothers will be able to:

- Give an account on the intervention.
- Recall the general objectives of the intervention
- Identify the rest of sessions and its goals.

Session II: An overview of trachoma. Time 40 minutes. The aim of this session is to increase mother's knowledge about trachoma disease, orient the mothers about definition, prevalence of trachoma, causes, mode of transmission, and classification of trachoma.

Specific objectives

By the end this session the mothers will be able to:

- Define trachoma.
- Give short note about structure and function of human eye.
- List common eye disease.
- Recognize causes of trachoma.
- Discuss predisposing factor of blinding trachoma
- Identify the modes of trachoma transmission.
- Describe symptoms of trachoma.
- Mention high risk group.

Session III: Diagnosis and treatment of trachoma. Time 40 minutes. The aim of this session is to discuss with mothers diagnosis and different medication to treat trachoma disease.

Specific objectives

By the end of this session the mothers will be able to:

- Discuss the various type of tests used to diagnose trachoma.
- Differentiate between different grade of trachoma
- Realize complication of trachoma.
- Mention treatment medication of trachoma

- Mention how use medication

Session IV: prevention and control of trachoma. Time 40 minutes. The aim of this session is to clarify to the mothers how to implement SAFE strategy components especially facial cleanliness and environmental improvement to prevent trachoma.

Specific objectives

By the end of this session the mothers will be able to:

- Discuss prevention and control of trachoma.
- Apply preventive measure to prevent trachoma

Session V: WHO SAFE strategy. Time 30 minutes. The aim of this session is to increase mother's knowledge about meaning of four components of SAFE strategy to combat trachoma and treatment of trachoma

Specific objectives

By the end of this session the mothers will be able to:

- Recognize WHO SAFE strategy.
- Discuss four component of SAFE strategy.

C-Selecting teaching strategies

– **Teaching method:-**

Several teaching methods were used in this study which includes:-

- Lecture.

Lectures were presented in a concise manner and simple language, while lecturing is generally accepted as an effective form of instruction.

- Group discussion

Discussions enable learner to consider various viewpoints on a topic. Through the discussion, researcher can explore small aspects and details that might get ignored with other teaching approaches. Moreover, learners are often the ones through their own questions and comments drive the discussion deeper on a topic. In this way, learners engage at a level that helps ensure they fully comprehend the topic under discussion. Whether through group discussions, learners are all capable of actively participating in a discussion.

– **Audiovisual aids**

The following audiovisual materials were used to facilitate and help the process of learning include booklet, picture and power point presentation.

D- Implementation of the program

- The program was totally carried out by the researcher; this is to ensure providing complete, consistent and accurate knowledge about trachoma and practice regarding trachoma prevention.
- The field work of this study done in six months starting from July to the December 2016.
- The researcher was meeting with mothers at rural health unit three days per week (Saturday, Monday and Tuesday)
- Oral consent was obtained from the mothers whom accept to participate in the study.

The researcher introduced herself to each mother and explained the purpose and importance of the study to those included in the study and reassurance about the confidentiality of the information was given at the beginning of the interview. This helped to gain their cooperation and active participation during implementation of the program.

The researcher divided the program into five sessions. The duration of each session was 30-40 minutes.

Approximately the first ten minutes of each session were dedicated for social communication and discussion of the previous session. The last ten minutes of each session were dedicated for summarization of the discussed item and determine time of the next session.

Lectures, group discussion and demonstration were used as teaching methods and audiovisual material used in this study included booklets and power point.

The booklet which was designated by the researcher was given to the rural mothers to use it as source of information in the future.

E-Evaluation of the program:

Assessment was done to the rural mother in order to test knowledge and practice about trachoma. Evaluation of health education program impact was done by comparing knowledge and practice after implementation of the program.

- Evaluation was conducted three times:
 1. First time: before implementation of intervention using tool I, II and III (pre-test).
 2. Second time: immediately after the implementation of intervention (post-test) tool III parts 1 and 2.
 3. Third time: 3 month after the implementation of the intervention (follow-up evaluation) tool III parts 1 and 2.

6-Analysis of Data:

Statistical Analysis:

The collected data were organized, tabulated and statistically analyzed using SPSS version 19 (Statistical Package for Social Studies) created by IBM, Illinois, Chicago, USA. For numerical values the range mean and standard deviations were calculated. Differences of mean values of total knowledge and practice score before and after the intervention were tested using repeated measurements analysis of variance (F) and when found significant least significant test (LSD) test was used to compare between each two groups. For categorical variable the number and percentage were calculated and differences before and after intervention were tested using Friedman (Z) test or chi square test. The correlation between two variables was calculated using Pearson's correlation coefficient. The level of significant was adopted at $p < 0.05$.

Limitation of the study:

The most obvious obstacle faced the researcher was the difficulty to gather all participating mothers at the same time for each session. Therefore, some mothers take the educational session individually.

Results

Table 1: Presents the distribution of the studied groups according to their socio- demographic characteristics. This table reveals that slightly less than one half of the studied sample (41%) was aged from 25 to less than 30 years. Their ages ranged between 20- 39 and the mean age was 27.96 ± 4.95 and nearly all the studied sample (99%) was married. As for educational level of the mothers, the majority of them had secondary education. Moreover, the majority of studied sample were house wife (92%). Regarding to the crowding index, nearly all of the studied sample (97%) were had 2 member / room. This table also represents that more than one third of the studied sample (37%) have their youngest sibling aged from 1 to 5 years old. Additionally, the majority of husbands of the studied mothers had secondary education (88%) and working (89%). In relation to the family monthly income, more than two third of the studied sample (67%) had just enough income.

Table (2): Illustrates the distribution of study participants in relation to their knowledge of epidemiology of trachoma before and after intervention. The table show that the majority of the studied sample had incorrect answers as regard the definition, causes of trachoma and infectivity of trachoma (90%, 93%, 80%) respectively. It was clear that the mothers' knowledge was significantly improved immediately after implementation of the program for 100% of the study sample who had correct and complete answers of the definition, causes and infectivity of trachoma. This improvement of mothers' knowledge remain after three months of program implementation, where the majority of the studied sample had correct answers regarding the definition, causes and infectivity of trachoma (98%, 100%, and 95%) respectively, this difference was significantly at ($p = 0.001^*$).

As regard the mode of transmission, the highest frequencies (76%) had incorrect answers and about one fifth of them (21%) had incomplete correct answers before the program implementation. Significant improvement in mothers' knowledge was observed after the implementation of the program, where nearly all of them immediately after intervention and the majority of them after three months had complete correct answer (95%, 86%) respectively. This difference was statistically significant where ($P = 0.001$).

Figure (1): Depict the distribution of studied participants by their total level of knowledge before, immediate and three months after intervention. It was noticed that the majority of the studied sample (98%) had poor level of knowledge before implementation of the program compared to the majority of them immediately and after three months (100%, 96%) respectively had good level of knowledge, this difference was significantly at (0.001^*).

Table (3): Demonstrates the distribution of studied participants in relation to their personal hygiene practice to prevent eye diseases before, immediately and three months after intervention. It was noticed that the majority of the studied sample (85%) were washed their hand before and after eating compared to 100% of them at immediately after and also 100% of them after three months, this practice had improved significantly immediately and three months after program implementation ($p = 0.001^*$). About one half of the studied group

(51%) were washed their hand after toilet before intervention compared to 100% of them at immediately after and the majority of them (95%) after three months, this difference was significantly at (0.001*).

More than two thirds of the studied sample (62%) were washed their hand before food preparation before intervention compared to all of them at immediately after and after three months(100%,100%)respectively, this difference was significantly at (0.001*). While only 10% of the studied group were washed their hand before cleaning child eyes before intervention compared to 100% of them at immediately after and the majority of them(95%) after three months, this difference was significantly at (0.001*). The table also noticed that only 9% of the studied group was washed their child face by soap and water before intervention compared to 100% of them immediately after and 92% of them after three months, this difference was significantly at (0.001*). About one third (30%) of the studied group was washed their child hands and face with soap and water daily before intervention compared to all of them(100%) immediately after and 100% after three months, this difference was significantly at (0.001*).

Less than one third (24%) of the studied group was washed their child face and hand more than three times daily before intervention compared to all of them(100%) immediately after and the majority of them(91%) after three months, this practice had improved significantly immediately and three months after program implementation (p=0.001*).

This table showed that only 8% of the studied group were used special towel for each family member before intervention compared to the majority of them of them at immediately after and after three months(93%,89%)respectively, this difference was significantly at (0.001*). Also, 9% of the studied group was used water sedimentation or boiling it before use compared to 15% of them immediately after and 16% of the after three months, this difference was significantly at (0.001*).

Table (4):Illustrates the distribution of studied participants by their level of practice before, immediate and three months after intervention. It was observed that 13% of the studied group was satisfied regarding to their level of practice before intervention compared to 100% of them at immediately after and 98% of them after three months, , this difference was significantly at (0.001*).

Table (5):Illustrates the correlation between total score of knowledge, practice and total score of social leveling. It was found that, the total score of mothers knowledge was significantly and positively correlated to the total score of their reported practice(r=0.462 and p=0.001). On the other hand, insignificant and negative correlation was observed between the total practice score and the total score of social leveling (r=-0.125 and p=0.216) while positive and insignificant correlation was observed between total score of knowledge and total score of social leveling(r=0.108 and p=0.285).

Table 1: Distribution of the studied sample according to their socio- demographic characteristics.

Socio- demographic characteristics.	The studied sample (n=100)	
	N	%
Mothers' age in years		
20-	24	24.0
25-	41	41.0
30-	26	26.0
35-	9	9.0
Range	20-39	
Mean±SD	27.96±4.95	
Marital status		
Married	99	99.0
Widow	1	1.0
Mothers' educational level:		
Illiterate	4	4.0
Secondary	83	83.0
University	13	13.0
Mothers' job		
Working	8	8.0
House wife	92	92.0
Crowding index:		
< 2 / room	3	3.0
2 / room	97	97.0
Age of youngest sibling in years:		
Less than 1 year	35	35.0
1 to 5 years	37	37.0
More than 5 years	28	28.0
Husband educational level		
Illiterate	6	6.0

Secondary University	88 6	88.0 6.0
Husband job		
Working	89	89.0
Not working	11	11.0
Family monthly income:		
Enough	18	18.0
Just enough	67	67.0
Not enough	15	15.0

Table (2): Distribution of study participants in relation to their knowledge of epidemiology of trachoma before, immediate and three months after intervention.

Knowledge item	Complete correct answers						Z	P
	Before intervention		Immediately after intervention		After three months of intervention			
	N	%	N	%	N	%		
Definition of trachoma							176.08	0.001*
Incorrect	90	90.0	0	0.0	2	2.0		
Complete correct	10	10.0	100	100.0	98	98.0		
Cause of trachoma							186.00	0.001*
Incorrect	93	93.0	0	0.0	0	0.0		
Complete correct	7	7.0	100	100.0	100	100.0		
Trachoma is infectious							141.76	0.001*
Incorrect	80	80.0	0	0.0	5	5.0		
Complete correct	20	20.0	100	100.0	95	95.0		
Mode of transmission							159.13	0.001*
Incorrect	76	76.0	0	0.0	5	5.0		
Incomplete correct	21	21.0	5	5.0	9	9.0		
Complete correct	3	3.0	95	95.0	86	86.0		

*Significant (p=0.001)

Figure (1): The studied participants by their level of knowledge before, immediate and three months after intervention.

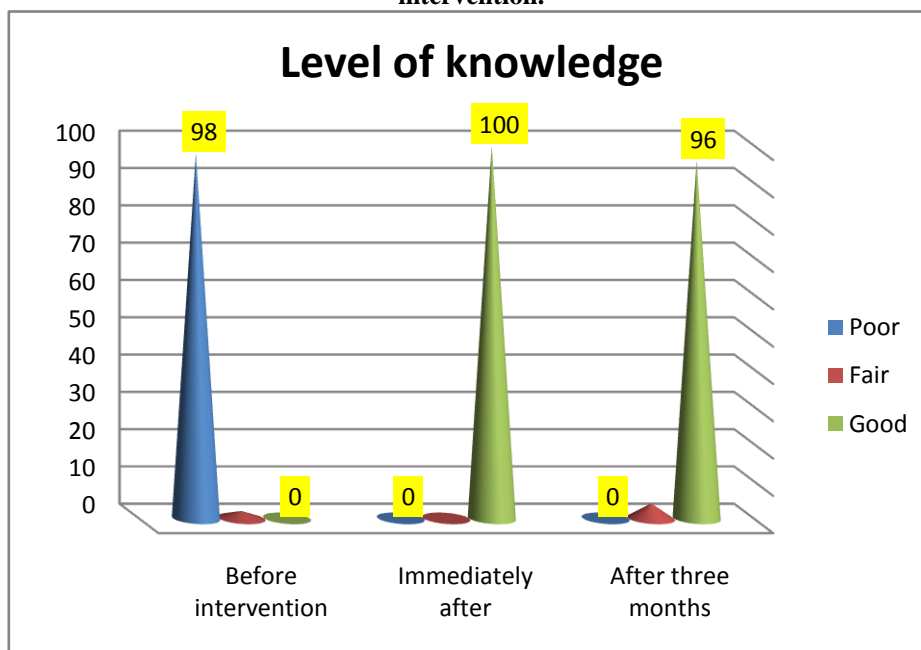


Table (3): Distribution of studied participants in relation to their personal hygiene practice to prevent eye diseases before, immediate and three months after intervention.

Preventive measures	Before intervention		Immediately after intervention		After three months of intervention		X ²	P
	N	%	N	%	N	%		
Hand washing before and after eating								
Done	85	85.0	100	100.0	100	100.0	30.0	0.001*
Not done	15	15.0	0	0.0	0	0.0		
Washing hands after toilet								
Done	51	51.0	100	100.0	95	95.0	85.5	0.001*
Not done	49	49.0	0	0.0	5	5.0		
Washing hands before food preparation								
Done	62	62.0	100	100.0	100	100.0	76.0	0.001*
Not done	38	38.0	0	0.0	0	0.0		
Washing hand before cleaning child eyes								
Done	10	10.0	100	100.0	95	95.0	170.6	0.001*
Not done	90	90.0	0	0.0	5	5.0		
Washing child face by soap & water								
Done	9	9.0	100	100.0	92	92.0	167.4	0.001*
Not done	91	91.0	0	0.0	8	8.0		
Child wash hands and face with soap and water daily								
Done	30	30.0	100	100.0	100	100.0	140.0	0.001*
Not done	70	70.0	0	0.0	0	0.0		
Face and hand washing more than three times daily								
Done	24	24.0	100	100.0	91	91.0	136.1	0.001*
Not done	78	78.0	0	0.0	9	9.0		
Special towel for each family member								
Done	8	8.0	93	93.0	89	89.0	151.7	0.001*
Not done	92	92.0	7	7.0	11	11.0		
Water sedimentation or boiling before use								
Done	9	9.0	15	15.0	16	16.0	3.4	0.179
Not done	91	91.0	85	85.0	84	84.0		

*Significant (p=0.001)

Table 4: Distribution of studied participants by their level of practice before, immediate and three months after intervention.

Level of practice	Before intervention	Immediately after intervention	After three months of intervention
Poor	87	0	0
Satisfied	13	100	98
Good	0	0	2
Range	23-60	60-73	57-77
Mean±SD	38.40±8.10	69.20±2.51	68.00±3.64
F	933.595		
P	0.001*		
LSD	<ul style="list-style-type: none"> • Before intervention significantly different form immediately after • Before intervention significantly different form after three months • Immediately after significantly different from after three months 		

*Significant (p=0.001)

Table5: Correlation between total score of knowledge, practice and total score of social leveling.

Variables	Total score of social class		Total knowledge score	
	R	P	R	P
Knowledge	0.108	0.285	-----	-----
Practice	-0.125	0.216	0.462	0.001*

III. Discussion

Trachoma is one of the neglected tropical infectious diseases and a leading cause of preventable blindness found among the poorest of the communities in the world. Neglected tropical diseases (NTDs) are one of the key areas of concern for our society. These communicable diseases affect an estimated one billion people globally, primarily poor populations living in tropical and subtropical climates, with children being the most vulnerable to infection ⁽¹⁰⁾.

Control efforts of trachoma have largely focused on the antibiotic treatment (A) and surgery (S) components of the World Health Organizations (WHO) SAFE strategy. Although S and A efforts have had a positive impact, this approach may not be sustainable ⁽¹¹⁾. Consequently, this study focuses on the latter two primary prevention components; facial cleanliness (F) and environmental improvement (E). So, the present study was carried out to evaluate the effect of health education program on rural mothers' knowledge and practice regarding blinding trachoma among their children. The study results lead to the acceptance of the hypothesis since mothers knowledge highly improved and their practice has also improved after implementation of the health education program .

Regarding socio demographic characteristics of the studied mothers, the result of the present study revealed that the majority of mothers had secondary education. While the level of education in a community is very important particularly from the point of view of control program, so as to choose the suitable methods that can fit the studied communities. Several studies found that the average number of total and active trachoma cases per household, in this research, the majority of studied sample were household. As regards crowding index, it was noticed that two or more person per room. The prevalence and severity of trachoma were higher compared with smaller families ⁽¹²⁾.

As regards environmental condition, Water availability and safety was reported as important factors in the transmission of trachoma ⁽¹²⁾. The current study revealed that the majority of the studied samples depended on tank water and more than two third of them had animals and birds in their home. This result is agreement with **Nyamwaro C(2016)** in a study conducted in Kenya about Prevalence and risk factors for trachoma infection among children aged 1-9 years old in oldonyonyokie location revealed that more than half of the respondents in the study area keep animals either in the living rooms or within their compounds ⁽¹³⁾ .

In relation to knowledge of the studied mothers about epidemiology of trachoma. It was obvious from the result of the present study in pre test assessment of their knowledge revealed that the majority of the studied samples don't know the definition, causes and trachoma is infective. Immediate and three months post program intervention show significant improve in their knowledge regarding previous mentioned item ($p=0.001^*$) respectively. Similarly in a study done in Kenya by **Muntguti et al.,(2016)** about knowledge, practices and perceptions of trachoma and its' influence on health seeking behavior of patients, who found that child caretakers did not know signs and symptoms of trachoma ,but four out of ten of them did not know the causes of trachoma ⁽¹⁴⁾. This was supported by **Fiona Det al., (2016)** in a study done in the Northern Territory who found that the response from schools and community work places was much lower but increased in the post-intervention survey after the introduction of resources kits and other health promotion in their area. Most participants (94.8%) from the three settings overall could correctly define trachoma and knew it could lead to blindness ⁽¹⁵⁾ .

The finding of the present study come in disagreed with **Njomo D et al.,(2016)** in a study conducted in Kenya about Knowledge, practices and perceptions of trachoma and its control among communities of Narok County who found that majority of the community members are aware that trachoma is an eye disease ,causes and trachoma is infective . The difference between present study and this study may be due to this study was conducted in Narok district. While a baseline trachoma prevalence survey was conducted in the district in 2004, the entire district was trachoma endemic and implementation of the full SAFE strategy commenced in 2008 ⁽¹⁶⁾.

The result of the current study come in agreement with **Gonzales M et al.,(2017)** in a study done in Rural Southern Ethiopia about evaluation of a short term education program who reported that most significant increases in knowledge were identified in the areas related to the etiology and definition trachoma after implication of trachoma education project ⁽¹⁷⁾.

The result of the present study, in relation to mode of transmission of trachoma the pretest showed that the three quarters had incorrect answer and about one fifth of them had incomplete correct answer before program implementation. Significant improvement in mothers knowledge was observed after the implementation of the program where nearly all of them immediately after intervention and the majority of them after three months had complete correct answer about mode of transmission of trachoma ($p==0.001^*$) . The result of the present study agreed with **Saeed M (2010)** in a study conducted in HaiElbaraka, Khartoum about Knowledge, Attitude, and Practices among Mothers toward Trachoma in HaiElbaraka East Nile Locality who reported that(78) of study group don't know mode of transmission in pre test⁽¹⁷⁾. The result of the current study also come in agreement with **Gonzales Met al.,(2017)** who reported that most significant increases in

knowledge were identified in the areas related to mode of transmission of trachoma after implication of trachoma education project⁽¹⁸⁾.

Significant improvement in the mean total percent score of mothers' knowledge about trachoma at the end of health educational program. This study is supported by **Travers A et al. (2013)** who found totally improvement in knowledge score after health education campaign⁽¹⁹⁾.

Poor practices are important risk factors in sustaining trachoma infection and transmission. The practices that contributed to transmission of infection included: failure to wash faces and bathe regularly, sharing of water basins and towels for face washing, traditional methods of trachoma treatment and dirty household environment. Hygiene and environmental improvement are of the most importance in health promotion and are essential for the long-term sustainability of trachoma control. Community members require health education for behavior change and awareness creation⁽²⁰⁾.

Regarding self reported practice of the studied participants regarding trachoma prevention, in relation to personal hygienic practice as (hand washing, washing child face, special towel for each family member and clean water to prevent trachoma. The current study revealed that there was a statistical significant difference between the studied sample pre, immediate and three month post program intervention. **Fiona D et al., (2016)** who mentioned that significant differences were found for all three main outcomes of interest post-intervention. The overall proportion of participants reporting the key health promotion to prevent trachoma transmission⁽¹⁵⁾.

Immediately and three month after implementation of the health educational program, there was significant improvement in the mean total percent score of mothers practice about trachoma. This result of the present study agree with **Ng'etich S (2015)** who found that improve eye care seeking practices through community participation in educational programs⁽¹⁶²⁾.

The current study revealed that the total score of mothers knowledge was significantly and positively correlated to the total score of their reported practice ($r=0.462$ and $p=0.001$). This finding highlights the need of knowledge as a pre requisites for practice improvement. The finding of the present study come in the same with **Belaynew W et al (2014)** in a study conducted in Ethiopia about knowledge and practice on childhood blindness among communities who found that the practice of participants towards childhood blindness prevention is associated with their knowledge⁽²¹⁾.

IV. Recommendations

1. Health education about eye health should be an essential part of primary health care services particularly in rural communities.
2. Health education campaigns concerning trachoma ought to be delivered through mass media such as television, posters and pamphlets.
3. Health education programs directed towards control of communicable eye diseases should be planned and implemented through school health curriculum.
4. Community participation and self-reliance should be enforced. Community leaders must be identified in all areas and become actively involved in community health education programs as well as in other component of primary health care services.
5. Domiciliary visits should be adequately performed by primary health care service in rural area.
6. Further studies and surveys are needed at national level in Egypt to detect the most affected areas and the actual magnitude of the problem.

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