

Educational Health Program for Mothers regarding Care of Their Preschool Children with Trachoma in Benha City

Shimaa.S.Abd Elatey, Hanaa.A.Abd El-Megeed, Ahlam.E.Mohammed and Mona.A.Abd El-Mordy

Assistant Professor of Community Health Nursing, Faculty of Nursing, Benha University, Egypt.

E-mail: shimaa657o@gmail.com

Abstract

Background: Trachoma is an infectious disease; it begins in early childhood with repeated infection of the conjunctiva by *Chlamydia trachomatis*. **Aim:** The present study aimed to evaluate the effect of educational health program for mothers regarding care of their preschool children with trachoma in Benha City. **Design:** A quasi-experimental study design was used. **Setting:** The study was conducted in Outpatient Clinics at Ophthalmic Hospital in Benha City. **Sample:** Simple random sample of 271 mothers was included in the study within 3 months. **Tools:** Two tools were used to collect data; **Tool (I):** A structured interviewing questionnaire: Which divided into two parts; **Part I** included four items: Demographic characteristics of the studied mothers, personal characteristics of the studied children, health history of trachoma and environmental assessment as reported by mothers, **Part II** included knowledge of the studied mothers regarding trachoma and its prevention, **Tool (II):** Mothers reported practices regarding trachoma. **Results:** The study clarified that 34% of the studied mothers having preschool children aged 35 - < 40 years old with mean \pm SD was 39.31 \pm 9.03, 72.7% of them were married, 56.1% of them didn't work and 39.1% of the studied mothers not read and not write. 64.2% of the mothers had totally adequate knowledge and 91.9% of them had satisfactory totally reported practices for caring for their preschoolers with trachoma post program implementation. **Conclusion:** Utilization of health educational program achieving significant improvements in mothers' knowledge and practices. Also, there was a positive correlation between total scores of knowledge and reported practices. **Recommendations:** Continuous health promotion, health education models as well as screening in all community settings for early detection, prevention and management of trachoma through disseminating booklets.

Keywords: Educational program, Mothers, Preschool children, Trachoma.

Introduction

Trachoma, a neglected tropical disease, is an infectious eye disease caused by an obligate intracellular Gram negative bacterium called *Chlamydia trachomatis* types A, B, Ba and C. Disease affects mostly children aged one to nine years. Children are frequently infected with *Chlamydia trachomatis* due to their tendency to have close contact with others and constantly rubbing their eyes. Active blinding trachoma has 60-90% prevalence among preschool children in endemic regions. Additionally, with increasing age, frequency and duration of infection becomes less frequent, blinding trachoma trichiasis symptoms appears as; constant eye pain, light intolerance, corneal scarring, irreversible opacities and blindness [1].

Active trachoma has 60-90% prevalence among preschool children in endemic regions. Globally, 27.8 million children are suffering from active blinding trachoma and Africa is the most affected continent with 12.4 million (68.5%) children affected [2].

Trachoma occurs in fields with bad personal and family hygiene, many mode of transmission, including lack of sanitation, lack of latrines or toilets; poverty in general, flies, closes proximity to cattle, crowding and so on and is indirectly related to the presence of trachoma. The final common pathway, however, seems to be the presence of dirty faces in children that encourages the regular exchange from one child's face to another of contaminated ocular discharge. Most transmission of trachoma occurs within the family [3].

World Health Organization (WHO) has endorsed an integrated strategy known as SAFE: Surgery for people at immediate risk of blindness, Antibiotic therapy to

treat individual active cases and reduce the community reservoir of infection, Facial cleanliness and improved hygiene to reduce transmission and Environmental improvements to make living conditions better so that the environment no longer facilitates the maintenance and transmission of trachoma These four components form the foundation of the effort to eliminate blinding trachoma. All four components must be presented for a trachoma control program to be successful. That is, equal attention must be given to providing surgery, antibiotics, hygiene promotion, and environmental improvements [4].

Mothers have more significant role in caring for children with active blinding trachoma infection and being responsible for health of their children. Mothers play role in completing domestic tasks as house environmental cleaning and control of insects, caring for sick children and also they are responsible for cleanliness and disease prevention. Additionally mothers are responsible for care for their children with blinding trachoma including giving medications and keeping children' personal hygiene [5].

Community health nurses have an important role in caring children with blinding trachoma in identifying and diagnosing the disease, nurses also, should give health education to the caregiver about the disease. Nurses educate mothers giving oral antibiotics and topical eye drops and provide advice to parents on keeping their children's personal hygiene particularly face clean. The nurses confirm on hand hygiene for children and mothers and encourage children and their families to prevent spread of the infection through avoidance of sharing of towels and other personal

equipment, improving cleanliness of house environment, proper disposal of animal waste and control of insects [6].

Significant of the study:

Blinding trachoma has a negative impact on the life of the affected children, their families and communities. Blinding trachoma has further disadvantages on children in low-income countries when it interrupts their education. Children who suffer pain or vision problems as a result of repeat infections face significant barriers to learning as they grow up; affecting their ability to lead healthy, productive futures. It cause disability, dependency and poverty and it is a barrier to development. Economically, there is a huge loss in productivity; the disease exacerbates poverty as it diminishes the financial viability [7].

Egyptian study done by [8] conducted in the Rural Health Unit (RHU) in the village of Cebrbay affiliated with the Ministry of Health in Tanta Region, El-Gharbeya Governorate, which evaluated the impact of the health education program on the knowledge and practice of rural mothers regarding blinding trachoma among their children, recorded that 98.0 percent and 87.0 percent of the sample studied before the educational program had low level of knowledge and poor practice.

Also, [9], the Trachomatous inflammation-Follicular (TF) prevalence was reported to be about 10% in four districts of Menia and Bani Suef Governorates. TF prevalence was 8.5% in Matai. Three annual rounds of Mass Drug Administration (MDA) plus measures to ensure facial cleanliness and enhance the atmosphere should be handled by Abu Quorquas, Deir Mawass, and El fashn, based on WHO guidelines, until a repeat prevalence survey 6-12 months after the third MDA round.

Aim of the study

This study aimed to evaluate the effect of educational health program for mothers regarding care of their preschool children with trachoma in Benha City

Research hypothesis:

Knowledge and practices of mothers regarding care of their preschool children with trachoma will be increased after implementing the educational health program.

Subjects and Method

Research design:

A quasi experimental research design was utilized for conducting this study.

Research setting:

The present study was conducted in the outpatient clinics at Benha Ophthalmic Hospital that affiliated to the Egyptian Ministry of Health and Population. The study was conducted at clinic number 1 which located at the first floor of the hospital and consists of two rooms

where children with ophthalmic disorders from Benha City and the surrounding villages receiving treatment and follow up.

Sampling:

Simple random sample of 271 mothers with preschool children attending the previous setting for 3months excluded mothers having children with other eye disease.

Tools of data collection:

Two tools were used to collect data:

Tool (I): A structured interviewing questionnaire was developed by the researcher to collect data, under supervision staff based on reviewing related literatures and expert opinions and written in simple Arabic language and it was consisted of two parts:-

Part I: Included four items:

A- Demographic characteristics of the studied mothers having preschool children and it consisted of 8 closed ended questions (Questions No. 1-8) about age, marital status, educational level of the mother, occupation of the mother, place of residence, number of family members, number of house rooms and family monthly income.

B- Personal characteristics of the studied children and it consisted of 4 closed end questions (Question No. 9-12) include (age, gender, child ranking and enrolling the child in the nursery).

C- Medical history of trachoma and it consisted of 6 closed end questions (Question No. 13-18), such as (previous infection of child with trachoma, duration of child infected with trachoma, symptoms appeared on the child when suffering from trachoma, Previous infection of family members with trachoma, person who previously infected in the family with trachoma and methods of treatment).

D-Environmental assessment part as reported by mother: it consisted of 10 closed end questions (Question No. 19-28) such as (type of house building, availability of animal barn, level of ventilation, source of water supply, source of light, level of house light, ways to dispose of household waste, type of bathroom and kitchen and level of house cleanliness).

Part II: Included knowledge of mothers having preschool children about trachoma and its prevention pre and post program implementation and included 14 questions (Question No. 29-42).

Scoring system:

A scoring system for mothers' knowledge was calculated as follows (2) score for correct complete answer, while (1) score for correct incomplete answer, and (0) for don't know or incorrect answer, mothers source of knowledge was excluded from the scoring system . For each section of knowledge, the total scores of the items were summed up and the total divided by the number of the items, giving a mean score for the part. These scores were converted into a percent score.

The total score was converted into percentage and construed as follows:

- Good knowledge $\geq 75\%$ (≥ 20 scores).
- Average knowledge $50\% - < 75\%$ ($13 - < 20$ scores).
- Poor knowledge $< 50\%$ (< 13 scores).

Tool II: Included mothers' reported practice regarding prevention of trachoma pre and post program implementation

Scoring system:

The scoring system for mothers' reported practices was calculated as follows (1) score for done and (0) for not done practicing. The total score of the items was summed-up and the total divided by the number of the items, giving a mean score. The total score was converted into percentage and construed as follows:

- Satisfactory practice $\geq 60\%$ (≥ 26 scores)
- Unsatisfactory practice $< 60\%$ (< 26 scores)

Content validity of the tools:

Content validity of the tools was done by five of Faculty's Staff Nursing experts from the Community Health Nursing Specialties who reviewed the tools for clarity, relevance, comprehensiveness and applicability and give their opinion.

Reliability of the tools:

Reliability of the study tools were tested for its internal consistency by Cronbach's Alpha. Reliability of the study tools was 0.831 for knowledge and 0.724 for the reported practices.

-Preparatory phase:

Preparation of the study design and data collection tools was based on extensive review of the current and past available national and international references related literature about trachoma by using a journal, textbooks and internet search to contrast the tools. This was necessary for the researcher to be acquainted with and oriented about aspects of the research problem as well as to assist in the development of data collection tools. Also prepared handout for studied mothers that included all items about trachoma, this took about two months for preparing the tools.

-Ethical considerations:

All ethical consideration was issued; oral consent was being obtained from each mother having preschool children before conducting the interview and given them a brief orientation to the purpose of the study. They were also reassured that all information gathered would be in a confidential manner and used only for the purpose of the study. No names were required on the forms to ensure anonymity and confidentiality. They were also informed about their right to withdraw at any time from the study without giving any reasons.

-Pilot study:

The pilot study was conducted on 10% from the total study sample about 27mothers who were taken in 4

weeks on March 2022. The pilot study was aimed to test the content, clarity, applicability and simplicity of the tool using the interviewing questionnaire and the observational checklist as a pre-test sheet. The estimation of the time needed to fill the questionnaire time needed to fill each sheet consumed about 30 - 45 minutes. No modifications were done, so the pilot

Educational Program construction included three phases:-

Phase (I): Assessment:

In this phase of the educational program, the researcher assessed knowledge and practices of the studied mothers through collection and analysis of baseline data from the filled tools. In this phase the researcher did the pre- test.

Phase (II): Program implementation:

Program implementation based on conducting session plans using different educational methods and media in addition to the use of guiding booklet. Time was opened for mothers to ask questions and to receive the corresponding answers as well as to express their feedback toward the teaching session. Educational media was used the poster, laptop, guidance booklet which includes instruction and information for mothers as a reference during and after program implementation. Teaching material was used Arabic booklet and audiovisual materials.

-Field work:

Data were collected about 3 months from the beginning of May 2022 to the end of July 2022. The study was carried out by the researcher for the studied sample in the selected setting of outpatient clinic in Benha Ophthalmic Hospital in Benha City. In the first and second week, the researcher visited the previous setting three days per week (Saturday, Tuesday and Wednesday) from 9:00 am to 1:00 pm. The researcher select these days because increasing the frequency of mothers in these days and these days appropriate for researcher. The average time needed for the sheet was around 30minutes, the average number interviewed at the ophthalmic outpatient clinic were 7-8 mothers/day depending on the responses of the mothers and took their phone number to communicate them for post program. The third week, the researcher implemented the educational program using teaching methods and filled out the post program questionnaire by the previously selected cases in the first week. The fourth week, the researcher called the mothers to complete the post program checklist about the knowledge and reported practices regarding prevention of trachoma. These steps repeated in the rest weeks from 3 months. The total sample included 271 of mothers' with preschool children with trachoma.

Objective of the program:

General aim of the program: By the end of the educational health program, the mothers having preschool children will be able to discuss knowledge and practices regarding care of trachoma.

Specific objectives:

By the end of each session mothers having preschool children should be able to:

The theoretical part includes:

- Identify the anatomy and function of eye.
- Identify definition of trachoma.
- Enumerate causes of trachoma infection.
- List risk factors of trachoma.
- Discuss modes of transmission of trachoma.
- Describe signs and symptoms of trachoma.
- Explain diagnosis of trachoma.
- Identify complication of trachoma.
- Mention methods of treatment of trachoma.
- Discuss methods of care and prevention of trachoma.

The practical part includes:

- Apply routine hand washing
- Demonstrate personal hygiene practices
- Apply eye hygiene practices
- Demonstrate environmental hygiene practices.

Program sessions

Time allowed: 6 hours has been allocated for health education sessions (30-45 minute for each session). 4 theoretical sessions and 5 practical sessions.

At the beginning of the first session, an orientation about the program and its purposes was given. It was agreed at the time of the sessions with the mothers. From the second session each session started by a summary about what was given through the previous sessions and objectives of the new one.

By the end of each session a summary were made and time allocated for questions and answers& plan for next session were made. Except for the last session a termination of sessions through feedback was done.

Program booklet

A booklet including all content of the program was designed and given to mothers as an educational reference during program implementation and as self-learning reference after program implementation. Its aim was providing accurate knowledge & practice related guideline instructions about trachoma, modes of transmission and its preventive measures.

Phase III: Program evaluation:

This phase aimed to evaluate the level of improvement in mothers' knowledge and practices through implementation of program. This was done through giving post-test similar to the pre-test, evaluation administered to study subjects after completion of the program in order to estimate the effect of program on mothers' knowledge and practices related to care of their preschool children with trachoma. study sample was included in the total sample.

Administrative approval:

Official letter was issued with permission for conduction this study from Dean of Faculty of Nursing,

Benha University to the Director of Benha University Hospital in Benha City. Oral consent was being obtained from each mother having preschool children before conducting the interview, the title, objectives, study technique and tools were illustrated for cooperation.

Statistical analysis:

All data collected were organized, tabulated and analyzed using appropriate statistical test. The data were analyzed by using the Statistical Package for Social Science (SPSS) version 21 which was applied to calculate frequencies and percentage, mean and standard deviation, as well as test statistical significance and associations by using Chi- square test (χ^2) and linear correlation coefficient (r) and matrix correlation to detect the relation between the variables (P value).

Significance levels were considered as follows:

- Highly statistically significant $P < 0.001^{**}$
- Statistically significant $P < 0.05^*$
- Not significant $P > 0.05$

Results

Table (1): Shows that; 34% of the studied mothers having preschool children aged 35 - < 40 years old with mean \pm SD was 39.31 ± 9.03 , 72.7% of them were married and 56.1% of them didn't work.

Table (2): Demonstrates that; 50.6% of studied children aged 4 - < 5 years old and 36.5% of them ranked the second member between their siblings. 64.2% of them didn't go to the nursery.

Figure (1): Demonstrate that; 43.2% of the studied mothers had sanitary total environmental assessment score, while only 56.8% of them had unsanitary total environmental assessment score.

Figure (2): Clarifies that; 8.1% the studied mothers had good total knowledge score preprogram, but post program increased to 50.6%. While, 61.6% of them had poor total knowledge score preprogram, but post program decreased to 3.6%.

Figure (3): Illustrates that; only 33.9% of the studied mothers had satisfactory total reported practices about care of trachoma preprogram which increased to 90.8% post program implementation.

Table (3): Clears that, there was highly statistically significant difference ($p < 0.01$) between the studied mothers' total knowledge score about trachoma and all items of their demographic characteristics ($p > 0.05$) pre and post program implementation.

Table (4): Proves that, there was highly statistically significant difference ($p < 0.01$) between the studied mothers' total reported practices and all their demographic characteristics ($p > 0.05$) except marital status ($P < 0.05$) post program implementation.

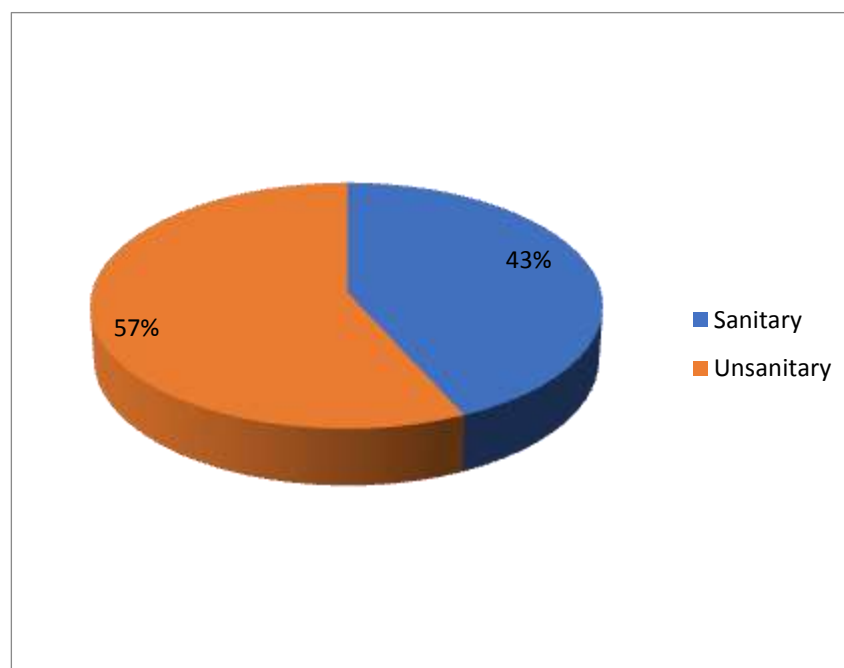
Table (5): indicates that; there was highly significant positive correlation between the studied mothers' total knowledge score and their total reported practices score pre and post program implementation.

Table (1) Frequency distribution of the studied mothers having preschool children according to their demographic characteristics (n=271)

Demographic characteristics	No.	%
Age/ years		
< 25	12	4.4
25 - < 30	38	14.0
30 - < 35	42	15.5
35 - < 40	<u>92</u>	<u>34.0</u>
40 +	87	32.1
Mean ± SD	39.31±9.03	
Marital status:-		
Married	<u>197</u>	<u>72.7</u>
Widowed	55	20.3
Divorced	19	7.0
Occupation of the mother:-		
Working	119	43.9
Not working	<u>152</u>	<u>56.1</u>

Table (2) Frequency distribution of the studied children according to their personal characteristics. (n=271)

Personal characteristics	No.	%
Age/ years		
3 - < 4	131	48.3
4 - < 5	<u>137</u>	<u>50.6</u>
5 - < 6	3	1.1
Child ranking:		
The first	72	26.6
The second	<u>99</u>	<u>36.5</u>
The third	59	21
The fourth	25	9.2
The fifth and more	16	5.9
Nursery:		
Going to the nursery	97	35.8
Don't go to the nursery	<u>174</u>	<u>64.2</u>

**Fig. (1)** Percentage distribution of the studied mothers regarding total scores of environmental assessment (n=271).

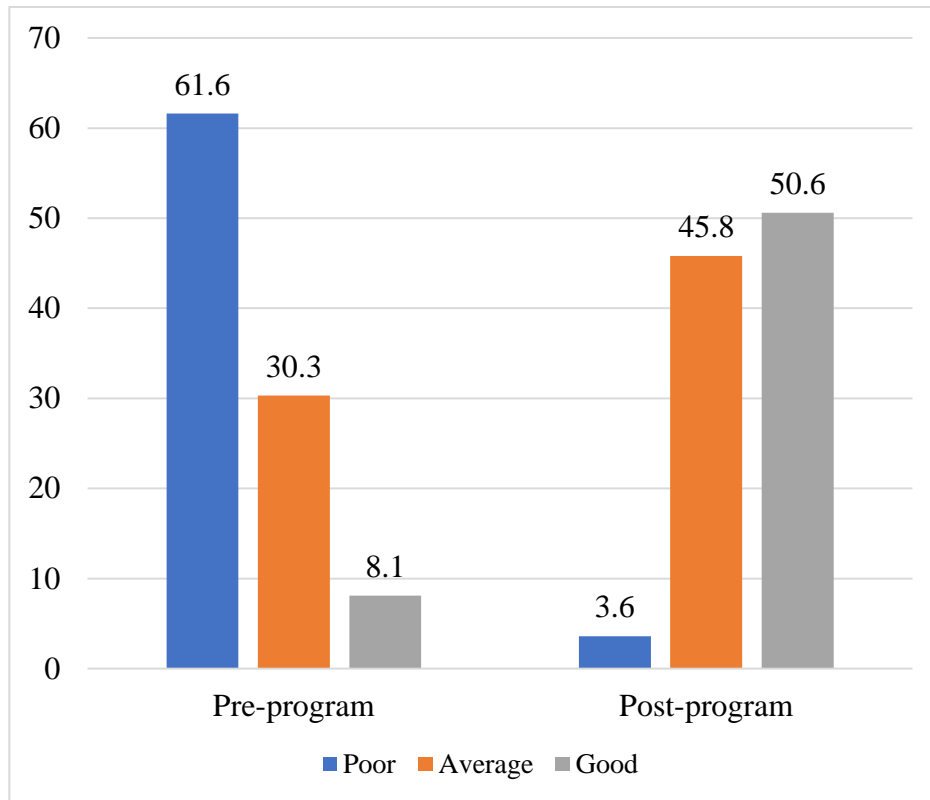


Fig. (2) Percentage distribution of the studied mothers regarding to their total knowledge score about trachoma pre and post program implementation (n = 271).

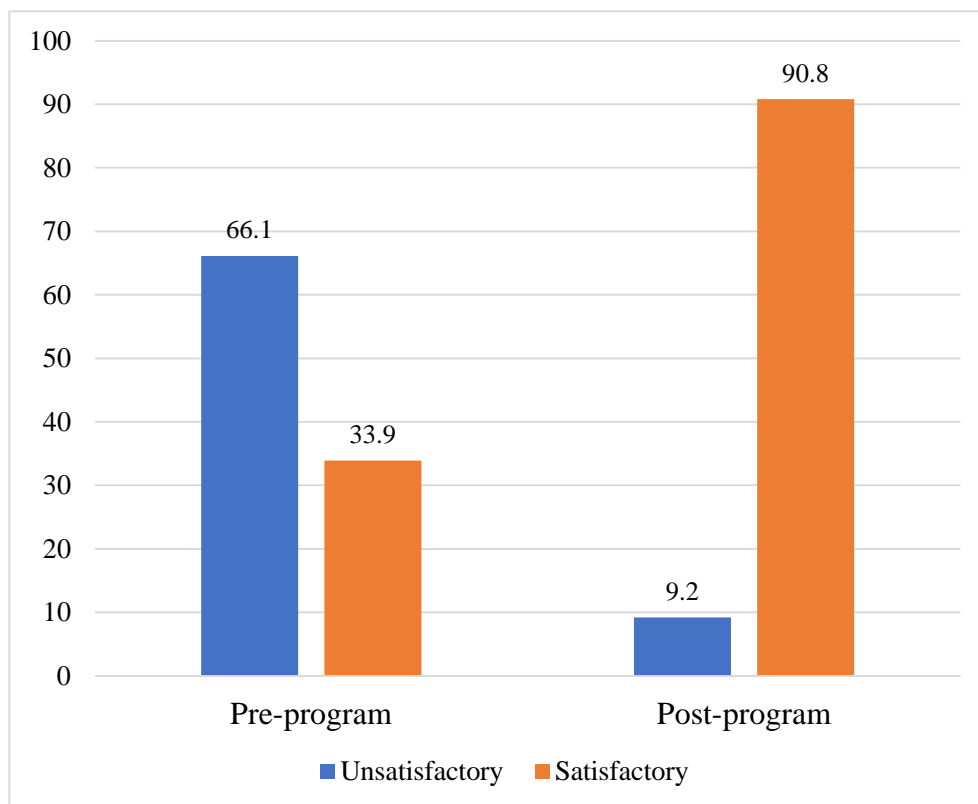


Fig. (3) Percentage distribution of the studied mothers' total reported practices about care of trachoma pre and post

Table (3) Relation between demographic characteristics of the studied mothers and their total knowledge scores about pre and post program implementation (n=271).

Demographic Characteristics	No. (%)	Total Knowledge Scores Preprogram						X ² Sig.	Total Knowledge Scores Post program						X ² Sig.
		Poor		Average		Good			Poor		Average		Good		
		No.	%	No.	%	No.	%		No.	%	No.	%	No.	%	
Age															
< 25	12 (4.4)	3	1.8	9	11.0	0	0.0	104.525 ^{FE}	0	0.0	3	2.4	9	6.3	60.067 ^{FE}
25 - < 30	38 (14.0)	19	11.4	3	3.7	16	72.7	0.000**	0	0.0	12	9.7	26	18.1	0.000**
30 - < 35	42 (15.5)	27	16.2	9	11.0	6	27.3		0	0.0	22	17.7	22	15.3	
35 - < 40	92 (33.9)	43	25.7	49	59.8	0	0.0		0	0.0	28	22.6	28	19.4	
40 +	87 (32.1)	75	44.9	12	14.6	0	0.0		10	100.0	59	47.6	59	41.0	
Marital status															
Married	197 (72.7)	114	68.3	70	85.4	13	59.1	37.414 ^{FE}	7	70.0	77	62.1	113	78.5	23.889 ^{FE}
Widowed	55 (20.3)	46	27.5	9	11.0	0	0.0	0.000**	3	30.0	40	32.3	12	8.3	0.000**
Divorced	19 (7.0)	7	4.2	3	3.7	9	40.9		0	0.0	7	5.6	12	8.3	
Educational level															
Illiterate	106 (39.1)	102	61.1	0	0.0	4	18.2	201.499 ^{FE}	10	100.0	80	64.5	16	11.1	125.848 ^{FE}
Primary education	46 (17.0)	43	25.7	3	3.7	0	0.0	0.000**	0	0.0	27	21.8	19	13.2	0.000**
Secondary education	43 (15.9)	10	6.0	33	40.2	0	0.0		0	0.0	7	5.6	36	25.0	
University education and above	76 (28.0)	12	7.2	46	56.1	18	81.8		0	0.0	10	8.1	66	45.8	
Occupation of the mother															
Working	119 (43.9)	30	18.0	67	81.7	22	100.0	121.313	0	0.0	31	25.0	88	61.1	50.460 ^{FE}
Not working	152 (56.1)	137	82.0	15	18.3	0	0.0	0.000**	10	100.0	93	75.0	49	34.0	0.000**
Residence															
Rural	185 (68.3)	143	85.6	36	43.9	6	27.3	62.773	10	100.0	109	87.9	67	46.5	52.641 ^{FE}
Urban	86 (31.7)	24	14.4	46	56.1	16	72.7	0.000**	0	0.0	15	12.1	70	48.6	0.000**

X² Chi square test^{FE} Expected cell count less than 5, Fisher's Exact test was used.

* Statistically significant at p≤0.05

** Highly statistically significant at p≤0.01

Table (4) Relation between demographic characteristics of the studied mothers and their total reported practices scores pre and post program implementation (n=271).

Demographic Characteristics	No.	Total Practices Scores Preprogram				X ² Sig.	Total Practices Scores Post Program				X ² Sig.
		Unsatisfactory		Satisfactory			Unsatisfactory		Satisfactory		
		No.	%	No.	%		No.	%	No.	%	
Age											
< 25	12 (4.4)	3	1.7	9	9.8	70.994 ^{FE}	0	0.0	12	4.4	-0.312
25 - < 30	38 (14.0)	19	10.6	19	20.7	0.000**	0	0.0	38	14.0	0.000***
30 - < 35	42 (15.5)	27	15.1	15	16.3		0	0.0	43	15.5	
35 - < 40	92 (33.9)	46	25.7	46	50.0		0	0.0	91	33.9	
40 +	87 (32.1)	84	46.9	3	3.3		8	9.2	79	90.8	
Marital status											
Married	197 (72.7)	120	67.0	77	83.7	29.463	0	0.0	197	72.7	-0.062
Widowed	55 (20.3)	52	29.1	3	3.3	0.000**	0	0.0	55	20.3	0.310
Divorced	19 (7.0)	7	3.9	12	13.0		0	0.0	19	7.0	
Education											
Illiterate	106 (39.1)	99	55.3	7	7.6	135.780	10	9.2	96	29.9	-0.777
Primary education	46 (17.0)	46	25.7	0	0.0	0.000**	0	0.0	46	17.0	0.000**
Secondary education	43 (15.9)	16	8.9	27	29.3		0	0.0	43	15.9	
University education	76 (28.0)	18	10.1	58	63.0		0	0.0	76	28.0	
Occupation of the mother											
Working	119 (43.9)	39	21.8	80	87.0	104.785	0	0.0	119	43.9	0.000**
Not working	152 (56.1)	140	78.2	12	13.0	0.000**	0	0.0	152	56.1	
Residence											
Rural	185 (68.3)	149	83.2	36	39.1	54.577	17	9.2	168	90.8	0.000**
Urban	86 (31.7)	30	16.8	56	60.9	0.000**	0	0.0	86	31.7	

Table (5) Correlation between total score of knowledge and total score of reported practices among studied mothers (n=271).

	Total score of knowledge			
	Pre-program		Post-program	
	r	Sig.	r	Sig.
Total score of reported practices				
Pre-program	0.856	0.000**		
Post-program			0.567	0.000**

r Pearson Correlation test

* Statistically significant at p≤0.05

** Highly statistically significant at p≤0.01

Discussion

According to demographic characteristic of the studied mothers, the current study demonstrated that more than one third of the studied mothers aged 35 - < 40 years old with mean age was 39.31 ± 9.03 . Less than three quarters of them were married. These findings were in accordance with [10], who studied "Knowledge, Attitudes, and Practices about Trachoma in Rural Communities of Tigray Region, Northern Ethiopia: Implications for Prevention and Control", who recorded that less than half of their participants were in the 30-49 age group and more than half of them were married. Also, this result came in agree with [11] who studied Knowledge, practices and perceptions of trachoma and its control among communities of Narok County, Kenya. *Tropical Diseases, Travel Medicine and Vaccines*, 2(1), 1-10 and mentioned that the age of the sample studied was between 31:45 and most of them were married.

The current study revealed that nearly two fifth of the studied mothers didn't read and write, more than half of them didn't work and their families lived in rural areas respectively. These findings were in the same line with [12] who studied "Knowledge and practice on childhood blindness among communities in Northwest Ethiopia: implications to blindness prevention programs. *JOECSA*, 17(2)" and reported that; less than half of their respondents were unable to read and write. More than half of them lived in rural area and less than half of them were housewives mothers, also this result came in agree with [13] in study conducted in Northern Ethiopia about "Prevalence and associations of active trachoma among rural preschool children in Wadla district, northern Ethiopia. *BMC Ophthalmol* 20" and found that wealth index of their studied sample was medium, most of them were married and unable to read and write. From researcher's point of view, these results are due to the fact that there is still a need to educate the rural community, especially in Upper Egypt, about the importance of educating girls because they are future mothers.

According to personal characteristics of the studied children, the current study revealed that less than two thirds of the studied children were females and more than half of them aged 4- < 5 years old. These findings were in accordance with [13] in a study conducted in Ethiopia who reported that more than half of their subjects had between three to four children and less than ten years. But more than half of them their family size was less than six. This might be due to the Egyptian family, especially in Upper Egypt, they tend to have many children and all live with grandfather in one home.

Regarding to the studied children's birth order, more than one third of them ranking was the second member and nearly two thirds of children didn't go to nursery. This is might be due to a high percentage of children were from 4 - 5 years and in aged before nursery (pre-school).

This study cleared that more than half of the studied mothers had unsanitary total housing and living conditions score. This agreed with [14] who conducted a study "Knowledge on Trachoma among Visitors of A selected Hospital in Dharkeynley District, Somalia" and

reported that less than half of their participants had sanitary living environment.

Regarding the studied mothers' knowledge about trachoma pre and post program implementation, the current study revealed that there were highly statistically significant differences for all aspects of the studied mothers' knowledge regarding trachoma between pre and post program implementation. This might be due to effectiveness of current education program and mother hadn't received any health education program regarding trachoma before.

Regarding total knowledge score about trachoma pre and post program implementation among the studied mothers, the current study showed that, the minority of the studied mothers had satisfactory total knowledge score about trachoma preprogram and this percentage improved to less than two thirds post program. This result was supported by [10] who indicated that health education on trachoma was significantly linked to trachoma knowledge. This might be due to the lack of public awareness in trachoma as a result of absence of advertising by the mass media, failure to hold relevant meetings by health officials and the importance not related to prevention issues and focus on treatment related. But, after educational program mothers' knowledge improved in addition the mothers were keen to acquire knowledge against trachoma.

The present study showed that more than one third of the studied mothers had satisfactory total reported practices score regarding prevention of trachoma preprogram, and this percentage improved post program. This result agreed with [15] who studied "Progress to eliminate trachoma as a public health problem in Amhara National Regional State, Ethiopia: results of 152 population-based surveys. *The American journal of tropical medicine and hygiene*, 101(6), 1286-1295" and revealed that there was a radical satisfactory improvement in participants' total score of reported practices after the health awareness package as the vast majority in the post-test rather than of minority in the pre-test.

Regarding relation between the studied mothers' total knowledge score and their demographic characteristics at pre and post program implementation, the current study revealed that, there were highly statistically significant differences between the studied mothers' total knowledge score pre and post implementation and all items of their demographic characteristics. This result might be due to that educated mothers has desire and ability to learn and gain knowledge, also urban mother has easy access to ask doctor help, gain health care services in any time and acquired more knowledge from the social media than women lived in the rural areas.

Regarding relation between the studied mothers' total reported practices score and their demographic characteristics at pre and post program implementation, the current study revealed that there was highly statistically significant difference between the studied mothers' total reported practices score at post program implementation and their demographic characteristic as

age, educational level, place of residence and occupation. While, there was no statistically significant relation with their marital status. This result was in compliance with that of [16] who performed a study entitled "Factors Associated with Awareness, Attitudes and Practices regarding Common Eye Diseases in the General Population in a Rural District in Bangladesh" and reported that, mothers' age and educational level had a significant effect on mothers' practices level. From the researcher's point of view, this result could be explained as unsatisfactory level of practices was higher among mothers with lower age and lower educational level. Also, unsatisfactory level of practices was higher among housewife mothers.

According to correlation between the studied mothers' total knowledge score and total reported practices score, the current study revealed that there was highly significant positive correlation between the studied mothers' total knowledge score and their total reported practices score. This might be due to the link between knowledge score change and practice change is logic as the studied mothers who gained more knowledge change are more likely to improve their practice regarding trachoma. This result was in accordance with that of [17] who carried out a study and emphasized that, there was highly significant positive correlation between parents' knowledge and practices level towards caring for their children with eye diseases.

Conclusion

Based on the findings of the present study and research hypothesis, it can be concluded that:

The study proved improvement in knowledge and practices of the mothers having preschool children regarding care of trachoma after the implementation of educational program. Statistically significant differences between the studied mothers' total knowledge and their demographic characteristic except marital status, statistically significant difference between the studied mothers' total reported practices score and their demographic characteristic pre and post program implementation. Highly significant positive correlation between the studied mothers' total knowledge score and their total reported practices score pre and post program implementation.

Recommendations

Raise the mothers' awareness regarding trachoma through:-

- Continuous health promotion, health education models as well as screening in all community settings for early detection, prevention and management of trachoma through disseminating booklets.
- Healthy hygienic guidelines should be available in all settings provided care for preschool to decrease the incidence of trachoma and strengthen the knowledge and practices among high risk populations and low socioeconomic families.

- Provision of strategies for mothers to control the disease and applying SAFE strategy by families and physicians will help to control trachoma.
- Activate the role of preschool school nurse through continuous health education about hygienic care within the preschool school settings and the wider community through displays illustrating model health practices.

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