

## Effect of Instructional Guidelines on Mothers' Knowledge and Practice regarding Conjunctivitis among Children in Ophthalmology Outpatient Clinic

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### Abstract

**Background:** Conjunctivitis is a frequent infection, particularly in young people. Conjunctivitis is highly contagious and uncomfortable, but it seldom causes permanent vision loss or structural damage. **This study aimed** to evaluate the effect of instructional guidelines on mothers' knowledge and reported practices regarding Conjunctivitis among Children in Ophthalmology outpatient clinic. **Design:** A pretest/post-test quasi-experimental research design was used. **Setting:** This study was conducted at the Ophthalmology outpatient clinics at Sohag University Hospital. **Sample:** The study participants included a convenient sample of 100 mothers. **Tools used for data collection:** Tool (1): A structured interview questionnaire which consisted of three parts: (I) children's demographic data; (II) mothers demographic data, (III) children's medical history of conjunctivitis; Tool (2): Mothers' knowledge assessment sheet about conjunctivitis, Tool (3): Mothers' reported practices assessment sheet. **Results:** The results revealed that highly statistically significant differences were found between mothers' knowledge and reported practices regarding Conjunctivitis pre and post-instructional guidelines implementation. **Conclusion** The current study found that the mother's knowledge and reported practices had improved as a result of the instructional guidelines implementation. **Recommendations** The ophthalmology outpatient clinics at Sohag University Hospital should hold mother education seminars and programs regarding the treatment and prevention of conjunctivitis and associated infection.

**Keywords:** Children, Conjunctivitis, Instructional guidelines, Mothers

### Introduction

A broad category of illnesses affecting people of all ages, socioeconomic backgrounds, and genders is collectively referred to as conjunctivitis. These diseases are found all over the world. The condition commonly referred to as "pink eye" is an inflammation of the conjunctiva, which is the thin, transparent layer of tissue that covers the white portion of the eye and lines the inner surface of the eyelid. A frequent eye condition, particularly in youngsters, is acute infective conjunctivitis. It may affect one or both eyes. While conjunctivitis is usually a minor eye infection sometimes it can develop into a serious problem (**American Optometric Association, 2023**).

Other names for conjunctivitis,

which is often known as pink or sticky eyes, are any inflammatory condition involving the conjunctiva. The inner surface of the eyelids and the white of the eye are covered by the mucous membrane known as the conjunctiva (**LaMattina and Thompson, 2019**). A large blood supply in the front region of the eye and a small middle layer. Per **Michael et al. (2019)**, the retina is home to the eye's sensory receptors. Approximately 2.5 cm in diameter, the eyeball is a long, spherical cloud.

The choroid, retina, and sclera are its three layers. Except for the cornea, which is composed of translucent collagen fibers, the outer layer, known as the sclera, is white and fibrous. Thus, cornea Inflammation results from an antigen-antibody immunological

reaction that happens when bacteria or viruses come into contact with the conjunctiva because they are identified as foreign antigens. There is a distinct mechanism involved in allergic conjunctivitis (AC). According to **Ricci and Kyle (2019)**, contact with the allergen either triggers an allergic reaction (an overreaction of the immune system) or activates mast cells and histamine mediators, which causes inflammation.

Overcrowding, poor sanitation, and increased exposure to communicable diseases are the outcomes of inadequate housing. Children under the age of five are the primary victims of eye disease globally, and environmental risk factors including contaminated water, poor sanitation and hygiene, and indoor air pollution from solid fuel used for cooking, enhance the risk of the condition (**Centres for Disease Control and Prevention, 2022**).

According to **McKenzie et al. (2019)**, low socioeconomic position also has the biggest detrimental impact on health because of rising medical expenses and unaffordable health insurance premiums. Underfunding or a lack of knowledge about the health advantages of specific foods are the main causes of imbalanced and undereating meals. According to **Stanhope and Lancaster (2020)**, unhealthy habits can also be caused by certain household pets, certain cultures and values, interpersonal relationships, and communication patterns.

Research has shown that a child in good health who is a toddler or preschooler is likely to spend a lot of time on the ground, outside in the dirt, or investigating the contents of the trash can or dog waste in the park. Preschoolers are typically a little more selective about what they investigate, but they still get very dirty from playing, running, climbing, and jumping—these activities are the cornerstones of childhood development. In addition, they may learn how to ride a tricycle and consume fruits without first washing them (**Glasper et al., 2022**).

Similar research by **Huband et al. (2022)** found that some toilet-trained children are unlikely to be able to clean themselves after urinating and are unable to defend against potential sources of infection

including contaminated hands, fingers, or towels. World Health Organisation (**2022**) states that prompt intervention, improved environmental conditions, and sufficient resources can all help to address eye disorders. Treatment for eye disorders can also include better face washing, fewer flies, and appropriate antibiotic use. The World Health Organisation (**2022**) states that between 10 and 20% of infants experience vision issues in their first year of life, and over 50% do so between the ages of 0 and 2. Moreover, 20–48% have a greater risk of recurrent eye infections. Approximately 5.5 million are at risk in Egypt along with 15 million children worldwide, most of them in the age of 0–6 years.

One of the most frequent nontraumatic ocular problems that send patients to the emergency room is conjunctivitis, which has been reported to be a common condition in the pediatric age range. About 30% of all ocular issues are caused by conjunctivitis. Moreover, conjunctivitis in particular is thought to be the cause of complete blindness in 5–15% of cases of eye infections. Additionally, it makes it impossible to participate in games and other activities. academic work and study, which causes attendance and performance issues in the classroom (**American Academy of Ophthalmology, 2023**).

When hands, facecloths, towels, or handkerchiefs come into contact with the eyes, they can harbor bacteria that cause conjunctivitis. After contracting conjunctivitis, symptoms usually start to show up 2-4 days later. Similar to any other mucous membrane, infectious pathogens can stick to the conjunctiva. This can overwhelm the body's natural defenses and result in clinical symptoms such as redness, discharge, irritation, and occasionally photophobia. When you sleep at night, it's common for some tear film to collect in the corners of your eyes, causing some crusting in the morning. Cellular features of conjunctivitis include cellular invasion and exudation (**Akpalaba and Aluge, 2022**).

Conjunctivitis is typically classified according to its cause, which might include

chemical, bacterial, fungal, parasitic, toxic, chlamydial, and allergic agents. Tear-drainage ducts that aren't fully opened could be the reason for babies (Cash and Glass, 2019). A type of conjunctivitis can be passed from the mother's birth canal to her newborn child. Ophthalmia neonatorum is the name for this potentially dangerous illness that requires quick antibiotic treatment. Due to the small size and ease of blockage of their tear ducts, infants frequently experience "sticky eyes." A clear or white sticky fluid gathers in the eye as a result. Generally, no therapy is necessary if the eye is not red or irritated (Alwan, 2019).

According to numerous studies, the frequency of bacterial and viral causes of acute conjunctivitis is nearly similar (American Academy of Paediatrics, 2023). Summertime is the peak season for viral conjunctivitis, but winter and spring are the peak seasons for bacterial conjunctivitis, according to James and Ashwill (2016). There are more viral aetiologies than bacterial ones. Most episodes of conjunctivitis are benign and have a self-limiting course; nevertheless, conjunctivitis can worsen and become a potentially blinding disease depending on the immunological condition of the kid and the etiology (Michael et al., 2019).

The goal of management is comfort. The swelling goes away on its own, sometimes taking weeks to do so. According to Isenberg et al. (2022), cold compresses, regular lubricants (without preservatives), and antibiotic drops when necessary are beneficial. Contact lens wearers should be advised to stop using their lenses until all symptoms have subsided (Alwan, 2019). Generally speaking, the first line of treatment for conjunctivitis in children is to keep their eyes clean and gently wash them many times a day using cotton wool soaked in tepid water. Additionally, the child should visit the doctor for the proper course of therapy; if the child has AC, the doctor may recommend topical antihistamines or antibiotic eye drops or ointment for a few days (the American Academy of Paediatrics, 2023).

The goals of nursing care for conjunctivitis are symptom relief and

stopping the transmission of infectious agents. Warm compresses can help break the crust that forms on the eyelids overnight, and the parents should be taught how to apply eye drops or ointment to relieve symptoms. Families should be taught to discourage their children from touching or rubbing their eyes (Isenberg et al., 2022). The prevention of infectious spread should be taken into consideration due to the high contagiousness of conjunctivitis and the need for parents to thoroughly wash their hands after handling their child.

It is recommended that parents and kids learn how to wash their hands properly after administering compresses or drops to infected children, avoiding touching their eyes, sneezing, or coughing, and refraining from sharing towels, washcloths, or eye drops (purchasing individual bottles for each member of the family who is infected) (Ricci and Kyle, 2019). Once the illness has healed up, kids can go back to school or creche. It is essential to teach families proper hygiene practices to avoid recurrent conjunctivitis. It is important to teach parents to avoid sharing towels or clothing, wash their hands frequently, change their pillowcases frequently, and keep their hands away from their eyes. A population that is robust and vibrant cannot develop from sick youngsters who suffer from recurrent episodes of conjunctivitis on a chronic basis (Navachetan, 2017).

By educating mothers on the meaning, causes, signs, and symptoms of acute infective conjunctivitis, as well as its contributing factors, preventative measures, and care, nurses play a significant role in the prevention of conjunctivitis. In addition to encouraging individual strategies to prevent recurrence and helping children regain their previous level of health and function to avoid long-term issues, CHN should help identify families with community resources that will support health maintenance. These actions will help lessen the impact of the disease that has already occurred (Liang et al., 2019). When it comes to teaching service users and carers about health education, ophthalmic nurses play a crucial role as instructors and

consultants in society and in facilitating the development of other multidisciplinary team members' knowledge and understanding of ocular health (Royal College of Nursing, 2020).

### **Significance of the study:**

In general practice, the eye accounts for 2–5% of all consultations. Thirteen to fourteen instances per 1,000 cases annually, or around 35% of all eye disorders presenting in general practice, are caused by infectious conjunctivitis. The percentage of bacterial infective conjunctivitis in children's cases varies greatly (American Optometric Association, 2023). The most prevalent eye condition among youngsters and most of these children are students, is acute conjunctivitis. Conjunctivitis causes frequent absences from school, which negatively impacts a child's performance and attendance. Other issues that they could experience include not being able to play, read, socialize, or participate in outdoor activities. To address the management and prevention of conjunctivitis in children, as well as to inform mothers about the prevention and treatment of pediatric conjunctivitis, this study reviewed important therapies, novel discoveries, and targeted guidelines. Because mothers are more likely to care for their children at home than to admit them to the hospital, mothers were included in the study's sample. Sufficient support for mothers may prevent or ameliorate these problems and indirectly achieve better outcomes for mothers and their children. Therefore, the researcher did this study to evaluate the effect of instructional guidelines on mothers' knowledge and reported practices regarding Conjunctivitis among Children in Ophthalmology outpatient clinic.

### **Aim of the study:**

To evaluate the effect of instructional guidelines on mothers' knowledge and reported practices regarding Conjunctivitis among Children in Ophthalmology outpatient clinic through:

Assess mothers' knowledge regarding Conjunctivitis pre and post-instructional guidelines implementation  
-Assess mothers' reported practices regarding

Conjunctivitis pre and post-instructional guidelines implementation

-Design instructional guidelines based on the mothers' actual needs.

-Implement instructional guidelines concerning mothers' actual needs.

-Explore the effect of instructional guidelines implementation on improving mothers' knowledge and practices regarding Conjunctivitis.

### **Subjects and Method:**

#### **Research Hypotheses:**

H1: There will be an improvement in the mothers' knowledge post-test scores than in the pretest regarding spinal cord injury Conjunctivitis.

H2: There will be an improvement in the mothers' reported practices post-test scores than in the pretest regarding Conjunctivitis.

H4: There will be a significant correlation between mothers' knowledge and reported practices.

#### **Research Design:**

To achieve the aim of the current study a pretest/post-test quasi-experimental research design was used.

#### **Study Settings:**

This study was conducted at the Ophthalmology outpatient clinics at Sohag University Hospital. The investigator chose this hospital because outpatient clinics were receiving a large number of children with acute infective conjunctivitis daily.

#### **Subject:**

A convenient sample of (100) mothers was selected from the previously selected settings within six months.

#### **Tools used for data collection:**

**Tool (1): A structured interview questionnaire:** It was developed by researchers based on national and

international literature review (**American Academy of Ophthalmology, 2023; American Academy of Paediatrics, 2023; Akpalaba and Aluge, 2022**), and consisted of three parts:

**Part: (I) Children's demographic data:** included four items about age, sex, the child going to nursery school, and child ranking between his siblings.

**Part (II) mothers demographic data** included four items about age, educational level, occupation, and residence.

**Part (III) children's medical history of conjunctivitis;** included six items such as onset, source of infection, medical history, previous infection of the family members, and recurrent infection and its manifestation.

**Tool (2): Mothers' knowledge assessment sheet about conjunctivitis:** It was developed by researchers based on national and international literature review (**American Academy of Ophthalmology, 2023; Akpalaba and Aluge, 2022**), it included seven items divided into 11 questions about meaning, types, causes, risk factor, symptoms, complication, possibility of disease chronicity, preventive measures, management, treatment and source of information.

#### Scoring system:

Complete was	2
Incomplete was	1
Don't know was	0

#### Total Scoring System:

Good was	>75 %
Fair was	50 – 75 %
Poor was	< 50 %.

**Tool (3): Mothers' reported practices assessment sheet** regarding care of their children with acute infective conjunctivitis, It was developed by researchers based on national and international literature review (**American Academy of Ophthalmology, 2023; Akpalaba and Aluge, 2022**) it included three items divided into 18 questions as follows 10 for personal hygiene practices, 4 for dealing with child eye secretion, and 4

for child care during disease period.

#### Scoring system:

Done correctly was	2
Done incorrectly was	1
Done was	0

#### Total Scoring System:

Satisfactory	>65 %
Unsatisfactory	< 65 %

#### Procedure:

##### Preparatory Phase:

The study's design and data collection method was created by utilizing books, journals, periodicals, and online searches to assess relevant local, national, and international literature on a variety of topics linked to the prevention of acute infective conjunctivitis disease. The researcher also made visits to the chosen locations during this phase to familiarize herself with the study settings and staff. The tools were developed under the supervision of supervisors, and expert opinions were taken into consideration.

#### Validity of the tool:

Five pediatric nursing specialists, an ophthalmologist, and the community health nursing department at Sohag University's College of Nursing examined and modified the equipment. The experts assessed the tools and their content's logical conclusion, simplicity, clarity, relevance, completeness, correctness, and application. There were no changes made.

#### Reliability of the tool:

The Cronbach Alpha test was utilized to statistically assess the dependability of the suggested instruments. It served the purpose of determining the internal consistency of the questionnaire. There was internal consistency in the knowledge and practice tools. The knowledge tool's alpha test result was 0.785.

The reported practices had an alpha test of 0.764.

### **Pilot Study:**

10% of the sample, or 10 children and their mothers, participated in the pilot study. About half an hour was needed to fill out each sheet in the pilot research, which was designed to evaluate the tool's clarity, simplicity, applicability, and time requirements. Since no changes were made, the pilot study sample was added to the study's overall sample.

### **Administrative design**

The director of Sohag University Hospital, where the current study was done, received an official letter of approval from the dean of the nursing faculty explaining the purpose, title, and objectives of the study to get their participation and communication.

### **Ethical consideration:**

Every mother gave their oral consent before the interview and received a brief explanation of the study's objectives, ensuring that all ethical concerns were met. They were also given the assurance that all data collected would be kept private and used exclusively for the study's objectives. The mothers were free to leave the study at any moment and without explanation.

### **Fieldwork:**

From September 2023 to February 2023, a period of six months was dedicated to fieldwork. Two days a week, from 8 a.m. to 1 p.m., the researchers were accessible.

### **B-Implementation phase:**

Commencing with an introduction, the researchers briefed the mothers and their children on the purpose, elements, and anticipated results of the study. The researchers conducted one-on-one interviews with each woman who took part in the study, explaining the goal of the investigation, the tool's component, and how to respond to the questions, including gathering information for the pretest, applying the guidelines, and administering the post-test. Before the recommendations were put into effect, the

researchers gathered information on the mother's age, educational background, employment status, and medical history; also, they recorded the mothers' awareness of the symptoms, causes, clinical images, mode of transmission, complications, prevention, and treatment of conjunctivitis.

.. Additionally, documented conjunctivitis practices were incorporated, such as using personal protective measures to stop the illness from spreading and symptom relief during the guideline phases. Using pretest instruments, the researchers evaluated mothers' reported conjunctivitis-related practices and knowledge before putting the instructions into practice. After explaining the goal of the study to each mother, the researchers went over the guidelines and gave them to them, along with instructions on how to use them.

The researchers created and implemented conjunctivitis-related instructional guidelines using both theoretical and practical sessions. The patients' knowledge and reported conjunctivitis recovery procedures were covered in the theoretical and practical sections. It was implemented through role-plays, instructional videos, posters, lectures, and scenarios.

Instructional guideline: Mothers received an illustrated booklet with information on the anatomy of the eye and normal conjunctiva, the definition of acute infective conjunctivitis, its types, causes, signs, and symptoms, as well as risk factors, complications, and preventive measures regarding the care of their children.

There were two sessions covering the theoretical component, each lasting around twenty to thirty minutes. One was finished in thirty minutes total. Each session started with a review of the input from the previous session, and the first session opened with an introduction to the educational guidelines related to conjunctivitis. Details about preventive measures for care for their children with conjunctivitis procedures were included in the practical section.

**Regarding conjunctivitis, the following information was covered in the instructional guidelines:**

- Introduction about introduction
- Anatomy of eye & normal conjunctiva
- Definition of acute infective conjunctivitis
- Types of acute infective conjunctivitis
- Causes of acute infective conjunctivitis
- Signs & symptoms of acute infective conjunctivitis
- Risk factor of acute infective conjunctivitis
- Complication of acute infective conjunctivitis
- Preventive measures for care for their children with conjunctivitis

### Evaluation phase:

After finishing the implementation of the guidelines, the researchers applied a post-test to evaluate mothers' knowledge and reported practices. The evaluation was conducted one month after the guidelines were implemented. Mothers were re-interviewed to evaluate the effect of instructional guidelines on mothers' knowledge and reported practices regarding Conjunctivitis among Children in Ophthalmology outpatient clinics using the same pre-test instruments that were scored using the same methodology (I, II, and III).

### Statistical design:

The Statistical Package for Social Science (20 version) was utilized to organize, tabulate, and analyze all of the collected data. For qualitative descriptive data, frequencies, and percentages were used; for relation tests,  $\chi^2$  was used; for quantitative data, mean and standard deviation were used. The degree of significance was determined by using the correlation test ( $r$ ) to analyze correlations, and statistical significance was defined as a P-value less than 0.05. Not significant ( $P > 0.05$ ), significant ( $P > 0.05$ ), and highly significant ( $P > 0.05$ ).

### Results:

**Table 1:** It was evident that 68% of the children attending nursery school, 37% were the eldest among their siblings, and 29% of the children studied, aged 2-< 3 years, had a mean age of  $3.89 \pm 1.17$ . 60% of the children

were male.

**Table 2,** shows that 43% of the women aged 20-30 and 45% of them were illiterate, and their mean age was  $29.3 \pm 7.09$ . Regarding employment, moms made up 73% of the population and worked 56% of the time.

**Table 3** shows that of the children under study, slightly less than half (49%) developed the condition after a year, and 40.0% developed it right away. The study revealed that the primary sources of infection were environmental factors and cross-contamination from family members and nursery school (48% and 42%, respectively). Moreover, 75% of the participants had experienced conjunctivitis in the past. Furthermore, 55.0% of them had family members who had previously contracted an illness.

**Figure (1)** illustrates that doctors were the mothers under study's primary source of information regarding conjunctivitis, with the media and friends coming in second and third.

**Table (4)** illustrates a considerable improvement in mothers' knowledge about conjunctivitis before and after the application of instructional guidelines, with a significant improvement at  $<0.001$ .

**Figure 2** shows that 83% of the moms in the study had low knowledge of conjunctivitis before the implementation of the instructional guidelines, while 100% of them had strong knowledge thereafter, with a significant improvement at  $<0.001$

**in Table 5.** Although most mothers had low reported practice scores on the pretest, it was clear that there were statistically significant differences in mothers' stated practices across all evaluated domains following the guidelines' implementation at ( $P < 0.001$ ).

Regarding conjunctivitis, **Figure 3** shows that 88% of the mothers in the study had unsatisfactory levels of practice before the introduction of instructional guidelines, but 90% of them had satisfactory practices

following the implementation of instructional guidelines, with a significant improvement at  $<0.001$ .

Table (6) indicates that, following the

implementation of instructional instructions, there were substantial positive correlations between the mothers under study and their overall knowledge and practice scores regarding their children suffering from acute infectious conjunctivitis ( $P<0.001$ ).

**Table (1): the studied children distribution regarding to their demographic data (n=100).**

Demographic data	No.	%
<b>Age/ years</b>		
2-< 3	29	29.0
3-<4	25	25.0
4-<5	21	21.0
5≤ 6	25	25.0
<b>X± SD</b>	<b>3.89±1.17</b>	
<b>Sex</b>		
Male	60	60.0
Female	40	40.0
<b>The child going to nursery school (yes)</b>	68	68.0
<b>Ranking of the child between his siblings</b>		
The oldest	37	37.0
The middle	34	34.0
The youngest	29	29.0

**Table (2): The studied mother's distribution regarding their demographic data (n=100)**

Demographic data	No.	%
<b>Age/ years</b>		
<20	40	40.0
20-30	43	43.0
30-40	17	17.0
<b>X± SD</b>	<b>29.3±7.09</b>	
<b>Educational level</b>		
Not read and write	45	45.0
Primary Education	18	18.0
Secondary Education	15	15.0
University Education	22	22.0
<b>Occupation</b>		
Employed	56	56.0
Housewife	44	44.0
<b>Residence place</b>		
Rural	73	73.0
Urban	27	27.0



Table 3 Medical history among the studied children (N=100)

Medical data	No.	%
<b>Onset of conjunctivitis</b>		
Immediately after birth	30	30.0
After 1 month	21	21.0
After 1 year	49	49.0
<b>Infection source</b>		
Cross-infection (family, nursery school)	42	42.0
Environmental	48	48.0
During childbirth	6	6.0
Do not know	4	4.0
<b>Medical history</b>		
No	93	93.0
Chronic eye diseases	0.0	0.0
Genetic diseases	0.0	0.0
Sensitivity	3.0	3.0
Eye injuries	1.0	1.0
<b>Surgery</b>		
<b>Is the child previously affected with conjunctivitis?</b>		
Yes	75	75.0
No	25	25.0
<b>The infection was recurrent</b>		
Yes	55	55.0
No	45	45.0

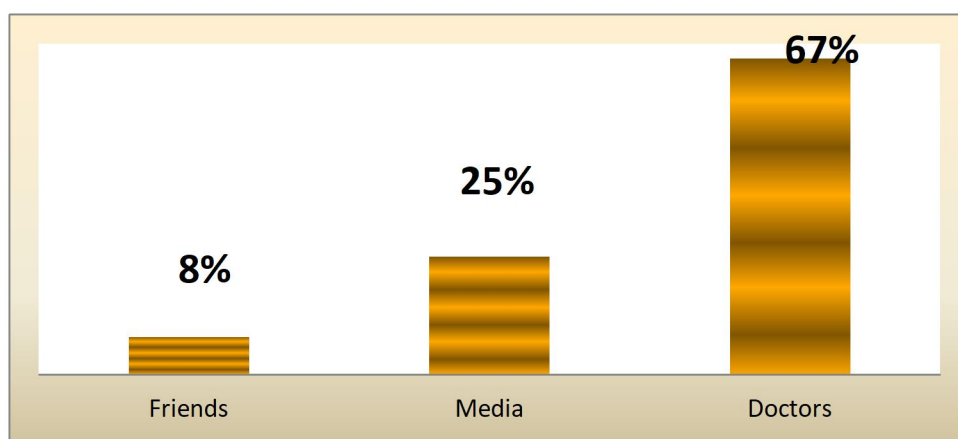
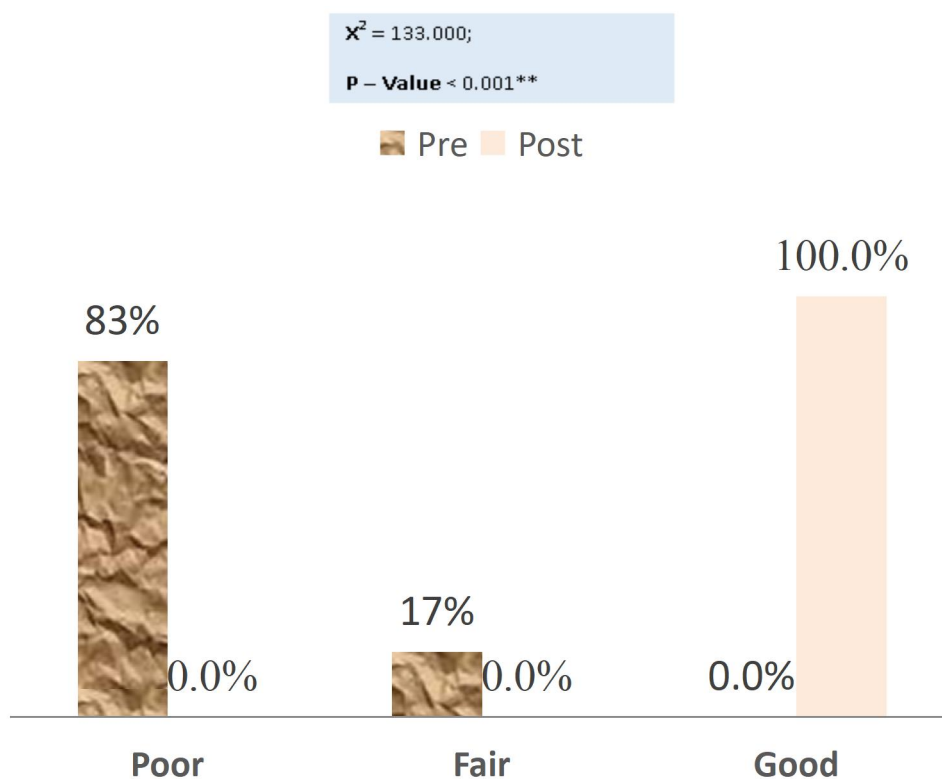


Figure (1): Percentage distribution of the studied mothers regarding their source of knowledge about conjunctivitis (n=100)

**Table (4): Frequency and percentage distribution of the studied mother's knowledge regarding conjunctivitis pre and post-instructional guidelines implementation (n=100)**

Mothers' knowledge	Pre		Post		P- value
	No	%	No	%	
Meaning	30	30%	86	86%	<0.001*
Types	20	20%	94	94%	<0.001*
Causes	30	30%	86	86%	<0.001*
Sign and symptoms	16	16%	82	82%	<0.001*
Complications	32	32%	80	80%	<0.001*
The disease becomes chronic	18	18%	92	92%	<0.001*
Preventive measures	28	28%	86	86%	<0.001*
Management	24	24%	90	90%	<0.001*
Treatment	36	36%	88	88%	<0.001*

\*\* Highly Statistical significant ( $P \leq 0.001$ )

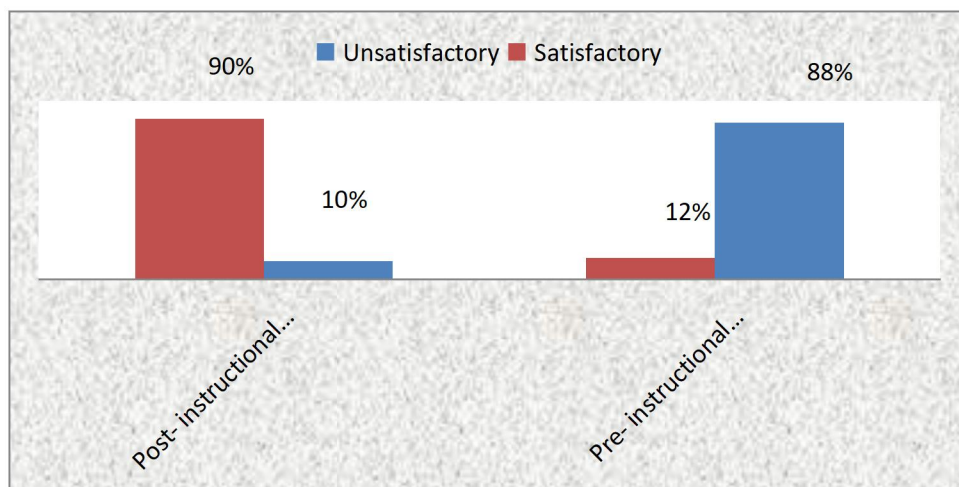


**Figure (2): Total Knowledge Levels regarding conjunctivitis among the Studied Mothers Pre/ Post instructional guidelines implementation (n= 100).**

**Table (5): Frequency and percentage distribution of the studied mother's reported practices regarding conjunctivitis pre and post-instructional guidelines implementation (n=100)**

Mother's practices	No =(50)				P-value
	Pre		Post		
	No	(%)	No	(%)	
mothers' hygiene practices regarding the care of their children with acute infective conjunctivitis	28	28%	86	86%	<0.001*
mothers' practices regarding dealing with eye secretion	24	24%	90	90%	<0.001*
mothers' practices regarding child care during illness	36	36%	88	88%	<0.001*
<b>Mothers' practices score to alleviate symptoms of conjunctivitis</b>					
Goes to the hospital or pharmacist to get the medication	15	15.0	91	91.0	<0.001*
Rinses the eye several times a day with warm water	14	14.0	87	87.0	<0.001*
Cleans the eyelids margins and eyelashes gently and repeatedly with a warm, moist cloth or cotton ball	12	12.0	76	76.0	<0.001*
Uses cold compresses in cases of allergic conjunctivitis	16	16.0	88	88.0	<0.001*
Uses warm and moist compresses in cases of infectious conjunctivitis (discharge)	22	22.0	84	84.0	<0.001*
<b>Mothers' practices score to prevent infection of conjunctivitis</b>					
Washes her hands frequently, with soap and water	14	14.0	67	67.0	<0.001*
Is careful when using compresses, because infections can spread from eye to eye	8	8.0	62	62.0	<0.001*
Uses a separate compress for each eye and makes sure to wash her hands between applications	14	14.0	58	58.0	<0.001*
Starts from the inside of the eye (closest to the nose) and wipes outward	13	13.0	73	73.0	<0.001*
Uses a different part of the compress for each wipe to minimize cross-contamination	12	12.0	78	78.0	<0.001*
Do not share towels, washcloths, or pillowcases with anyone until the symptoms are completely gone	17	17.0	79	79.0	<0.001*
Keeps the child's hands away from his/her eyes as much as possible. When he/she touches his/her infected eye, be sure to wash his/her hands.	20	20.0	83	83.0	<0.001*
Changes the pillowcase, washcloth, and towel daily. Washes the dirty ones in hot water.	14	14.0	58	58.0	<0.001*
Do not share eye medicine (separate bottle for each one)	13	13.0	73	73.0	<0.001*
Wears protective gloves while putting eye medications to the child	12	12.0	78	78.0	<0.001*

\*\* Highly Statistically significant ( $P \leq 0.001$ )



**Figure (3): Total practice Levels regarding conjunctivitis among the Studied Mother's Pre/ Post instructional guidelines implementation (n= 100).**

**Table (6): Correlation between total knowledge score and total practices score of the studied mothers' pre and post-instructional guidelines implementation (100)**

Correlation	Pearson correlation coefficient			
	Total practice score			
	Pre- instructional guidelines implementation		Post-Post-instructional guidelines implementation	
	R	P	r	P
Total knowledge score	.057	.603**	.834	.019*

\*\* Correlation is significant at the 0.0001 level

### Discussion:

One of the most common ocular conditions in children, acute infective conjunctivitis is the most common ophthalmic complaint seen in emergency rooms worldwide, accounting for an estimated 1% to 4% of visits. It has been reported that over half of these cases in children occur before the age of six, particularly in daycare and school settings. Because it is highly contagious, some germs can spread into and damage the cornea and other important parts of the child's eye (Ricci & Kyle, 2019). As their children's nurses, chemists, and doctors, mothers of children with conjunctivitis play a pivotal and vital role in providing home treatment. Therefore, rules should be put in place to provide moms with the information and real performance they need to help them reduce family stress and improve the outcomes for their kids. Therefore, this study was conducted to evaluate the effect of instructional guidelines on mothers' knowledge and reported practices regarding Conjunctivitis among Children in Ophthalmology outpatient clinic.

The results of this study indicated that children under three years old had a mean age of  $3.89 \pm 1.17$ . A little less than 25% of them were two years old. This finding was in line with Stan and Block's (2019) research, Paediatric Acute Bacterial Conjunctivitis: An Update, Bardstown, Kentucky, which found that 25% of the children under study developed conjunctivitis at that age. According to Ohnsman and Michael (2020), conjunctivitis is a common infection, particularly in children under the age of five. This finding is consistent with the findings of the current study, which showed that the majority of the children under investigation were between the ages of one and less than three, with a mean age of two and a half. This could be connected to those kids' weakened immune systems.

Additionally, the study revealed that three-fifths of the children under investigation were male. These findings are consistent with those of Oladigbolu (2020), who examined the pattern of eye diseases in a university health service clinic in northern Nigeria and discovered that male children with conjunctivitis were more likely than female

children to experience the condition. In contrast, **Gibson & Mehrsefat (2021)** examined the epidemiology and demographics of conjunctivitis at Harvard Medical School in Boston, Massachusetts, USA, and reported that both male and female children can develop conjunctivitis. Males are more likely than females to be exposed to environmental pollution, unsanitary health practices, and infections both within and outside the home, and a higher proportion of males in the research region.

About the percentage of children attending nursery school, two-thirds had attended. The results of **Aronson & Shope's (2019)** study, *Managing Infectious Diseases in Child Care and Schools: A Quick Reference Guide*, Elk Grove Village, USA, were consistent with this finding, which said that two-thirds of children under the age of six attend nursery school every day.

According to the results of the current survey, a little less than of children were the eldest siblings in their homes. **El-Moselhy et al., (2021)**, which examined the prevalence, risk assessment, and effects of eye diseases in schoolchildren in Cairo, Egypt, found that slightly over two-thirds of the children were the youngest in their families, contradicted this result.

Studying the demographics of mothers whose children had conjunctivitis, it became evident that over two-thirds of the mothers were in their 20s or 30s, with a mean age of  $29.3 \pm 7.09$ . The majority of mothers in African countries range in age from 15 to 19 years old. **Wanyama et al., (2022)** found similar results in their study, *Differential Effects of Young Maternal Age on Child Growth*, conducted at Tulane University in New Orleans, USA. Coinciding with this outcome, **Mohammed's (2019)** study on the evaluation of mothers' involvement in treating their children's ocular health issues found that the majority of the mothers under investigation were between the ages of 20 and 30 and held a bachelor's degree.

More than half of the mothers in the study had jobs, which may help to explain why mothers' knowledge and practices are low because they work long hours outside. This finding is consistent with that of **Aronson & Shope (2019)**, who also stated that half of the studied sample had jobs.

Regarding mothers' educational attainment, the study's findings nearly agreed with those of **Mafwiri (2019)**, who found that

half of the sample was illiterate and conducted a pilot study to assess the integration of eye care for children into reproductive and child health services in Dar es Salaam, Tanzania: A historical comparison study. This could be because illiterate moms sometimes struggle to comprehend the nature of the illness and implement effective treatment management strategies. Education also helps mothers provide a healthy environment for their children and take better care of them.

According to the current study, approximately 75% of mothers reside in rural regions. These results are consistent with those reported by **El Moselhy et al. (2021)**, who also found that 75% of mothers reside in rural areas. This could be a result of the decline in community health services and the prevalence of illiteracy in rural areas.

About the disease features, the present investigation showed that fewer than half of the children developed the illness within a year after birth or later. This might be connected to the children's younger ages and weakened immune systems. This study's findings about the majority of children who have previously had acute infective conjunctivitis are consistent with those of **Ghandor et al., (2019)** study on the prevalence of eye diseases among schoolchildren in Cairo, Egypt, which found that over two-thirds of children had previously experienced an eye infection and that having siblings with eye diseases is a significant risk factor. This could have to do with the extremely contagious form of conjunctivitis, growing population density, and poor living conditions.

It was discovered that the primary sources of infection were environmental factors, cross-infection from family members, and childcare centers. **Mohammed (2019)** found, however, that slightly fewer than one-third of the mothers in the study stated that bacterial infections were the cause of their children's ophthalmological diseases, with conjunctivitis being the most common. The current study's findings might be connected to an increase in crowding in most households and nursery schools.

This study demonstrated that doctors were the mothers' primary source of information regarding conjunctivitis. According to the researchers, the study showed that the participants received medical assistance in the proper method.

Concerning the mothers' overall knowledge score concerning conjunctivitis, the results of this study demonstrated a considerable improvement in the mothers' knowledge both before and after the

adoption of instructional instructions. The majority of moms were ignorant about conjunctivitis during the pretest, according to the study. There were statistically significant gains in moms' knowledge across all assessed domains following the recommendations' implementation. **Mohammed (2019)** discovered that the majority of moms were ignorant about conjunctivitis, which is consistent with this finding.

The study's total knowledge score for conjunctivitis revealed that the majority of the studied mothers had low knowledge levels before the implementation of instructional guidelines, but all of them had good knowledge following the implementation of guidelines with a significant improvement. These findings are consistent with research conducted by **Everitt & Little (2019)** in the USA, who conducted a study titled "A Qualitative Study of Patients' Perceptions of Acute Infectious Conjunctivitis" and found that two-thirds of mothers had low knowledge because they didn't seek out or express a desire for more information about acute infective conjunctivitis. Additionally, **Gibson & Mehrsefat (2019)** noted that more than two-thirds of the mothers in the study had poor knowledge levels regarding conjunctivitis. This could be the result of the low educational level of these mothers.

Regarding the reported practices of the mothers in the study about their children who had conjunctivitis, the current study's findings showed that, although most mothers had unsatisfactory scores on the pretest for their reported practices, once the guidelines were followed, statistically significant differences were observed in the mothers' reported practices across all tested domains. According to the study, it was clear that most mothers were unaware of the connection between dietary insufficiency and conjunctivitis during the pretest. Following the guidelines' implementation, mothers' understanding showed statistically significant gains, which had a favorable impact on their practices.

Concerning the studied mothers' practices regarding conjunctivitis, this result revealed that; the majority of the studied mothers had unsatisfactory practice levels regarding conjunctivitis pre-instructional guidelines implementation while most of them had satisfactory practices post-instructional guidelines implementation with significant

improvement. This might be due to mothers' poor practices regarding the care of their children with conjunctivitis which improved post-instructional guidelines implementation. This finding indicates that the guidelines are successful, which may be explained by how well-suited their practical elements are and how well they address the needs of moms. These results were in line with those of **Sahu (2019)**, who conducted "An Exploratory Study to Assess the Knowledge and Practices of Mothers Related to Eye Care of their Children 3-6 years in an Urban Area of Ludhiana Punjab," noting that most of the mothers in the study had practices that were deemed satisfactory about their children's eye care. **Gibson & Mehrsefat (2019)** also reported that a majority of the mothers in their study scored highly on knowledge, which lends credence to their findings. This could be because these mothers don't have a lot of knowledge.

However, these results were not in line with those of **Everitt & Little (2019)**, who conducted a study in the USA titled "A Qualitative Study of Patients' Perceptions of Acute Infectious Conjunctivitis" and found that two-thirds of mothers had unsatisfactory knowledge because they didn't ask questions or indicate a desire to learn more about the condition.

The results of the current study showed that the mothers under study's total knowledge and practice scores regarding their children with conjunctivitis were positively and significantly correlated. This result is consistent with that of **Ebeigbe & Emedike (2019)**, who discovered a positive link between mothers' practices and their overall level of knowledge. This may be because moms' poor levels of knowledge had a significant impact on their reduced practice levels.

#### **Conclusion:**

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It is clear from the findings of the present study that the mother's knowledge and reported practices had improved as a result of the instructional guidelines implementation. There were positive significant correlations between the studied mothers' total knowledge and reported practice scores regarding their children with conjunctivitis.

#### **Recommendations**

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The results of the study led to the following recommendations being made:

- Sohag University Hospital's ophthalmology outpatient clinics ought to host mother

education programs and seminars about how to manage and avoid conjunctivitis and related infections.

- To improve mothers' basic care instructions for their children with the disease, Ophthalmic Outpatient Clinics should distribute illustrated books about acute and chronic infective conjunctivitis.
- Additional research and replication of this study with a different sample in an alternative setting are needed to make generalizations about the findings possible.

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