

Mothers' Knowledge and Practices about Eye Trauma in Early Childhood at Assiut University Hospital

Manal Ali Samir¹, Hekmat Ebrahim Abed El Kreem², Nahed Thabet Mohamed³ & Mohamoud Abed EL-Rady⁴

1. Teacher at Al - Azhar Nursing Technical Institute, Al-Azhar University, Egypt.
2. Professor of pediatric Nursing, Faculty of Nursing, Assiut University, Egypt.
3. Assistant Professor of Pediatric Nursing, Faculty of Nursing, Assiut University, Egypt.
4. Lecturer of Ophthalmology, Faculty of Medicine - Assiut University, Egypt.

Abstract

Eye trauma is one of the most common eye diseases. It refers to the damage caused by a direct injury not only to the eye but also to the surrounding area. **Aim of study** was to assess mothers' knowledge and practices about eye trauma in early childhood. **Design** a descriptive research design was utilized in this study. The study was conducted at inpatient and outpatient ophthalmology unit at Assiut University Hospital. **Subjects and method** was included 150 mothers who had children in early childhood (1-5 years) and suffering from eye trauma. **Tool** one tool was used for data collection. A structured questionnaire was developed to assess the mothers' knowledge and practices about eye trauma. **Results** the majority of mothers had poor knowledge about eye trauma and more than half of them had unsatisfactory level of practice. **Conclusion** there were lack of mothers' knowledge and practices about eye trauma in early childhood. **Recommendation** a written pamphlet or booklet containing information about eye trauma should be developed and keep copies in clinics and ophthalmic department in all hospitals.

Key words: Mothers' Knowledge, Practice, Eye trauma & Early Childhood.

Introduction

Children are the future of a nation. Children are exposed to a various epidemiological factors in the environment which affect their present and future state of health. Eye diseases especially eye trauma represent an important public health problem in childhood (Thompson et al., 2016).

Toddler and preschooler are a high risk group for exposure to eye trauma, because these stages are characterized by curiosity, imitation, hyperactivity and rapid developmental period. Eye trauma is a common childhood illness all over the world (Alexandra et al., 2011).

Eye trauma is defined as injuries to the eye which can involve the eyelids, the bones surrounding the eye, and the eyeball itself. It occurs due to damages to the eye and surrounding structures which can be caused by blows to the eye, cuts, abrasions, foreign bodies, penetrating or cutting injuries, chemical burns and radiation exposure (Cascairo et al., 2015).

Ocular trauma is an important cause of ocular morbidity in children, being leading cause of non-congenital unilateral blindness. Even eyes represents only 0.27% of the body surface area and 4% of the facial area, and ocular trauma are the third most commonly trauma exposed area after the hands and feet. It is estimated that, worldwide, there are approximately 1.6 million people blind from eye injuries, 2.3million bilateral blindness and 19 million with unilateral visual loss. These evidences make ocular trauma the most common cause of unilateral blindness. Pediatric ocular injuries are usually

uniocular and accidental and it forms about 20-50 % of all eye injuries (Qayum et al., 2018).

Nursing management of eye trauma depending on the nature and severity of eye trauma. It must focus on preventing repeated eye trauma, promoting the setting of blood away from the visual axis. Bases in the management of eye trauma are elevation of the head while sleeping, topical corticosteroids, and cycloplegic medication. If globe rupture is suspected or confirmed, an eye shield should be immediately placed over the suspected area and further direct examination should be done (Jovanovic & Medarevic, 2013).

Management of a child with ocular foreign body should focus on the answer of an important question which is whether the foreign body is superficial or intraocular, if the presence of an intraocular foreign body is suspected, an immediate ophthalmology consultation must be performed. Parents and others who provide care and supervision for children need to practice safe use of common items that can cause severe eye injury, such as paper clips, pencils, scissors, bungee cords, wire coat hangers and rubber bands (Yullish et al., 2013).

Ophthalmic nurses have an important role as teachers and advisors, in educating services and careers and in providing health education in society. The nurse has an important role in preventing infection by caring and cleaning the eyes with aseptic precaution following basic principles of eye care, minimize pain by applying cold or warm compressor to the affected area, reduce and minimize fear and anxiety by

emotional support, explanation and encouraging the mothers and their children to express their feeling (Hatfield, 2012).

Significance of the study

In Egypt ocular trauma is a concern, as it is a major cause of preventable monocular blindness and visual impairment in the world. Eye trauma can cause serious complications as blindness so it can threaten the life of children (Rostomian et al., 2014). There were about 175 children suffered from eye trauma who admitted to Assiut university hospital (Patient Administration Records, Assiut, 2016).

Aim of the Study

The aim of this study was to assess mothers' knowledge and practices about eye trauma in early childhood.

Research question?

1. What is the mothers' knowledge and practices about eye trauma in early childhood?

Subjects & Method

Research design

A descriptive research design was utilized in this study.

Setting

The study was conducted at the inpatient and outpatient Clinics of ophthalmology unit at Assiut University Hospital.

Subjects

The total study sample was 150 mothers of children at early childhood (1year: 5 years) and suffering from eye trauma.

Tool of data collection

One tool was used for this study. A structured interview questionnaire sheet about mothers' knowledge and practices regarding eye trauma .It designed by the researcher to collect the necessary data and composed of four parts as the following:-

Part I: This part was related to the personal data of the mothers (such as age, educational level, working condition, marital status, residence and family size).

Part II: This part was related to the personal data of the children (such as age, gender, birth order, and medical data of the disease which include place of eye trauma, history of previous eye trauma, signs and symptoms of eye trauma).

Part III: Included questions to assess the mothers' knowledge about eye trauma (such as definition, causes, signs and symptoms, types and complications).

Part IV: Included questions to assess the mothers' practices regarding eye trauma (such as what was the first action which taken after eye trauma, what did she do when a foreign body enter the eye, what did

she do in case of occurrence of eye complications as eye infection and eye bleeding, etc...).

Method

1. An official permission was obtained from the director of ophthalmology unit at Assiut University Hospital to collect the necessary data for this study.
2. A structured interview questionnaire was designed by the researcher on the basis of the relevant literature.
3. A **pilot study** was done on 10 % (15) of the mothers to test the clarity and applicability of the tool and to estimate the time needed for filling the questionnaire. Based on the results of the pilot study, no modifications were done in the tool. The mothers in the pilot were excluded from the total sample.
4. The content **validity** of the structured interview questionnaire was assessed by a jury of five professors in the field of pediatric nursing and Ophthalmology and its result was 95%.
5. The internal consistency of **reliability** was estimated by calculating Alpha cronbach's test and its result was ($r= 0.861$).
6. The researcher interviewed each participated mother individually in sector of outpatient clinic and inpatient unit to obtain the necessary information. The researcher read the questions to mothers and wrote the mothers' answer on the sheet, the average time for filling the sheet was around 15-20 minutes depending on the response of the mothers, the researcher interviewed with 2-3mothers 3 days per week at morning or afternoon shifts. The whole duration for data collection took about 9 months from the beginning of April 2017 until the end of December 2017.

Ethical consideration

1. Research proposal was approved from Research Ethical Committee in the Faculty of Nursing.
2. There is no risk for study subjects during application of the study.
3. The study was following common ethical principles in clinical research.
4. Confidentiality and anonymity were assured.
5. Oral agreement was obtained from the mothers.
6. Mothers were assured that the data of this research was used only for the purpose of research.
7. Mothers and their children had the right to refuse to participate and /or withdraw from the study without any rational any time.

Scoring system of mothers' Knowledge and practices:

1-Included questions to assess mothers' knowledge regarding eye trauma (such as definition, causes,

signs & symptoms, types and complications), each complete answer got score of (2) and incomplete answer got score of (1) but incorrect or don't know the answer got score of (0). The total score of mothers' knowledge was done as following:-

- Poor Level score <65%,
- Fair Level score 65<75%
- Good level score \geq 75%.

2- Included questions to assess mothers practices regarding eye trauma (such as what was the first action which taken after eye trauma, what did she do when a foreign body enter the eye, actions taken in case of occurrence of eye complications as eye infection and eye bleeding). Each item from reported practice was graded as follows; one score for steps done correctly and zero for not done and done

incorrect. The mothers who obtained less than (60%) grade were considered having unsatisfactory level of practice, and the mothers who obtained (60% and more) grade were considered having satisfactory level of practice. 3-This scoring system was determined based on previous researches (El Gendy, 2018) & (Abd El-hay ,2016)

Statistical analysis

The data which obtained were reviewed, prepared for computer entry, coded, analyzed and tabulated. Descriptive statistics (frequencies and percentages, mean & standard deviation, Pearson correlation coefficient and Chi-square) were done using computer program (SPSS) version (25). It's considered significant when P. value (< 0.05) for all statistical tests.

Results

Table (1): Percentage distribution of the mothers regarding their personal data (n=150).

Items	(n=150)	
	No	%
Age / years:		
20 < 30	113	75.3
30 < 40	35	23.3
\geq 40	2	1.4
$\bar{X} \pm SD$	29.5 \pm 3.7	
Range	24 – 45	
Educational level:		
Illiterate	7	4.7
Read and write	11	7.3
Basic education	25	16.6
Secondary education	73	48.7
University	34	22.7
Mothers' working condition:		
Housewife	121	80.7
Working	29	19.3
Residence:		
Rural	72	48.0
Urban	78	52.0
Family Size:		
3 to 5	128	85.3
6 to 8	22	14.7
Range	3-8	

Table (2): Percentage distribution of the children suffering from eye trauma according to their personal data (n=150).

Items	(n=150)	
	No	%
Age / years:		
1 < 3	42	28.0
3 - 5	108	72.0
$\bar{X} \pm SD$	3.8 \pm 1.1	

Items	(n=150)	
	No	%
Range	1 – 5 years	
Gender:		
Males	88	58.7
Females	62	41.3
Birth order:		
First	63	42.0
Second	66	44.0
Third	17	11.3
More than the third	4	2.7

Table (3): Percentage distribution of the mothers' knowledge regarding eye trauma.

Items	(n=150)	
	No	%
1- Definition of eye trauma:		
Complete correct	46	30.7
Incomplete correct	61	40.7
Don't Know or incorrect answer	43	28.6
2- Causes of eye trauma:*		
Head injury	23	15.3
Entrance of foreign body	15	10.0
Direct blow to eye	43	28.7
Chemicals injury	20	13.3
Don't know	49	32.7
3- Signs and symptoms of eye trauma:*		
Eye pain	44	29.3
Loss of vision	9	6.0
Redness of eye	39	26.0
Blurred vision	4	2.7
Bleeding	3	2.0
Don't know	51	34.0
4- Types of eye trauma:*		
Blunt trauma	9	6.0
Penetrating trauma	1	0.6
Chemical trauma	4	2.7
Foreign body trauma	86	57.4
Don't Know	50	33.3
5- Complications of eye trauma:*		
Eye inflammation	78	52.0
Bleeding	2	1.2
Damage to iris	3	2.0
Impaired or loss of vision	9	6.1
Don't know	58	38.7

*More than one answer was selected

Table (4): Percentage distribution of the mothers' practices while dealing with eye trauma.

Mothers reported practice	(n=150)			
	Done		Not done	
	No	%	No	%
The maternal practice as reported by the mother which taken after eye trauma:*				
Going to hospital.	150	100.0	0	0.0
Rinse the eye several times.	122	81.3	28	18.7
Put cold compresses to eye.	108	72.0	42	28.0
Cleaning the eye with wet cotton.	54	36.0	96	64.0
When entering a foreign body into the eye:*				
Going to hospital.	150	100.0	0	0.0
Trying the mother to eject the foreign body by her-self.	3	2.0	147	98.0
Rinse the eye several times.	97	64.7	53	35.3
Actions taken in case of occurrence of eye complications:				
1- Eye infection:*				
Cleaning the eye regularly by water.	80	53.3	70	46.7
Taking attention when making compresses to prevent spread of infection from one to another.	42	28.0	108	72.0
Use disposable package for every eye and ensuring cleaning hands between practices.	56	37.3	94	62.7
Start from near to far side of eye.	21	14.0	129	86.0
Wearing disposal gloves when putting eye medication.	18	12.0	132	88.0
Cleaning towels, pads of beds daily with hot water.	27	18.0	123	82.0
2- Eye bleeding:*				
Putting cold compresses to eye.	106	70.7	44	29.3
Raising the head upward to reduce the eye bleeding.	51	34.0	99	66.0

*More than one practice was done

Table (5): The relationship between the mothers' personal data and their knowledge level regarding eye trauma.

Items	Total score of mothers' knowledge (n=150)						P-value
	Poor n (129)		Fair n (11)		Good n (10)		
	No	%	No	%	No	%	
Age / years:							
20 < 30	118	85.5	10	7.2	10	7.2	0.631
30 < 40	11	91.7	1	8.3	0	0.0	
Education Level:							
Illiterate	7	100.0	0	0.0	0	0.0	0.001 **
Read and write	11	100.0	0	0.0	0	0.0	
Basic education	25	100.0	0	0.0	0	0.0	
Secondary education	65	89.0	6	8.2	2	2.8	
University	21	61.8	5	14.7	8	23.5	
Mothers' working condition							
House Wife	107	88.4	8	6.6	6	5.0	0.167
Working	22	75.9	3	10.3	4	13.8	
Residence:							
Rural	69	95.8	3	4.2	0	0.0	0.002 **
Urban	60	76.9	8	10.3	10	12.8	
Family Size:							
3 to 5	107	83.6	11	8.6	10	7.8	0.124
6 to 8	22	100.0	0	0.0	0	0.0	

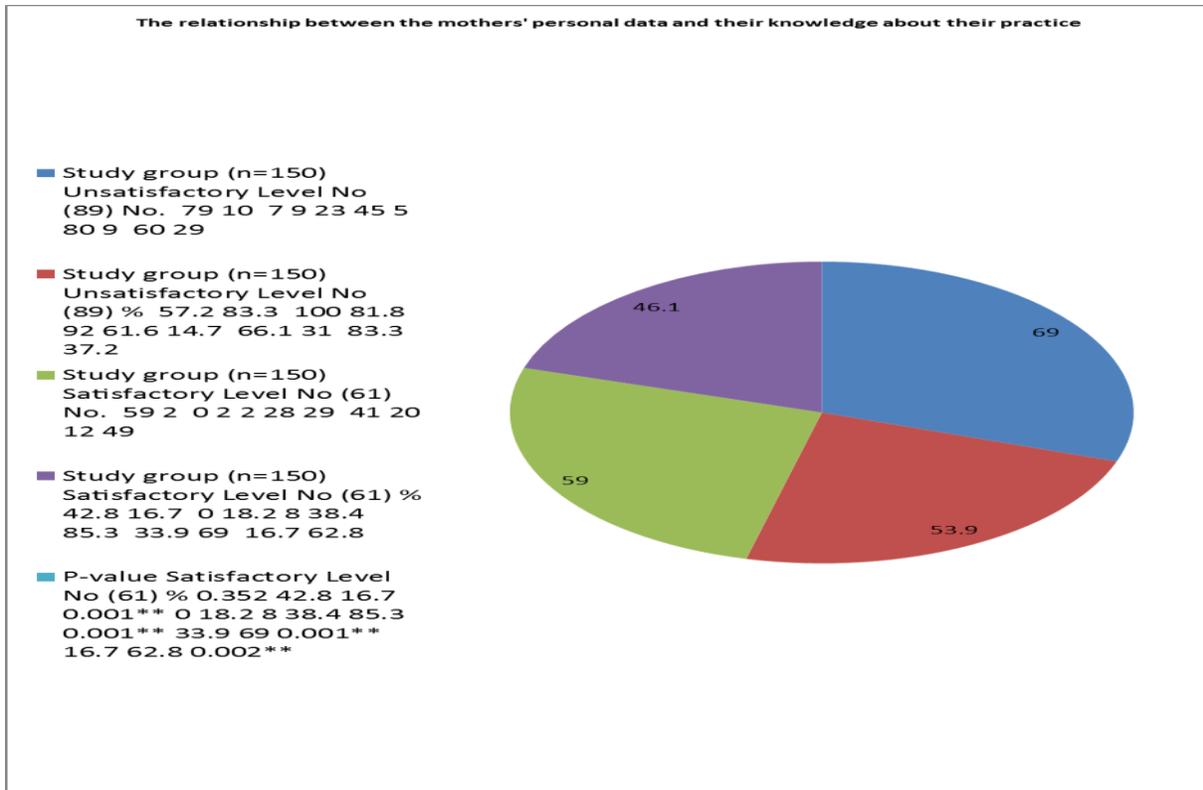


Figure (2): total score of mothers' practices.

Table (1): Illustrates percentage distribution of the mothers regarding their personal data. It was found that age of three-quarters of the studied mothers (75.3%) was 20 to less than 30 years with $\bar{X} \pm SD$ 29.5 ± 3.7 . The results indicated that less than half of the mothers' (48.7%) graduated from secondary school. Also the majority of the mothers (80.7%) were housewives. According to the residence more than half of mothers (52.0%) were from urban areas. As regards family size it was found that the majority of the mothers (85.3%) their family size were three to five persons.

Table (2): Shows the percentage distribution of the children with eye trauma related to their personal data. It was observed that 72.0% of children, their age ranged from 3-5 years with the $\bar{X} \pm SD$ 3.8 ± 1.1 . Also it was noticed that more than half of them (58.7%) were males. The results found that 44.0% of the children were in the second birth order.

Table (3): Demonstrates the percentage distribution of the mothers' knowledge regarding to eye trauma. Concerning to definition of eye trauma, it was found that 40.7% of the mothers had incomplete correct answer. Also the results indicated that 32.7% and 34.0% of the mothers didn't know the causes and signs & symptoms of eye trauma. As regard the types of eye trauma more than half of mothers (57.4%)

mentioned foreign body trauma. Finally more than half of the mothers (52.0-00%) reported that eye inflammation was one of the complications of eye trauma.

Table (4): Shows the percentage distribution of the mothers' practices to reduce the symptoms of eye trauma. The results found that one hundred percentages (100.0%) of the mothers went to hospital as the first action they taken after eye trauma. While 81.3% and 64.7% of them rinsed the eye several times. In addition more than half of the mothers (53.3%) were cleaning the child's eyes regularly by water when eye infection occurs. Furthermore less than three-quarters of mothers (70.7%) put cold compresses to eye in case of occurrence of eye bleeding.

Table (5): Reveals the relationship between the mothers' personal data (age, educational level, working condition, residence, and family size) and their knowledge level, the results indicated that there were statistical significant relations between mother's education, residence and their knowledge level. While no statistical significant relations were detected regarding to other variables with mothers' knowledge level.

Table (6): Illustrates the relationship between the mothers' personal data and their practice level. The

present study found that a statistical significant relations were detected between the mothers practice level and many variables as educational level, occupation, residence, and family size. While no statistical significant relation was detected as regards the mothers' age.

Discussion

In the present study regarding to the personal data of the mothers, it was found that three quarters of the mothers (75.3%) aged between 20 to less than 30 years, these findings agreed with **Negrel & Thylerfors (2014)** The global impact of eye injuries, who stated that pediatric ocular trauma was common among children with young mothers which may be due to deficiency of mothers knowledge and experience in management of eye trauma.

Also it was shown that more than half of the mothers (52%) were from urban areas. These results disagreed with **Megan & Kathleen (2015)** Urban and rural epidemiology of eye injury, who reported that eye trauma, was more common in rural areas than urban areas.

Also the results found that the majority of the mothers (80.7%) were housewives. This result disagreed with **Elhesy (2016)** Retrospective study of ocular trauma in Mansoura ophthalmic center, who noted that eye trauma was more common in children whose mothers were working and leave their children alone. In my opinion ocular trauma occur because mothers are interested in internet sources and social networking which make them busy and away from their children for direct observation.

As regards family size ,the results found that the most of mothers (85.3%),their family size were three to five persons, this result disagreed with **Sonavane et al., (2014)** Knowledge and practice regarding eye injuries among mothers of under 15 years children ,who reported that pediatric ocular trauma was more common in large family size.

Regarding to the personal data of the children there is less than three-quarters of children (72.0%) ,their age ranged from three to five years, this result agreed with **Aghadoost et al., (2015)** Pediatric ocular trauma in kashan ,who stated that eye trauma is common during early childhood and it is one of the many areas that has been largely ignored and represents a significant gap in our understanding of trauma across the life, also the result consistent with **Serinken et al., (2013)** Causes and characteristics of home related eye injuries in western turkey ,who reported that any age group can be liable to ocular trauma, ocular trauma may be due to the curiosity of children to discover any things by their face and body.

Concerning to the child's sex, the results of the present study shown that more than half of the children having eye trauma (58.7%) were males. The study findings similar to **Carolin et al., (2014)** Mothers' attitudes and practice about eye trauma, who reported that 70% of the studied children were males, this may be due to hyperactivity of males than females.

Also the present study indicated that (44.0%) of the children were in the second birth order. This result was similar with **Sii et al., (2017)** The UK pediatric ocular trauma study, developmental of a global standardized protocol for prospective data collection in pediatric ocular trauma, who noted that eye trauma was more common in the first ranked child in the family.

Concerning to the mothers' knowledge about eye trauma it was noticed that less than half of the mothers had incomplete correct answer about definition of eye trauma. Also about two thirds of the mothers didn't know the causes and symptoms of eye trauma. According to the types of eye trauma it was found that more than half of mothers stated foreign body trauma. In addition more than half of the mothers reported that eye inflammation was one of the complications of eye trauma. This result agreed with **Erci & Akturk (2016)** Determination of knowledge, attitudes and practice of mothers about eye injuries in children aged 0-5years and **Ebeigobe & Emedike (2017)** Parent's awareness and perception of children eye injuries in Nigeria, who reported that there were lack in the mothers' knowledge about eye trauma.

As regards mothers' practices regarding eye trauma, the results confirmed that all mothers were going to hospital as the first action which taken after eye trauma and when foreign body entered to the child eyes .While about two-thirds of mothers rinsed their child eyes several times in the previous conditions. Also in case of occurrence of eye complications as eye infection, it was observed that more than half of the mothers were cleaning their hands regularly by water and soap before touching the eye or giving medications in it. Moreover less than three-quarters of mothers put cold compresses to eye in case of occurrence of eye bleeding.

This result agreed with **Aksakal et al., (2012)** Eye injuries, what parents of children 0-6years of knowledge, attitudes and **Carlsson et al., (2016)** Mothers' awareness towards child eye injuries, who reported that the majority of mothers, first line in management of eye trauma was to take their children to hospital. While the results conducted by **El-Dosoky (2012)** Eye injuries among children, knowledge, attitudes and practice. And **Mbogo et al., (2016)** Knowledge, attitudes and practice of mothers

about childhood ocular trauma who found that the majority of the studied mothers' first choice which they did for all practices was rinsing the eyes several times before went to hospital.

Concerning to the relationship between the personal data of the mothers' and their knowledge level, it was noticed that, there were statistical significant relations between mother's education, residence and their knowledge level. In my opinion education greatly strengthen the women to perform their vital roles in caring of their children and generating a healthy environment, lack of mothers' knowledge made mothers had difficulty to understand the nature of disease and to apply a new management. Also the study contains young children less than 5years who can't take care of themselves. Living in urban area may be another variable this may be due to overcrowding, living in closed places, availability of recreation activities and This result concurrent with **Alasya (2012)** The incidence of eye injuries among children aged 1-6 years and the practice of mothers related with eye injuries, who noticed that high statistical significant relations were observed between the mothers' knowledge about eye trauma and their residence, educational level.

The present study revealed that there were no statistical significant relations were found between mothers' knowledge and their age, occupation and family size, this may be due to all mothers can improve their knowledge from any source not depend on her age, occupation or their family size. These results supported with **Fanella et al., (2011)** Presentation and management of pediatric ocular trauma, who observed no statistical significant relations between age and family size with the mothers' knowledge about eye trauma. On the other hand, these results dis-agree with **Tomazzoli et al., (2014)** Eye injuries in childhood, who reported high statistical significant relations were detected between mothers' age, educational level, residence, working condition and their knowledge level about eye trauma in their study.

Concerning to the relationship between the mothers' personal data and their practice level, it was noticed that a statistical significant relations were detected between mothers' practices and many variables as educational level, working condition, residence, and family size. In my opinion larger family size made children lives in crowding places which increase susceptibility for injury. Also unemployed mothers were not interested in increasing their knowledge.

These results were in the same line with **(Brown & Thomas (2014)** The incidence of ocular trauma in children, who mentioned that high statistical significant relations were detected between age, educational level, working condition and residence

and the total score of mothers' practice about eye trauma .Moreover **Ozmen & Ergin (2017)** Descriptive study on knowledge and practices of mothers on eye injuries prevention for children under 5years ,who noted that significant relations between mothers' practices and their education, residence, occupation and family size.

While in the present study no statistical significant relation was detected as regards the mother age and their practices regarding eye trauma. This result agreed with **Adepoju & Adigun (2017)** Chemical eye injuries, mothers' knowledge and practice about eye trauma, who found that no statistical relation was detected between the mothers' practice level regarding eye trauma and their age, working condition.

Conclusion

Based on the results of the study, the study concluded that there were lack of mothers' knowledge and practices about eye trauma in early childhood.

Recommendations

Based on the findings of the current study, the following recommendations are suggested:

1. Health classes and health education program for mothers about management and prevention of early childhood eye trauma should be held at hospitals.
2. Community awareness campaigns should be developed to help reduce pediatric eye trauma and how to provide appropriate treatment in occurrence of injury according to each type.
3. A written pamphlet or booklet containing information about eye trauma should be developed and keep copies in clinics and ophthalmic department in all hospitals.

References

2. **Abd El-hay H., (2016):** Assessment of nurses' knowledge and practice regarding wound infection at Assiut university children hospital.
3. **Adepoju F., & Adigun A., (2017):** Chemical eye injuries, mothers' knowledge and practice about eye trauma. African Journal; 6(12):7-15.
4. **Aghadoost D., Afazel M., & Aghadoost H., (2015):** Pediatric ocular trauma in kashan. Arch Trauma Journal; 1 (1):30-40.
5. **Aksakal F., Cetin F., & Tunca M., (2012):** Eye injuries, what parents of children 0-6years of knowledge, attitudes .National public health Journal; 11(3):115-130.
6. **Alasya E., (2012):** The incidence of eye injuries among children aged 1-6 years and the practice of mothers related with eye injuries. Ophthalmology Journal; 5(6):58-65.

7. **Alexandra C., Justin A., & Vanessa E., (2011):** Developmental trauma disorder toward a rational diagnosis for children with ocular trauma histories. *Pediatric article Annuals Journal*; 35(5):401-408.
8. **Assiut (2016):** Patient Administration Records of Assiut University Hospital.
9. **Brown P & Thomas R (2014):** The incidence of ocular trauma in children .*American Journal of Pediatric*; 60(16):109-112.
10. **Carlsson A., Jansson A., & Dykes A., (2016):** Mothers' awareness towards child eye injuries. *Community public health Journal*; 9(18):220-225.
11. **Carolyn J., Paul S., & Parul D., (2014):** Mothers' attitudes and practice about eye trauma. *British Journal of Ophthalmology*; 83(8):73-76.
12. **Cascairo M., Mazow M., & Pragert T., (2015):** Pediatric ocular trauma. *Pediatric Ophthalmic Journal*; 31(20):312-320.
13. **Ebeigbe J., & Emedike C., (2017):** Parent's awareness and perception of children eye injuries in Nigeria. *Journal of Optometry*; 10(2):104-110.
14. **El Dosoky R., (2012):** Eye injuries among children, knowledge, attitudes and practice. *Eastern Mediterranean health Journal*; 18 (10):1000-1010.
15. **El Gendy M., (2018):** Effect of health education for mothers substitute about growth and psychomotor development and its effect on physical health of maternal deprived children
16. **El hesy A., (2016):** Retrospective study of ocular trauma in Mansoura ophthalmic center. *Journal of Ophthalmology*; 106(4):153-160.
17. **Erci B., & Akturk U., (2016):** Determination of knowledge, attitudes and practice of mothers about eye injuries in children aged 0-5years .*Journal of education and practice*; 7(18):142-150.
18. **Fanella S., Singer A., & Embree J., (2011):** Presentation and management of pediatric ocular trauma. *Canadian Journal of pediatric*; 1(22):97-100.
19. **Hatfield N., (2012):** Broadribb's introductory pediatric nursing, eye trauma, (7thed), Williams &Wilkins Lippincott, pp: 1425-1428.
20. **Jovanovic M., & Medarevic A., (2013):** Mechanical eye injury. *American Journal of Pediatric*; 14 (10):586-591(original article).
21. **Mbogo S., Kahaki K., & Njambi L., (2016):** Knowledge, attitudes and practice of mothers about childhood ocular trauma. *East Africa Ophthalmology Journal*; 20(1):12-20.
22. **Megan J., & Kathleen F., (2015):** Urban and rural epidemiology of eye injury. *Pediatric Journal*; 2 (32):2-10.
23. **Negrel A., & Thylefors B., (2014):** The global impact of eye injuries. *Ophthalmic Journal*; 5(3):143-169.
24. **Ozmen D., & Ergin D., (2017):** Descriptive study on knowledge and practices of mothers on eye injuries prevention for children under 5years. *Journal of family and community education*; 3(13):24-30.
25. **Patient Administration Records, Assiut, (2016).**
26. **Qayum S., Anjum R., & Rather S., (2018):** Prevalence of pediatric eye trauma. *Chinese Journal of Traumatology*; 21(2):100-103.
27. **Rostomian K., Thach A., & Brochert M., (2014):** Open globe injuries in children .*Journal of Ophthalmology*; 2(15):234-240.
28. **Sehagal A., Jain S., & Jyoti M., (2015):** Maternal awareness regarding childhood eye injuries . *Indian Journal of Pediatrics*; 7(2):125-128.
29. **Serinken M., Turker I., & Cetin E., (2013):** Causes and characteristics of home related eye injuries in western turkey. *Indian Journal of Ophthalmology*; 61(4):497-501.
30. **Sii F., Barry R., Blanch R., & Abbott J., (2017):** The UK pediatric ocular trauma study, developmental of a global standardized protocol for prospective data collection in pediatric ocular trauma, *clinical ophthalmology*, 449-452(PubMed).
31. **Sonavane R., Kasturi A., Kiran D., & Kumari R., (2014):** Knowledge and practice regarding eye injuries among mothers of under 15 years children .*Al Amen Med Science Journal*;7(4):284-290.
32. **Thompson C., Kumar N., & Bilson F., (2016):** Profile of pediatric eye trauma at hospital .*Nigeria ophthalmic Journal*; 62 (4): 324-329.
33. **Tomazzoli L., Renzi G., & Mansoldo C., (2014):** Eye injuries in childhood. *European Journal of Ophthalmology*; 13(8):710-713.
34. **Yullish M., Reshef N., Lerner A., & Pikkal J., (2013):** Sport related eye injury in northern Israel .*Israel Medical Association Journal*; 15(3):763-765