Assessment of Parents' Knowledge and Practices Regarding Care of theirChildren with Ophthalmic Disorders

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Background: Childhood ophthalmic disorders can seriously impact development, education, future employment opportunities, and quality of life. **Aim of the Study:** is to assess of parents' knowledge and practices regarding care of their children with ophthalmological disorders. **Research design:** Descriptive research design was used to achieve the aim of this study **Settings:** This study was conducted at the ophthalmological outpatients' clinics which are affiliated to the ophthalmology hospitalin Damanhur City and The specialized ophthalmological outpatients' clinics in National Medical Institute hospital at Damanhur city. **Subject:** A purposeful sample consist of 100 parents having children with ophthalmological problems aged from 3to 6 years old. **Tools:** Two tools were used, **Tool [I]** Structured Questionnaire to assess parents' knowledge regarding ophthalmological disorders. **Tool [II]** observation of the actual parents' reported practices regarding ophthalmological problems. **Results:** The study findings showed that 70.0% of the studied parents had an unsatisfactory level of total knowledge regarding care of their children with ophthalmological problems. Moreover, 85.0% of the studied parents had inadequate level of total reported practices regarding care of their children with ophthalmological problems. There was statistically significant correlation ($P \leq 0.001$)between the total level of knowledge of the studied parents and their total level of reported practices about caring of their children with ophthalmological problem. **Conclusion:** the present study concluded that less than three quarters of the studied parents had unsatisfactory total level of knowledge and the majority had inadequatetotal level of reported practices regarding care of their children suffering from ophthalmological problems. Also, there was a statistically significant relation between the studied parents' total level of knowledge and their educational level and attending previous sessions about ophthalmological problems, while there was a statistically significant relation between the studied parents' total level of reported practices and their educational level. **Recommendations:** Providing training programs for parents to increase awareness and ensure enough knowledge and decreases complications that may occur to their children with ophthalmological disorders.

Key Words: Parents, Ophthalmological Disorders**,** Development, Children.

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Introduction

Childhood ophthalmic disorders can seriously impact development, education, future employment opportunities and quality of life. The consequences are especially severe in low resource settings where resources and education are lacking. Poor education and an inability to fully participate in daily life greatly add to the difficulty and suffering of those children with poor vision or blindness experience **(Lusambo, 2021)**.

It is important that the most eye problems presenting in childhood be corrected as early as feasible during childhood. Failure to correct these problems at an appropriate time early in life may result in permanent visual deficits **(Lumba-Brown, 2018).**

Diseases of the eye may be related to variety of systemic disorders. Isolated problems like infections, congenital anomalies, trauma and vitamin deficiency are also commonly found in children. Prompt management is important for prevention of the complications **(Zou, 2018).**

Children may be affected by conditions not seen in adults, and the examination techniques and treatments that may be needed frequently require subspecialty care. Since the 1960s, pediatric ophthalmology has become established as a distinct subspecialty of ophthalmology **(Tews, 2020).**

Disorders of the eye may be congenital, developmental, hereditary, immune-mediated, traumatic neoplastic and neurological. The ocular system is sub classified by the ocular structures. External disorders are conditions that affect the orbit, lids or lacrimal system **(Thompson, 2018).**

Prevalence of eye diseases differ in different communities according to many factors, which include social and environmental characters of the community, health habits of the community, personnel hygiene and technical methods used in diagnosis of eye diseases. The overall incidence is approximately 2.5 per 100,000 children. **(Rashwan, 2019).**

Common problems include refractive errors, strabismus, amblyopia, infections, and trauma. Other problems encountered include ocular complications of system developmental and genetic conditions, and neoplasms affecting the globe and orbits **(El-Radhi, 2021).**

The common symptoms arise from eye strain include inflammation, aching or smoothing of the eyes, squinting, a short attention span, frequent headaches, difficulties with school work, or inability to see **(Gupte, 2019).**

Other signs and symptoms of potential eye problems include rubbing eyes excessively, shutting or covering one eye when reading or concentrating, tilting head or thrusting head forward to see more clearly, difficulty in reading or "close-up" tasks, inability to see, increased incidence of blinking, especially when doing "close-up" tasks, inability to see distant objects clearly, and squinting or frowning to see. Moreover, crossed eyes appearance, swelling, drainage, excessive tearing of the eyes, recurring infections, physical complaints, dizziness, nausea vomiting, double vision and blurring vision are other symptoms **(Hashemi, 2021).**

Ophthalmic nurses may play an essential role in vision care, especially in the prevention and screening of ocular diseases especially in low-resource settings and rural or urban areas where ophthalmologists and optometrists were unavailable.

Several ocular diseases can be screened and diagnosed by well-trained ophthalmic nurse practitioners. These specialized trained nurses may play a significant role in public awareness, diagnosis, or management of ocular conditions, Ophthalmic nurses have taken on extended functions, including; preoperative cataract evaluations, and management of nurse-led practices to accommodate the burden of eye care services. However, some potentially blinding conditions, including glaucoma, diabetic retinopathy, and retinopathy of prematurity, may be diagnosed by ophthalmic nurses **(Rashidian, 2022).**

Care and prevention of vision problems includes the following: screening for visual problems by mothers for their children, wearing safety glasses or goggles during hazardous activities, taking care to keep foreign objectives and chemicals out of the eye, providing regular prenatal care for pregnant mothers to help prevent problems in developing baby, and seeking early evaluation and treatment for eye infections **(Jacob, 2007).**

Primary eye care includes the following: clinical eye activities that are performed by parents, eye medications as drops instillation, ointments, hot and cold compresses and eye exercises. Hot and cold eye compresses may be used to relieve discomfort, because heat increases circulation (which enhances absorption and decreases inflammation), hot compresses may promote drainage of superficial infections, cold compresses can reduce swelling or bleeding and relieve itching. Eye irrigation is used mainly to flush secretions, chemicals, and foreign objects from the eye **(WHO, 2018).**

Eye exercises are used to improve vision skills such as eye

movement control, eye focusing and coordination, and the teamwork of the two eyes **(Elsman, 2019)**.

Significance of The Study:

Children eye problems represent a traumatic and stressful experience for their mothers; especially in rural areas where there is limited health care. Besides, the lack of parents' awareness to handling their children, financial management and discrepancies in caring for their children have caused the researcher to assess parents' knowledge for their children with vision problems and to correct their mistradition and misconception about the care of their children **(Hassan, 2018).**

Globally, an estimated 70 million blind cases per year are due to childhood blindness. Approximately 500.000 children become blind every year, which is equivalent to one child every minute; 60% die within 1 to 2 years after becoming blind. The prevalence of childhood blindness is especially high in low-resource areas; among 1.5 million blind children worldwide, 70-90% of them are in the poorest countries of Africa and Asia **(Lusambo, 2021).**

According to the statistical department of Mansoura University (2021), the number of children having ophthalmological disorders is 3780, while according to the statistical department of Cairo University, the number of children having ophthalmological disorders is 1511, and according to the statistical department of Ain Shams University, the number of children having ophthalmological disorders is approximately 1320. The three settings were where the data of the study was collected **(Mokbel, 2021)**.

Aim of The Study

The aim of this study is to assess parents' knowledge and practices regarding care of their children with ophthalmic disorders.

Research Questions:

The following research questions are formulated to achieve the aim of this study:

What is the level of parents' knowledge and practices regarding care of their children with ophthalmic disorders?

Is there a relation between the parents' knowledge and practices regarding care of their children with ophthalmic disorder and their socio demographic characteristics?

Research Design:

Descriptive research design was used to achieve the aim of this study

Research Settings:

This study was conducted at the Ophthalmological Outpatients' Clinics which are affiliated to: ophthalmology hospital at Damanhur city and The specialized ophthalmological outpatients' Clinics in National Medical Institute hospital in Damanhur that affiliated.

Research Subject:

A purposeful sample was used to achieve the aim of this study. The study sample consist of 100 parents having children with ophthalmological problems attended to the previously mentioned settings.

Inclusion Criteria:

The studied sample was composed of 100 parents regardless their age, residence and educational level having children with ophthalmological problems aged from 3 to 6 years, children from both gender and free from any other chronic physical or mental disease and attended to previously mentioned setting.

Tools of Data Collection:

Two tools were used to conduct this study

First Tool: A Structured Questionnaire Sheet:

This tool was designed by researcher in the light of related literature. It was written after reviewing updated articles in a simple Arabic language in relation to the following parts:

Part I: Characteristics of the studied parents such as age, educational level qualification, place of residence, consanguinity between parents and attending previous sessions about ophthalmological problems

Part II: Characteristics of the studied children such as age, gender, child ranking and number of siblings.

Part III: Assessed the medical history of children suffering from ophthalmological problem such as: presence of ophthalmological problems in the family, present complain and ophthalmological follow up

Part IV: Concerned with assess the studied parents' knowledge about ophthalmological problem the questionnaire consists of 30 closed end question included the following (definition of ophthalmological problems, causes, symptoms, complications and types.

Scoring System for Knowledge:

According to the answers obtained from the studied parents a scoring system was followed. The total score was 60 and converted to 100%. The studied parents' answer, where (2)

score was given for correct answer and complete answer, (1) score for incomplete answer, and (zero) for incorrect answer. According to the studied parents' answer, their total level of knowledge was categorized as the following: ≥ 75.0%. satisfactory knowledge equal ≥ 45 of question was answered or ≤ 75.0% unsatisfactory knowledge.

Second Tool: Parents' Reported Practices

Practice checklists was adapted and modified by the researcher after reviewing the related literature from ***Wiles, (2019).*** It included 69 items with done always, sometimes, never done. Answer format was to assess the studied parents' actual reported practices regarding care of their children with ophthalmological problems, it was included the following: hand washing (7 items), washing child's eyes (11 items), eye drops instillations (10 items), and eye ointment administration (11 items), protect the child from eye diseases (11 items), applying hot or cold compresses for child's eyes (6 items), and doing exercises for child's eyes (13 items)

Scoring System for Reported Practices:

The total scores of the studied parents' practices ware 69 scores and converted to 100% parents' practices were evaluated by giving (1) score for done answer and (0) score for not done answer, then the scores are converted to percentage and total score categorized as the following: ≥ 80.0% adequate practices equal ≥ 55 of question was answered and inadequate practices if the percent score was ≤ 80.0%.

Tools Validity:

The validity of the tools were tested via three experts in pediatric nursing specialty from Faculty of Nursing - Helwan University, to ensure its validity for comprehensiveness, accuracy clarity and relevance. The necessary modifications were done accordingly.

Tools Reliability:

Reliability of the tools were tested to determine the extent to which the questionnaire items related to each other. Cronbach's Alpha was used to determine the internal reliability of the tool. It was used to determine the internal reliability of the tool. It was (0.938) for knowledge questioner and (0.974) for practice checklists.

Ethical Considerations:

An official permission to conduct the proposed study was obtained from the Scientific Research Ethics Committee of Scientific

Research Ethics Committee Faculty of Nursing- Helwan University. Participation in the study was voluntary and subjects were given complete full information about the study and their role before signing the informed consent and that they have the right to refuse to participate. The ethical considerations included explaining the purpose and nature of the study, stating the possibility to withdraw at any time, confidentiality of the information. Ethics, values, culture and beliefs was respected.

Pilot Study:

A pilot study has been conducted to test the clarity, validity, applicability of the tools. It has been conducted on 10 parents (10%) from the total study sample no modification done, so, the parent participating in the pilot study were included in sample size.

Field Work:

The actual field of work was carried out by over period of six months started from the begging of April (2022) to the end of September (2022), each parent was interviewed and assessed individually using the study tools. The researcher was available at the previously mentioned settings two days/week from 9 am to 2 pm O'clock and the researcher explained the aim and nature of the study to subjects to obtain their approval. The time consumed for completing of the questionnaire format was 10-15 minutes during the waiting time of outpatients' clinics; the researcher was available two days in each setting alternately. As regards the studied parents' reported practices, time consumed for answering was 15-20 minutes.

Administrative Design:

After explanation of the study aim and objectives, an official permission was obtained from the Dean of Faculty of Nursing, Helwan University to the administrators of the previously mentioned settings to conduct this study, the permission letter included the necessary data, the purpose and nature of the study.

Statistical Design:

Data were coded, scored, tabulated, and analyzed by computer using the "statistical package for social sciences" (SPSS) version 20. Numerical data were expressed as mean±SD. Qualitative data were expressed as frequency and percentage. Relation between different qualitative variables were tested using Chi-square test (x) while spearman correlation analysis was used for assessment of the inter-relationships among quantitative variables. Statistical significance was considered at P-value < 0.001

Results:

Part I: Characteristic of the studied parents had children with ophthalmological problems:

Table (1): Distribution of studied parents according to their sociodemographic characteristics (n=100)

Items	No	%
Age/ years		
20<30	37	37.0
30<40	63	**63.0**
≥ 40	00	0.00
Educational qualification		
Do not read and write	7	7.0
Read and write	6	6.0
Basic/Secondary education	12	12.0
Higher education	75	**75.0**
Place of residence		
Rural	33	33.0
Urban	67	**67.0**
Consanguinity between parents		
Yes	16	16.0
No	84	**84.0**
Attending previous sessions about ophthalmological problems		
Yes	5	5.0
No	95	**95.0**

Table (1) showed that, more than half (63.0%) of the studied parents in the age group 30<40 years old. And three quarters (75.0%) of the studied parents have higher education. Additionally, this table showed that, more than half (67.0%) of the studied parents live in urban areas. Furthermore, more than three quarters (84.0%) of couple wasn't consanguinity between them, as for the majority (95.0%) of the studied parents didn't attended previous sessions about ophthalmological problems.

Part III: Knowledge of studied parents regarding ophthalmological problem

Table (5): Distribution of studied parent according to their level of knowledge regarding ophthalmological problem. (n=100)

Knowledge items	Correct		Incorrect	
	No	%	No	%
Causes of ophthalmological problems				
Hereditary	74	74.0	26	26.0
Infection	3	3.0	97	**97.0**
Accident	8	8.0	92	92.0
Other	15	15.0	85	85.5
Symptoms of ophthalmological problem in children				
Burning Sensation in the eye	35	35.0	65	**65.0**
Blurred vision	35	35.0	65	**65.0**
Presence of ophthalmological complications				
Presence (blindness)	15	15.0	85	**85.0**
Not present	85	**85.0**	15	15.0

As observed from **table (5 a),** the majority (97.0 %) of the studied parents had poor knowledge regarding causes of ophthalmological problem in children as infection causes. Additionally, more than half (65.0 %) of he studied parents had poor knowledge regarding symptoms of ophthalmological problem in children. Moreover, more than three quarters (85.0%) of children reported no ophthalmological complications.

Table (6): Distribution of studied parent according to their level of knowledge regarding ophthalmological problem. (n=100)

Knowledge items	Correct		Incorrect	
	No	%	No	%
Types of ophthalmological problems				
Refractive error	33	33.0%	67	67.0%
Myopia	46	46.0%	54	54.0%
Astigmatism	47	47.0%	53	53.0%
Hyperopia	69	69.0%	31	31.0%
Glaucoma	43	43.0%	57	57.0%
Squint	63	63.0%	37	37.0%
Conjunctivitis	65	65.0%	35	35.0%
Retinoblastoma	18	18.0%	82	**82.0%**
Night blindness	47	47.0%	53	53.0%
Eye bleeding	73	**73.0%**	27	27.0%
Blindness	72	72.0%	28	28.0%

As shown from **table (6),** more than three quarters (82.0 %) of the studied parents had incorrect answer regarding retinoblastoma. Meanwhile, slightly less than three quarters (73.0 %) of the studied parents had correct answer regarding eye bleeding.

Table (6): Distribution of total level of the studied parents' knowledge levels. (n=100)

Items	Satisfactory		Unsatisfactory	
	No.	%	No.	%
Total level of parent knowledge	**30**	**30.0**	**70**	**70.0**

Figure (1): Percentage distribution of the studied parents' total level of knowledge regarding care of their children with ophthalmological problem.

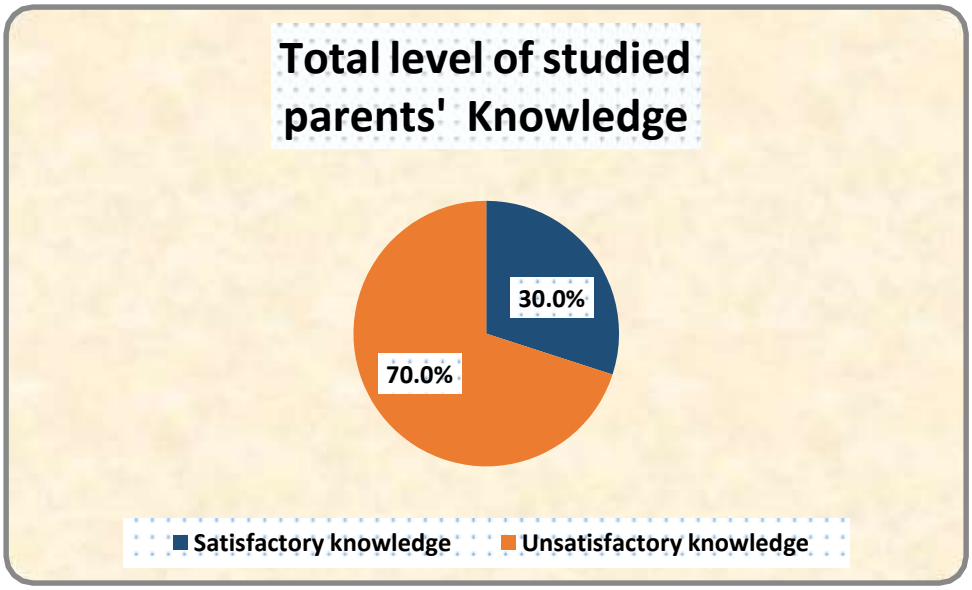

Table (6) and Figure (1) show that, less than three quarters (70.0%) of the studied parents had unsatisfactory level of total knowledge regarding care of their children with ophthalmological problem.

Table (7): Distribution of the studied parents' total levels of reported practices regarding care of their children with ophthalmological problems (n=100)

Items	Adequate		Inadequate	
	No.	%	No.	%
Washing hand	16	16.0%	84	84.0%
Eye wash	19	19.0%	81	81.0%
Putting eye drops	7	7.0%	**93**	**93.0%**
Putting eye ointment	6	6.0%	**94**	**94.0%**
Protect the child from eye diseases	9	9.0%	**91**	**91.0%**
Applying hot compresses	5	5.0%	**95**	**95.0%**
Applying cold compresses for child's eyes	6	6.0%	**94**	**94.0%**
Exercises done for child's eyes	20	20.0%	80	80.0%

Table (7) Show that,93.0%,94.0%,91.0%,95.0% and 94.0% of the studied parents had inadequate practices regarding to put eye drops, put eye ointment, protect the child from eye diseases, apply hot compresses, apply cold compresses for child's eyes respectively.

Table (8): Distribution according to total level of the studied parent' reported practices

Items	Adequate		Inadequate	
	No.	%	No.	%
Total level of studied parents' practices	**15**	**15.0**	**85**	**85.0**

Figure (2): Percentage distribution of total level of the studied parents' reported practice regarding care of children with ophthalmological problem.

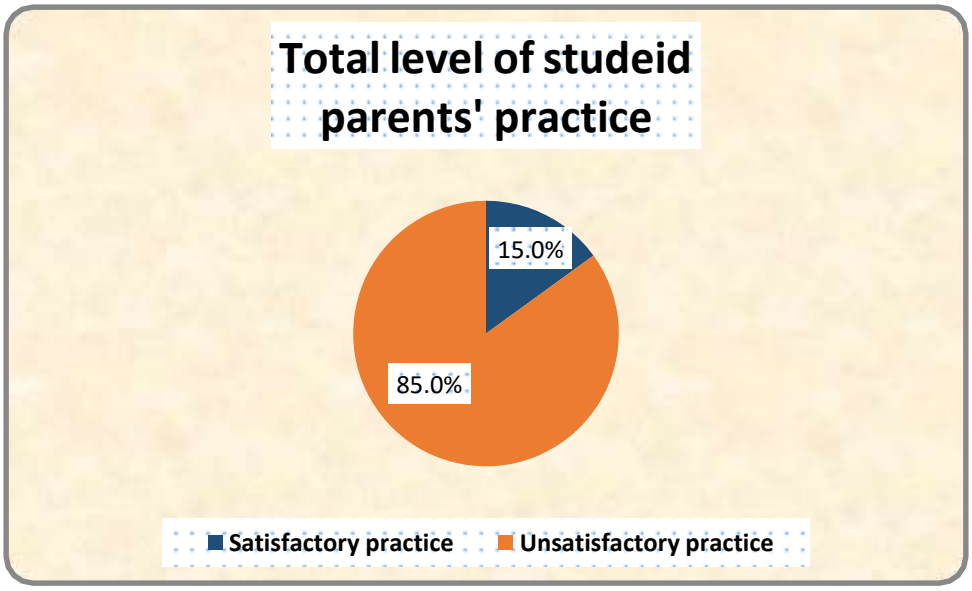

Table (8) and **Figure** (2) show that the great majority (85.0%) of the studied parents reported inadequate practices level related to care of their children with ophthalmological problems, while the rest (15.0%) of them reported adequate practices.

Part V: Relation between the study variables

Table (9): Relation between the studied parents' sociodemographic characteristics and their total level of studied knowledge about ophthalmological problem(n=100)

Sociodemographic characteristics	Total level of the studied parents' knowledge					
	Satisfactory (N=30)		Unsatisfactory (N=70)		Chi square	P value
	N	%	N	%		
Age/ years						
20<30	12	40.0	25	35.7	0.165	0.822
30<40	18	60.0	45	64.3		
≤ 40	0	0.0	0	0.0		
Educational qualification						
Do not read and write	4	13.3	3	4.3	10.904	0.001**
Read and write	2	6.7	4	5.7		
Basic / Secondary education	3	10.0	9	12.9		
Higher education	21	70.0	54	77.1		
Place of residence						
Rural	18	60.0	15	21.4	14.13	0.000
Urban	12	40.0	55	78.6		
Consanguinity between parents						
Yes	0	0.0	16	22.9	8.16	0.001**
No	30	100	54	77.1		
Attending previous sessions about ophthalmological problems						
Yes	5	16.7	0	0.0	12.28	0.001**
No	25	83.3	70	100.0		

(* A statistical significant difference P ≤ 0.05)

Table (9) represent that, statistically significant relation (P ≥ 0.05) between total knowledge of studied parents about caring of children with ophthalmological problem and their educational level. While there were no statistically significant differences (P ≤ 0.05) between total knowledge of studied parents and their age

Table (18): Relation between the studied parents' sociodemographic characteristics and their total level of reported practices regarding ophthalmological problems. (n=100)

Sociodemographic characteristics	Total level of studied parents' reported practices					
	Adequate (N=15)		Inadequate (N=85)		Chi square	P value
	N	%	N	%		
Age						
20<30 years	6	40	31	36.5	0.068	0.504
30<40 years	9	60	54	63.5		
≤ 40 years	0	0.0	0	0.0		
Educational level						
Don't read and write	0	0.0	7	8.3	7.425	0.042*
Read and write	3	20.0	3	3.5		
Basic/ Secondary education	1	6.7	11	12.9		
Higher education	11	73.3	64	75.3		
Place of residence						
Rural	3	20	30	35.3	1.349	0.169
Urban	12	80	55	64.7		
Consanguinity between parents						
Yes	3	20	13	15.3	0.210	0.445
No	12	80	72	84.7		
Attending previous sessions about ophthalmological problems						
Yes	0	0.0	5	5.9	0.929	0.436
No	15	10	80	94.1		

(* A statistical significant difference P ≤ 0.05)

Table (18) represent the statistically significant relation ($p \geq 0.05$) between total level of reported practice of the studied parents about caring of children with ophthalmological problem and their educational level. While there were no statistically significant relation ($p \leq 0.05$) between total level of studied parents reported practice of and their age.

Table (19): Correlations between the studied parents' total level of knowledge and total level of studied parents' reported practices regarding care of their children with ophthalmological problems. (n=100)

Total level of studied parents' reported practices	Total level of studied parents' knowledge					
	Unsatisfactory		Satisfactory		Chi square	P value
	N	%	N	%		
Adequate	12	80.0	58	68.2	12.9	0.000
Inadequate	3	20.0	27	31.8	51	

(A highly statistical significant difference P ≤ 0. 001)**

Table (19) show statistically significant relation (P ≤ 0.001) between the total knowledge of studied parents and their total reported practice about caring of children with ophthalmological problem. Where 80% of the studied parents who had unsatisfactory practice level reported doing adequate total knowledge level.

Discussion

Eye problems in children that can lead to visual impairment constitute a social, emotional, and economic challenge for their families; as a consequence, the children's have decrease opportunities to perform school or obtain job. **Carol et al., (2018)** The lack of knowledge among caregivers limits the development of effective intervention and health care programs. Eye health education and awareness efforts can aid in the elimination of preventable blindness caused by various eye problems **Lee et al., (2022)**. Therefore, parents caring for children with ophthalmological disorders should be given adequate guidance and information regarding ophthalmological management.

As Regards the studied parents' characteristics, the present study revealed that, more than half of studied parents aged 30 to < 40 years old, this finding agrees with study by **El-sayed et al., (2018)** who conduct study about "effect of instructional guidelines on mothers of children with conjunctivitis" and reported that 30.0% of studied sample had aged 30 to < 40 years old. From researcher's point of view most of the studied parents caring with child ophthalmological health were younger in the age

As Regards the educational level, the present study revealed that, around

three fourths of the studied parents were higher education. This result disagrees with study by **Hassan et al., (2018)** who conduct study entitled "the prevalence of eye and vision problems among rural Egyptian preschooler" and reported that 20.0% of studied sample had university graduated. From researcher's point of view, the fact that parents with higher education were more care for child and quality of live in the community.

As Regards the place of residence, the present study revealed that, less than three quadrant of the studied parents were urban. This result disagrees with study by **El Sayed et al., (2023)** who conduct study entitled "childhood glaucoma profile in a tertiary in Egypt according to childhood glaucoma research network classification "and reported that 68.0% in rural areas. From researcher's point of view, the parents from urban area more interested with eye health for their children and health care services were available.

As regards the consanguinity between the studied parents, the present study revealed that, more than three quadrant of the studied parents were no consanguinity between them. This result disagrees with **Yamamah et al., (2015)** who conduct study entitled "prevalence of visual impairment and refractive errors in children of South Sinai, Egypt" and reported that high significant with consanguinity.

As regards attending previous sessions about ophthalmological problems, the present study revealed that, more than three quarters of the studied parents were not attending sessions. This result agrees with **Said et al., (2022)** who conduct study entitled "Effect of Empowerment Program on Parents' Self-Competence regarding Caring for their Children with Eye Injuries" and reported that 100.0% of the studied parents weren't attending previous sessions about ophthalmological problems. From researcher's point of view, these finding shed the light about importance of regular training and educational courses about ophthalmological problems.

In this context, about three quarters of the studied children stated that the cause of their eye morbidity was hereditary. followed by accidental causes, then infectious. **McCormick et al., (2022)** found that The primary causes of ocular morbidity were various infectious eye problems. The second most frequent categories of eye disorders detected were various types of ocular allergies. This can be connected to the lack of safety precautions in classrooms and schools. From researcher's point of view, improvement the infection control programs help children well

development with good health and decrease ophthalmological problems.

According to the results of the current study, a few children reported having eye symptoms. That might be connected to the fact that most children don't follow good hygiene, like washing their hands, which makes them more susceptible to eye disease. This agrees with **Falkenberg et al., (2019)** who found that; Only a handful of the children who were checked reported having eye disorders, and several others weren't even aware that they did. From researcher's point of view, assessments of children in nursery schools and elementary schools for early detection of any ophthalmological problems is very important .

The most commonly reported eye symptoms were burning Sensation in the eye, blurred vision, pain and eye itching this may be explained by that the most common eye diseases in children were myopia and conjunctivitis. **Holzberger et al., (2022)** indicated that the primary symptoms that drew attention for medical evaluation were the signs of inflammation, including redness, itching, and swelling. From researcher's point of view, provide schedule of infants screening for early detection of any ophthalmological problems.

Additionally, **Hogarty et al., (2019)** noted that the main symptoms of myopia were blurry vision when staring at a faraway object but clear vision when looking at a close item. Higher prevalence of conjunctivitis has been reported by **Sun et al., (2017)** who attributed variances in socioeconomic class, children's personal cleanliness, and seasonal fluctuations in conjunctivitis occurrence to the variable in conjunctivitis prevalence.

The present findings illustrated that due to a lack of health awareness from the media or ministry of health guidance obtained by parents of children with eye disorders, the majority of the studied parents had limited knowledge of ophthalmological problems. This agrees with **Lam et al., (2021)** revealed decrease awareness of visual symptoms, particularly among groups with basic education. From researcher's point of view, Provid training programs to increase awareness of parents having children with ophthalmological problems

Assessing level of knowledge towards different common health problems was illustrated. The majority of the studied parents identified genetic as the primary cause of eye disorders and burning, discomfort, itching, and blurred vision as the primary symptoms during the assessment of the studied parents'

knowledge gaps regarding care for children with ophthalmological difficulties. Yet, they were able to identify the majority of congenital abnormalities, including eyeball size. **Wood et al., (2021)** clarified that improving the knowledge of mothers towards eye problems, its causes, symptoms and early seeking of medical care can dramatically decrease the rate of childhood ocular morbidity and can prevent blindness.

As regards presence of ophthalmological complications, the present study revealed that, more than two thirds of children reported no ophthalmological complications. This result agrees with **Rateb et al., (2019)** who conduct study entitled "Outcome of a low-cost glaucoma implant versus the baerveldt glaucoma implant for pediatric glaucoma in a tertiary hospital in Egypt" and reported that less than half of children reported no ophthalmological complications. From researcher's point of view, encourage regular planed follow up of children with ophthalmological problems for early detection of complication.

The primary eye problems among the children in the current study are refractive errors, which are primarily responsible for low vision and visual impairment, such as myopia (which affects more than half of the analyzed children), hyperopia, and astigmatism. This agrees with the finding of **Tagoh et al, (2020)** in Zimbabwe, as it was reported that over a quarter of the outpatient attendance at all eye clinics and hospitals was due to refractive errors.

As noticed from findings of the present study**,** which illustrated that more than half of the studied parents were able to correctly define myopia, while the majority of them were able to clearly define hyperopia. **Gaurisankar et al., (2021)** discovered that almost two thirds of the participants in their study could define both myopia and hyperopia.

Moreover, the current study assessed the level of the studied parents' knowledge about glaucoma, nearly half of study subjects have true knowledge about definition and symptoms of glaucoma.

The current study revealed that the highest level of knowledge was in squint, conjunctivitis, more three fourth of the studied parents knew squint definition. **Leiderman et al., (2019)** suggested that the maximum "critical time" in humans was immediately after birth until age two. Moreover, **Singh et al., (2017)** warned the fact that each eye looks in a different direction and sends a different picture to the brain when a child develops a squint. The two images are so unlike to one another that it is challenging for the brain to combine them into a single, distinct image. This could result in double

vision since the eyes' coordination has broken down.

In contrast, the lowest level was in retinoblastoma and treatment of squint. High level of unsatisfactory knowledge may raise attention to increase efforts directed to health education to caregivers, and also may interpret the high prevalence of eye problems through periodic medical consultation. The topics that took the lowest scores in the level of knowledge should be a focus for further awareness campaigns.

Consistently **Lorenzini et al., (2020)** found that the majority of respondents (less than three quarters) had poor knowledge levels, and suggested innovative education program. In a study performed by **Vecchiato et al., (2019)** it was found that illiteracy and beliefs can play a significant role in not seeking a particular eye treatment. In another study done by **Mactaggart et al., (2019)** they found that there was a lack of awareness of blindness and visual impairment. They added that certain eye conditions needed to be understood by the community, therefore eye health promotion activities and strong primary health care are important.

Moreover, **Wallace et al., (2018)** recommended a primary, secondary and tertiary comprehensive approaches for prevention of all childhood eye diseases like vitamin A deficiency, trachoma, measles, diabetic retinopathy, refractive errors, etc. Furthermore, they highlighted that awareness and health education continue to play very important roles if we want to transcend the barriers and make eye care availed by all.

As regarding the practice of hand washing, the current study reveals that most of the the studied parents always didn't wash hand steps before giving treatment for child. **Hillier et al., (2020)** stated that hand washing was the single most effective way to prevent the spread of infection. **Shehu et al., (2019)** found a strong evidence that hand washing with soap can considerably reduce the incidence of infectious eye diseases.

Gizaw et al., (2019) recommended hand washing when dealing with children in the following situations; at the start and end of every play session, before preparing/serving food, before and after assisting children to eat, before and after assisting a child in the toilet, or changing a nappy, before and after touching any cut, wounds or rashes, after handling dirty items (e.g. handling rubbish), and when hands are visibly dirty.

Moreover, **Shehu et al., (2019)** stated these steps for proper hand washing for parents; removing any jewelry that may hinder washing all

hand surface, wetting hands with warm running water, applying liquid soap, rubbing hands together to cover all surface and in-between the fingers for 20 seconds, rinsing hands with soap, and drying hands thoroughly with single-use paper towel. This usually took between 40-60 seconds.

In using eye ointment; in current study indicated that most of the studied parents never followed good practices in using eye ointments, especially in the items of using ointments prescribed by doctors, wash hands thoroughly with soap and water, and Tilt the child's head forward slightly. However, the least followed practice was squeeze the ribbon of the ointment into the lower eyelid, which might be cultural belief.

Alessa et al., (2022) noted that improper use of ointments had led to more complications. So, they summarized the steps for efficient use of ointments to be: washing hands thoroughly before administration, tilting the head slightly backwards and looking up, using the index finger, gently pulling down lower eyelid to form a pouch, squeezing the tube in a sweeping motion to apply about 0.5 - 1 cm3 of the ointment inside the lower eyelid, ensuring that the tip of the tube did not touch eye, eyelid or eyelashes to avoid contamination, finally release the finger and blink gently.

In this context, the studied parents reported the practice of using eye drops in as follows; the studied parents never applied eye drops properly, but didn't make sure that no discharge was on cheeks, that may be explained by the irritable nature of children and inability to control their repeated movements. **Alessa et al., (2022)** cleared that the proper use of eye drops was in the same steps explained for ointments, with addition to shaking the bottles well before use.

Practice of eye compresses**,** where most of the the studied parents never applied hot compresses well, except for the step of fill a medium sized bowl with a warm tap water. Regarding cold compresses, the practice was never performed except in the item of removing excess water by twisting the cloth before applying it gently to the child's closed eyelids. **Prameswari et al., (2023)** explained the role of cold compresses in protecting the body tissues by slowing the metabolic rate; they were frequently used to treat allergies in the eye.

The value of eye exercise was recommended by many ophthalmologists for the success of treating many eye problems. In current study reveals that**,** the studied parents sometimes performed eye exercises well. This could be related to its known benefits to parents. **Wu, (2020)** stated that the role of self-helping programs of eye exercises was claimed to reduce

or eliminate the need for glasses and contacts. **Shanmugam et al., (2022)** revealed that eye exercises can alter the eye's basic anatomy significantly or eliminate presbyopia which no one escapes after a certain age. Also, it may benefit children with certain early vision problems, such as amblyopia or "lazy eye," who may need a specific type of vision therapy to make sure their eyes work together properly (binocular vision) and for the vision to develop normally. A long-standing criticism of eye exercises was mentioned by **Aras Bayram et al., (2020)** who demonstrated that eye exercises effectively treated myopia or hyperopia.

The current findings identified the cases where the studied parents usually repeat washing the eye with a doctor's guidance. Conjunctivitis and ocular itching were the most common conditions in which mothers usually washed eyes of the child. In addition, **Numan et al., (2021)** noticed that just bathing the eyes, using cool clean water, may be good line of treatment of most cases of conjunctivitis. Additionally, **Willis et al., (2020)** recommended eye wash in those with sensitive eyes, stating that it could provide relief to the painful side effects of sensitivity. However, prolonged usage of such products would cause mild side effects, such as the reddening of the eyes and/or pupils, and causing itchiness.

The total practice of the studied parents towards ophthalmological diseases was found, where the majority of the duties were done inadequately in comparison to less than one third not done at all. This may explain the high prevalence of some eye problems which had been eliminated in many countries, especially infectious eye diseases. Inadequate practice of caring of eye diseases was represented in about two thirds of participants in a study done by **Abuhammad et al., (2021)** classified the parent's practices towards eye diseases in traditional eye medication (less than one tenth), self-medication (nearly tenth), not treating eye diseases (more than one fourth) and going to the hospital (more than three fifths).

Moreover**, Alessa et al., (2022)** found that malpractice towards childhood ophthalmological diseases, especially using home remedies and improper use of medications, may lead to more complications than the actual disease. In a study done by **Ozioma et al., (2019)** they concluded that malpractice in the form of traditional medicine was the best treatment for cataract represented by more than one tenth of participants, and interestingly nearly one tenth of participants specifically reported steam from boiling rice to be the best treatment for cataract. From the researcher' point of view encouraging training practices programs for parents about caring of

their children with ophthalmological problems as follow up study.

Misconceptions and unscientific methods by parents in management of their children having eye diseases:

The care givers (parents) must be aware how to treat the reasons that lead to the children's vision loss.

Conclusion

less than three quarters of the studied parents had unsatisfactory total level of knowledge and the majority of them had inadequate total level of reported practices regarding care of their children suffering from ophthalmological problems. Also, there was a statistically significant relation between the studied parents' total level of knowledge and total level of reported practices and their characteristics (Educational qualification, place of residence, consanguinity between the studied parents and attending previous sessions about ophthalmological problems). A statistical significant relation $P \leq 0.05$).

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Recommendations

Based on the finding of the current study, the following are recommended by the researcher:

- Providing training programs to increase awareness of parents having children with ophthalmological problems to ensure enough knowledge and decreases complications that may occur to children.
- Encouraging assessments of children in nursery schools and elementary schools for early detection of any ophthalmological problems.
- Instruct parents regarding the importance of schedule of infants screening for early detection of any ophthalmological problems.
- Encouraging regular planed follow up of children with ophthalmological problems for early detection of complication

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