

## Post Operative Care Practices among Caregivers and Patients with Pterygium

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### Abstract:

**Background:** Pterygium is an abnormal growth of epithelial and fibro vascular tissue invading the cornea across the limbus and can lead to impaired vision. So awareness about pterygium enables the patients to take or make informed decisions. **The aim of this study was** to assess post-operative care practices among caregivers and patients with pterygium. **Research design:** A descriptive research design was used to conduct the study. **Sample:** Convenience sample of post-operative Pterygia patients and their caregivers (n=100). **Setting:** This study was conducted at Out-Patient Ophthalmologist Clinic affiliated to Ophthalmology University Hospital and Out Patient Ophthalmologist Clinic Benha Ophthalmology. **Tools:** Three tools were used to conduct the study 1) A structured interviewing questionnaire, part I: A- To assess socio-demographic characteristics of the studied patients and their caregivers, patients' medical history, knowledge of patients and their caregivers regarding Pterygium. **Tool II:** Concerned to assess practices of patients and their caregivers regarding pterygium., and home environmental condition. **Tool III:** Concerned with attitude of caregivers regarding pterygium. **Results:** 58.0% of studied patients had poor total knowledge level, 19.0% of caregivers had poor total knowledge level regarding pterygium. 60.0% of the studied patients had unsatisfactory total practices and 62.0% of caregivers had satisfactory total practices. 57.0% of the studied caregivers had negative total attitude level toward the pterygium. **Conclusion:** There was negative correlation between the studied patient 'total knowledge and their total practices level. While there was positive correlation between the studied caregivers' total knowledge and their total practices level. **Recommendations:** Distributing brochures and posters within outpatients to patients' and caregivers' to raise knowledge and care practices about pterygium.

**Keywords:** Pterygium, Post-operative care, Caregivers.

### Introduction

A pterygium is a non-cancerous growth that forms on the conjunctiva, the thin tissue that covers the white part of the eye (sclera). It typically starts from the inner corner of the eye and grows toward the cornea, which is the clear, dome-shaped surface that covers the front of the eye. Pterygium is often associated with exposure to ultraviolet light, such as from sunlight, and is more common in

individuals who spend a lot of time outdoors (Neale et al., 2023).

Several risk factors are associated with the development of pterygium. Prolonged exposure to ultraviolet light, particularly from sunlight, is a significant risk factor. Individuals, who spend a lot of time outdoors, especially in sunny environments, are more prone to developing pterygium. Other risk factors include living in areas with high levels

of UV radiation, having a family history of pterygium, and being male. Additionally, certain occupations that involve frequent exposure to UV light, such as farming or fishing, may increase the risk of developing pterygium (**Chaidaroon et al., 2022**).

Pterygium can present with various signs and symptoms. Common symptoms include redness, irritation, and a foreign body sensation in the affected eye. The eye may feel dry and gritty, and individuals may experience excessive tearing. Pterygium can also cause blurred vision if it grows over the cornea and interferes with the visual axis. In some cases, the growth may become inflamed and swollen, leading to increased discomfort. If any of these symptoms are experienced, it is important to consult an eye care professional for evaluation and appropriate management (**Iqbal et al., 2022**).

Potential complication of pterygium is astigmatism, which is an irregular curvature of the cornea that affects vision. As the pterygium grows and extends onto the cornea, it can cause distortion and irregularity in the corneal shape, resulting in astigmatism. Another complication is visual impairment, especially if the pterygium grows large enough to cover the central part of the cornea, obstructing the visual axis. In rare cases, the pterygium may become recurrent or cause persistent inflammation, requiring surgical intervention (**Minasian & Hope, 2022**).

The treatment of pterygium depends on the severity of symptoms and the extent of growth. Mild cases may be managed with the use of lubricating eye drops and artificial tears to alleviate dryness and irritation. In more advanced cases where symptoms are persistent or vision is affected, surgical removal of the pterygium may be

recommended. Surgical options include techniques such as excision with conjunctival autograft or amniotic membrane graft. These procedures aim to remove the pterygium and prevent its recurrence (**Cioba et al., 2023**).

Surgical removal is the primary treatment for pterygium when it causes significant symptoms or affects vision. The operation involves the excision of the pterygium tissue and may be performed using different techniques, such as conjunctival autograft or amniotic membrane graft. Post-operation, patients are typically prescribed eye drops and medications to prevent infection and reduce inflammation. They are advised to avoid rubbing or touching the eye, wear protective eyewear, and follow proper hygiene practices. Regular follow-up visits with the ophthalmologist are important to monitor the healing process and detect any potential complications (**Philpott, 2021**).

The caregiver's role with post-operative pterygium patients is crucial in supporting their recovery. Caregivers can assist patients with administering prescribed eye drops and medications, ensuring they follow the recommended dosing schedule. They can help create a comfortable and clean environment to facilitate healing, and encourage adherence to post-operative care instructions, such as avoiding rubbing or touching the eye. Caregivers can also assist with daily activities as needed, such as meal preparation or transportation to follow-up appointments. Regular communication with the patient's healthcare team and being attentive to any signs of complications or changes in symptoms are essential for providing optimal care and support during the post-operative period (**Jellinek & Cressey, 2019**).

The role of a community health nurse with post-operative pterygium patients involves

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providing comprehensive care and support. The nurse can assess the patient's condition, monitor the healing process, and educate them about post-operative care instructions. They can provide guidance on proper eye hygiene, administration of prescribed medications, and management of any discomfort or complications that may arise. The nurse can also offer emotional support and address any concerns or questions the patient may have. Additionally, they may collaborate with other healthcare professionals to ensure coordinated care and facilitate a smooth transition from hospital to home (Hong, 2022).

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

Recurrence of pterygium still remains the most inexplicable complication moreover, recurrent pterygium cases are more difficult to handle than the primary pterygium, and it is of great importance to determine the treatment method with the lowest recurrence rate. Prompt referral by primary care providers to ophthalmologists is needed. A coordinated effort between physicians, optometrists, nurses, and pharmacists can benefit patients. Post-operative care is very important, all patients and their caregiver should be carefully educated and trained regarding postoperative care practices to prevent the complications and recurrence. (Stati et al., 2022).

In Egypt The incidence rate of pterygium illustrated that nearly 2.1%-2.5% of all population had pterygium, some cases are symptomatic and have manifestations that affect the patients' vision to a degree that affect their quality of life (Saif et al., 2020).

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

The aim of this study was to assess post-operative care practices among caregivers and patients with pterygium.

### **Research questions:**

1. What is the knowledge level of the studied patients and their caregivers regarding pterygium?
2. What is the level of post-operative care practices among the studied patients with pterygium and their caregivers?
3. What is the attitude level of the caregivers regarding pterygium?
4. Is there a correlation between patients' knowledge and their post-operative care practices regarding pterygium?

### **Subjects and Method:**

#### **Research design:**

A descriptive research design was utilized in this study.

#### **Setting:**

This study was conducted at Out-Patient Ophthalmologist Clinic affiliated to Ophthalmology University Hospital and Out Patient Ophthalmologist Clinic Benha Ophthalmology Hospital affiliated with the Directorate of Health and under the Ministry of Health.

#### **Sampling:**

Convenience sample of post-operative Pterygia patients and their caregivers from the above previously mentioned setting was used through six months; the sample was taken according to the following criteria: Pterygia patients and their caregivers and aged 20 years old and more. The sample number was 100 patients.

#### **Tools of data collection:**

Three tools were used in data collection:

**Tool I:** An interviewing questionnaire: It was developed by researchers, based on reviewing

related literatures, and written in Arabic language. It consisted of three parts:

**Part I:** It was designed to collect data about:

**A:** Socio-demographic characteristics of the studied patients which included eight closed ended questions about: (age, gender, marital status, educational level, occupation, place of residence, family type and income).

**B:** Caregivers characteristics of the studied patients which included seven closed ended questions about: (age, gender, educational level, occupation, place of residence, caregiver (kind of relation) and living with patient).

**Part II:** It was concerned with medical history of the studied patients which consisted of five closed end questions (the onset of Pterygium, site of Pterygium, manifestations, previous eye operation, effect on patients' vision and presence of other medical problem).

**Part III:** It was concerned with knowledge of the studied patients and their caregivers regarding pterygium: adapted from **Ibrahim, (2018)**: which include 7 closed ended questions such as (definition, manifestations, causes, diagnosis, prevention, treatment and complications).

#### **Scoring system of the studied samples knowledge:**

It was calculated as follows: (2) score for correct and complete answer, while (1) score for correct and incomplete answer and (0) score for do not know answer or incorrect answer. For each area of knowledge, the score of the items was summed- up and the total divided by the number of the items, giving a score for the part. These scores were converted into present score. The studied

patients and their caregivers total knowledge score was classified as the following:

#### **Total scores of knowledge of the studied patients and their caregivers = 14 points.**

- Good when the total score was  $>75\%$  ( $>11$ points).
- Average when the total score was 50% to less than 75% (7 to less than 11 points).
- Poor when the total score was less than  $<50\%$  ( $<7$ points).

**Tool II:** It was concerned with reported practices of patients and their caregivers regarding pterygium adapted from **Ibrahim, (2018)** and modified by researchers, which included 38 items classified into 4 categories (personal hygiene 7 steps, application of topical treatment 11 steps, eye protection post-operatively 12 steps and protective measures and follow-up care 8 steps).

#### **Scoring system of the studied patients and their caregivers reported practices:**

For each practice was give as follows: (0) score for not done, while, (1) score for done. These scores of items were summed up and the total divided by the number of the items, given score for the part. These score converted into a present score studied patients and their caregivers reported practices classified as follow:

#### **Total scores of reported practices = 38 points**

- **Satisfactory practices**  $\geq 60\%$  ( $\geq 30.4$  points).
- **Unsatisfactory practices**  $< 60\%$  ( $< 30.4$  points).
- **B)** It was concerned with reported sanitary home environment condition of the studied sample consisted of 10 statements

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such as (clean and organized environment, good ventilation, ventilation opening in each room, sufficient fans or air conditioners, hoods to purify the air from dust, smoke-free patient environment, good lighting, do not crowd the environment with furniture, presence of clean water sources and Personal hygiene tools and sanitizers).

### **Scoring system of the studied patients and their caregivers' reported sanitary home environment condition:**

For each item was give as follows: (0) score for healthy, while, (1) score for unhealthy. These scores of items were summed up and the total divided by the number of the items, given a mean score for the part. These scores converted into a present score studied patients and their caregivers reported sanitary home environment condition classified as follow:

### **Total scores of reported sanitary home environment condition =10 points**

**Healthy**  $\geq 80\%$  ( $\geq 8$  points).

**Unhealthy**  $< 80\%$  ( $< 8$  points).

**Tool III:** It was concerned with attitude of caregivers regarding pterygium adopted from **Wanyama, (2013):** It was modified by the researchers which included 12 closed ended items: ( thinking that the disease is serious, believing that the disease will affect the patient's performance in his work, thinking that prevention of patients' exposure to sunlight and dust protects them from pterygium disease, thinking that patient gets better with the treatment, thinking that patients' interest in knowing means of prevention is necessary, thinking that follow-up with the doctor is necessary, thinking that following the news of the disease in Egypt and the world is necessary, believing that early diagnosis and treatment encourage preventive eye health care before visual impairment, believing that timely treatment

helps reduce the rate of complications of pterygium disease, Thinking that surgical treatment is necessary when the pterygium develops, Thinking that simple eye problems are treated at home and Feeling worried about surgery.

### **Scoring system the studied patients and caregivers' attitude regarding pterygium:**

The scoring system for attitude of caregivers was calculated as the following: (0) score for never, while, (1) score for sometimes, and (2) score for always. These scores of items were summed up and the total divided by the number of the items, given a score for the part. These score converted into a present score.

### **The total level the studied patients and caregivers' attitude regarding pterygium was categorized as the following:**

**Total scores of attitude= 24 points.**

**Negative** when total score was less than 60% ( $<14.4$  points).

**Positive** when total score was more than 60% ( $>14.4$  points).

### **Ethical Consideration:**

Ethical from ethical committee of the faculty was approved; a formal consent has been obtained from patients before conducting the interview and given them a brief orientation to the purpose of the study. They were also reassured that all information gathered would be treated confidentially and used only for the purpose of the study. The patients had the right to withdraw from the study at any time without giving any reasons. The study didn't have any physical, social or psychological risks. Ethics, values and cultures were respected.



### **Content validity:**

The tools validity were done by 3 expertise's in Community Health Nursing field who reviewed the tool for clarity, relevance, comprehensiveness, applicability and easiness for administration implementation and according to their opinion minor modification were required.

### **Content reliability:**

Reliability of tool was applied for the internal consistency of the tools by Chronbach's Alpha test and resulted. Reliability of the studied patients' knowledge was 0.765 and for caregiver' knowledge was 0.771. On the other hand; reliability for patient' practices was 0.812 and for caregiver' practices was 0.751. Reliability for patient' attitude was 0.652 and for caregiver' attitude was 0.677 regarding pterygium.

### **Pilot Study:**

The pilot study was carried out on 10 patients who represented 10% of the total sample size (100 patients). No modification were done so the pilot study were included in the total number of the study sample. The aim of pilot study was to test the applicability and clarity of the tools and estimate the time for tool data collection. According to the results of the data analysis, no items corrections or modification.

### **Field work:**

The actual field work was carried out over a period of 6 months from the beginning of October 2022 up to the end of March 2023; the researchers prepared the paper questionnaire for the patient and his caregivers conducted in out-patient Ophthalmologist clinic affiliated to Ophthalmology university hospital and out - patient Ophthalmologist clinic Benha Ophthalmology hospital affiliated with the directorate of Health and under the Ministry

of Health after took the official permission. Then explained the aim and the nature of the study and the method of filling the paper questionnaire to the studied patients and their caregivers, the researchers were contacted with the studied patients and their caregivers to complete the tools in visited hospital during two days \week (Sunday and Thursday). The time needed for filling the ranged from 10-20 minutes depending on understanding and response of the interviewers.

### **Statistical analysis:**

The collected data was organized, tabulated, scored and analyzed and presented in figures using the number and percentage distribution, mean and stander deviation using Statistical Analysis Package for Social Science (SPSS) version 20. Data were presented using proper statistical tests there were positive correlation or not. The following statistical tests that were used: Number and percentage: Mean and stander deviation (SD) and Chi-square X<sup>2</sup> was used for qualitative data and spearman correlation test.

### **Statistical significance was considered at:**

- \*\* Highly significant result when p-value < 0.001.
- Significant result when p-value <0.05.
- Non- significant when p-value >0.05.

### **Results:**

**Table (1):** Shows that; 63.0% of the studied patients aged  $\geq 50$  years old with mean age in years was  $55.41 \pm 4.58$ . Also 61.0% of them were male. Concerning patients' educational level; 39.0% of them couldn't read and write. Regarding their occupation; 63.0% of them had free work. Also; 75.0% of them had sufficient income.

**Table (2):** Shows that; 66.0% of the studied caregivers aged 30 -< 40 years old with mean age in years was  $42.22 \pm 6.11$  and 65.0% of them were females. 56.0% had basic

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education. 87.0% were house wives. 64.0% of caregivers (kind of relation) were patient's son or daughter and 66.0% of them were living with the patient.

**Figure (1):** Shows that; 9.0% of the studied patients had good total knowledge level regarding pterygium, while 36.0% of the studied caregivers had good total knowledge level regarding pterygium.

**Figure (2):** Illustrated that; 60.0% of the studied patients had unsatisfactory total practices regarding pterygium, while 62.0% of the studied caregivers' had satisfactory total practices regarding pterygium.

**Figure (3):** Reveals that; 83.0% of studied patients had unhealthy sanitary home environmental condition.

**Figure(4):** Reveals that; 79.0% of the studied patients had negative total attitude level regarding pterygium; while 57.0% of the studied caregivers had negative total attitude level regarding pterygium.

**Table (3):** Reveals that there was weak positive correlation between the studied patient 'total knowledge and their total practices level ( $P > 0.05$ ) regarding pterygium. Also, there was positive correlation between the studied caregivers' total knowledge and their total practices level regarding pterygium. ( $P < 0.001$ ).

**Table (1): Frequency distribution of the studied patients regarding their socio-demographic characteristics (n=100).**

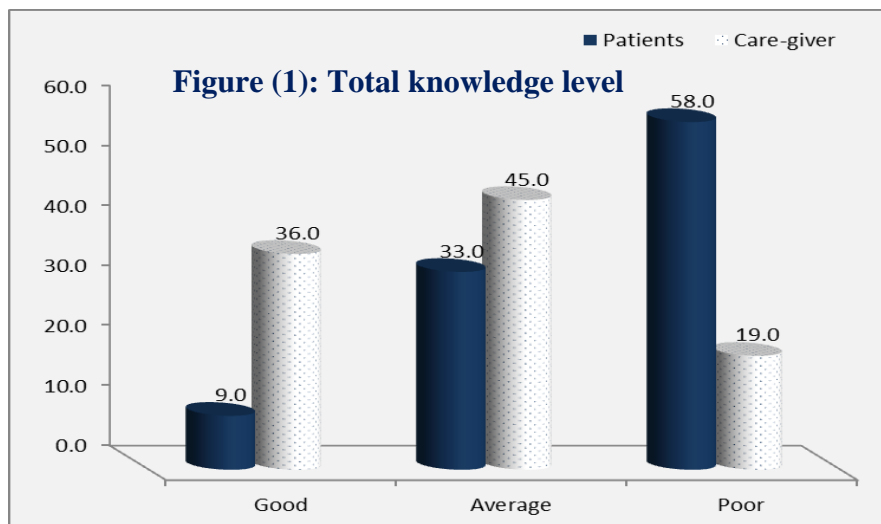
<b>Socio-demographic characteristics</b>	<b>%</b>
<b>Age\years</b>	
20 - < 30 years	18.0
30 - < 40 years	4.0
40 - < 50 years	15.0
50+ years	63.0
Mean $\pm$ SD	55.41 $\pm$ 4.58
<b>Gender</b>	
Male	61.0
Female	39.0
<b>Marital status</b>	
Single	21.0
Married	38.0
Widowed	37.0
Divorced	4.0
<b>Educational level</b>	
Can't read or write	39.0
Primary education	19.0
Intermediate education	26.0
University education and more	16.0
<b>Occupation</b>	
Employee	28.0
Free work	63.0
Housewives	9.0
<b>Income\ month</b>	
Sufficient and save	13.0
Only sufficient	75.0
Insufficient	12.0



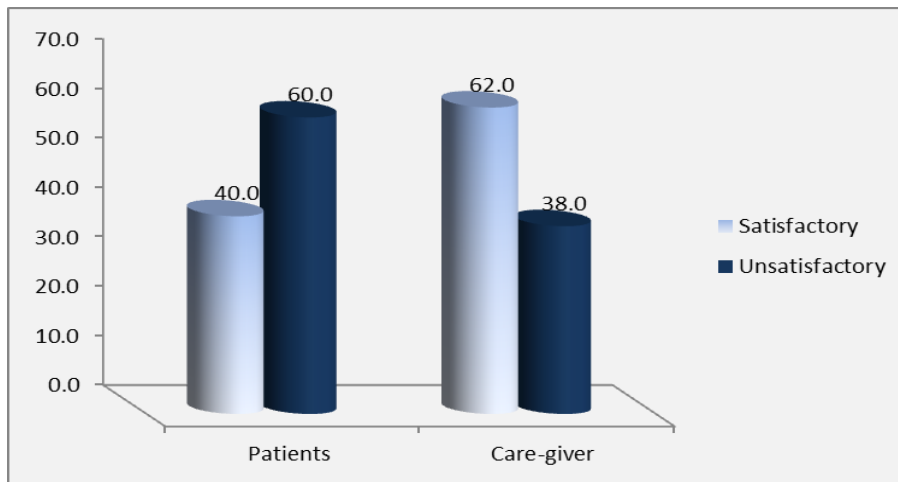
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**Table (2): Frequency distribution of the studied caregivers regarding their socio-demographic characteristics. (n=100)**

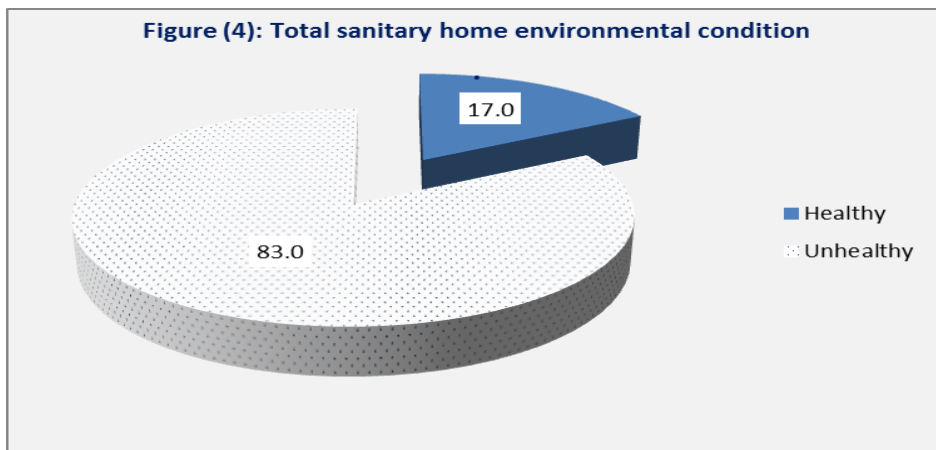
Demographic characteristics	%
<b>Age\years</b>	
< 30	9.0
30- < 40	66.0
40+	25.0
Mean $\pm$ SD	42.22 $\pm$ 6.11
<b>Gender</b>	
Male	35.0
Female	65.0
<b>Educational level</b>	
Basic education	56.0
Intermediate education	37.0
University education	7.0
<b>Occupation</b>	
Free work	11.0
Employee	2.0
House wife	87.0
<b>Caregiver (kind of relation)</b>	
Son or daughter	64.0
Sister or brother	18.0
Father or mother	11.0
Spouse	7.0
<b>Living with Patient</b>	
Yes	66.0
No	34.0



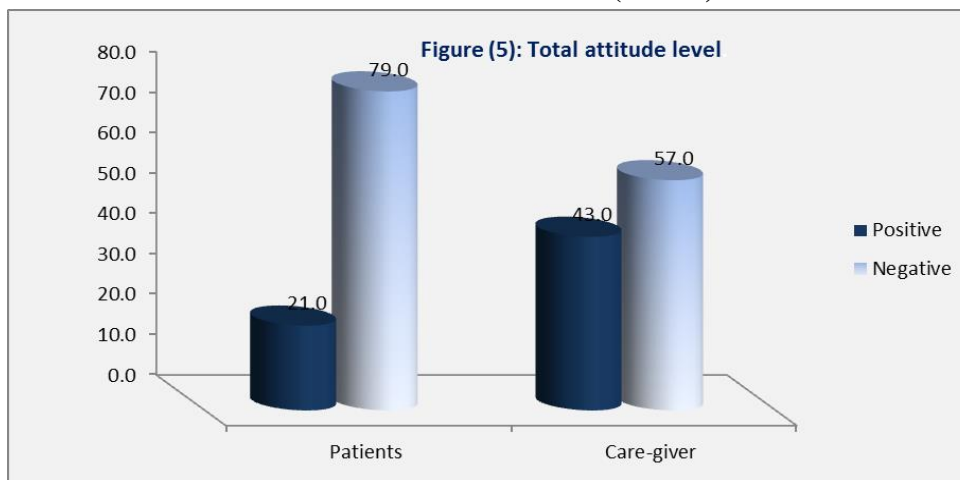
**Figure (1): Percentage distribution of the studied patients and caregivers total knowledge level regarding pterygium. (n=100).**



**Figure (2): Percentage distribution of the studied patients and caregivers’ total practices level regarding pterygium. (n=100).**



**Figure (3): Percentage distribution of the studied patients regarding their total sanitary home environmental condition. (n=100).**



**Figure (4): Percentage distribution of the studied patients and their caregivers’ total attitude level regarding pterygium. (n=100).**

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**Table (3): Correlation between total knowledge and practices among the studied patients and their caregivers about pterygium. (n=100).**

Total practices Level	Total knowledge level			
	Patients		Caregivers	
	r	P-value	R	P-value
	0.175	0.081	0.375	0.000**

### Discussion:

Pterygium is wing-shaped fibrovascular mass that spreads from the conjunctiva onto the cornea. Pterygium is common more nasally than temporally but, infrequently, many appear in both directions. The causative factors of pterygium include; exposure to ultraviolet radiation. Pterygium induces symptoms of poor aesthetic appearance, ocular discomfort, as well as refraction errors and/or corneal opacification with optical disturbances. More importantly, patients with pterygium are usually embarrassed because of permeant ocular disfiguring and redness and disturbing growth appearance. The surgical removal is the single successful treatment with cosmesis which is indicated for 41.7% of the cases, and is considered the gold standard to reduce the rates of recurrence (**Kotb & Soliman, 2023**).

This study aimed to assess post-operative care practices among caregivers and patients with pterygium in Benha City through assessing knowledge, and assessing post-operative care practices among the studied patients with pterygium and their caregivers.

Regarding socio-demographic characteristics of the studied patients, the present study findings showed that; more than three fifths of the studied patients aged  $\geq 50$  years old with mean age in years was  $55.41 \pm 4.58$ . This finding contradicted with the study performed by **Hung et al., (2020)**, who studied "Clinical demographics of

pterygium excision and prevalence of conjunctival intraepithelial neoplasia, in Taiwan", (n=1787), and found that; the mean age was  $65.19 \pm 14.21$  years. Also this finding disagreed with the study performed by **Desai et al., (2023)**, who studied "Outcomes of the tissue tuck surgical technique for recurrent pterygium, in United States", (n=42), and found that; the mean age  $60.5 \pm 10.9$  years. This might be due to the criteria of sample selection.

According to gender, the present study findings showed that; more than three fifths of the patients were male. This finding was in the same line with the study performed by **Mushtaq et al., (2020)**, who studied "Correlation between ocular sun exposure and pterygium, in India", (n=100), and found that; 65% of the participated patients were males. However this finding disagreed with the study performed by Wang et al., (2020), who studied "Prevalence and associated factors for pterygium in Han and Mongolian adults, in China", (n=2651), and found that; 60.7% of the patients were females.

Concerning the patients' educational level, the present study findings showed that; slightly less than two fifths of the studied patients can't read and write. This finding disagreed with the study performed by **Fekadu et al., (2020)**, who studied "Prevalence of pterygium and its associated factors among adults aged 18 years and above in Gambella town, in Southwest Ethiopia", (n=400), and found that; 28.50% of the

patients would be able to read and write. Also this finding was contradicted with the study performed by **Alemayehu et al., (2020)**, who studied "Prevalence and associated factors of pterygium among adults living in Kolla Diba Town, in Northwest Ethiopia", (n=605), and found that; 31.1% of the studied patients had secondary school.

Regarding to the patients' occupation, the present study findings showed that; more than three fifth of the studied patients had free work. This finding disagreed with the study performed by **Wangmo & Lepcha, (2020)**, who studied "Pterygium and associated factors among adults: A hospital-based prospective study, in India", (n=1625), and found that; 23.6% of the patients were housewives/househusband. Also this finding contradicted with the study **Kereem et al., (2021)**, who studied "The effects of primary pterygium on corneal endothelial cells density in Iraqi Eyes, in Iraq", (n=81), and found that; 39.50% of the studied patients were housewife.

According to the patients' monthly income, the present study findings showed that; three quarters of the studied patients had sufficient income. This finding disagreed with the study performed by **Fang et al., (2021)**, who studied "Ethnic differences in the incidence of pterygium in a multi-ethnic Asian population, in Singapore", (n=6,762), and found that; 82.7% of the patients had lower monthly income. Also this finding came inconsistent with the study Conducted by **Das et al., (2020)**, who studied "Clinical profile of pterygium in patients seeking eye care in India", (n=69,597), and found that; 56.7% of the patients had middle monthly income.

Concerning socio-demographic characteristics of the studied caregivers, the present study findings showed that; two thirds

of the studied caregivers aged  $30 \leq 40$  years old with mean age in years was  $42.22 \pm 6.11$ . This finding was in the same line with the study performed by **Khanna et al., (2021)**, who studied "Fifteen-year incidence rate and risk factors of pterygium in the Southern Indian state of Andhra Pradesh", (n=2,627), and found that; 44% of the caregivers aged 30-39 years old. However this finding disagreed with the study performed by **Souley et al., (2022)**, who studied "Case series about physiological astigmatism and the impact of pterygium surgery, in Niamey", (n=43), and found that; the majority of patients' caregivers aged between 40 and 60 years with mean and standard deviation was  $45.6 \pm 12.35$ .

Regarding the gender of the patients' caregivers, the present study findings showed that; almost two thirds of the patients' caregivers were females. This finding was supported with the study performed by **Shastri et al., (2020)**, who studied "Pre-operative and post-operative evaluation of corneal astigmatism after pterygium operation using crescent knife, in India", (n=40), and found that; 75% of the patients' caregivers was composed of females. However this study came inconsistent with the study performed by **Demirezen et al., (2022)**, who studied "Ocular health among industrial workers: a prevalence study of foreign body injury, refractive error, dry eye, pterygium and pingueculae, in Türkiye", (n=240), and found that; 91.7% of the patients' caregivers were males.

As regards to educational level of the patients' caregivers, the present study findings showed that; more than half of the patients' caregivers had basic education. This study contradicted with the study performed by **Zhang et al., (2023)**, who studied "Prevalence and associated factors for pterygium in a Chinese rural population with

type 2 diabetes in a cross-sectional study, in China", (n=427), and found that; 57.6% of the patients' caregivers had no education. Also this finding was inconsistent with the study performed by **Murugia et al., (2021)**, who studied "Recurrent pterygium in Bintulu: Determining its risk factors, in Malaysia", (n=69), and found that; 41.8% of the caregivers had secondary education.

According to occupation of the patients' caregivers, the present study findings showed that; majority of the patients' caregivers were housewife. This finding contradicted with the study performed by **Yavana Rani, (2020)**, who studied "An observational study on extended excision of pterygium with sutureless and glueless conjunctival autograft in pterygium surgery, in Chennai", (n=60), and found that; 86.67% of the patients' caregivers were employed.

Concerning caregiver (kind of relation), the present study findings showed that; more than three fifths of caregivers (kind of relation) were patient's son or daughter (**table 2**). This finding was in the same line with the study performed by **Elgouhary et al., (2020)**, who studied "Role of oxidative stress and vascular endothelial growth factor expression in pterygium pathogenesis and prevention of pterygium recurrence after surgical excision, in Egypt", (n=50), and found that; 68.6% of the patients' caregivers were daughter.

Regarding to living with patient, the present study findings showed that; two thirds of the caregivers were living with the patient (**table 2**). This finding was supported with the study performed by **Omran et al., (2020)**, who studied "Association between pterygium and dry eye among patients in Benghazi", (n=35), and found that; 48.6% of the studied caregivers had lived with the patients.

As regards to the studied patients and caregivers total knowledge level about pterygium, the present study findings showed

that; minority of the studied patients had good total knowledge level regarding pterygium. This finding in the same line with the study performed by **Al-Abdulqader et al., (2021)**, who studied "Knowledge regarding the importance of ultraviolet radiation and protective behaviors for the pterygium in Saudi Arabia", (n=2,335), and found that; 65.4% of the studied patients had poor total knowledge level regarding pterygium.

Also the present study findings showed that; more than one third of the studied caregivers had good total knowledge level regarding pterygium. This finding was contradicted with the study performed by **Alfarhan et al., (2021)**, who studied "Surgical preferences in the management of primary pterygium among anterior segment specialists, in Saudi Arabia", (n=61), and found that; 68.6% of the caregivers had poor total knowledge level regarding pterygium. This might be due to the more than half of caregivers had basic education need more effort from medical staff to exchange data about the disease and the postoperative care. Regarding the studied patients and caregivers' total practices level regarding pterygium, the present study findings showed that; three fifths of the studied patients had unsatisfactory total practices regarding pterygium. This finding came inconsistent with the study performed by **Bilalov et al., (2020)**, who studied "Estimation of lacrimal dysfunction indices in patients with recurrent pterygium, in Uzbekistan", (n=67), and found that; 76.7% of the patients had satisfactory total practices regarding pterygium.

Also the present study findings showed that; more than three fifth of the studied caregivers had satisfactory total practices regarding pterygium . This finding was in the same line with the study performed by **Ordulu et al., (2020)**, who studied "Evaluation of the effects of pterygium

surgery on visual acuity and anterior segment measurements using corneal topography, in Turkey", (n=34), and found that; 77.5% of the studied caregivers had satisfactory total practices regarding pterygium. This might be due to the participants had low knowledge about how to care of eye after eye surgery.

Regarding the studied patients about their total sanitary home environmental condition, the present study findings showed that; majority of the studied patients had unhealthy sanitary home environmental condition. This finding came inconsistent with the study performed by **Khan et al., (2021)**, who studied "Relation between different grades of pterygium and amount of induced corneal astigmatism: Different grades of pterygium, in Pakistan", (n=50), and found that; 62.0% of the patients had healthy home environmental condition. This might be due to the health problems associated with poor housing and home conditions, flooding, poor sanitation and water pollution.

According to the studied patients and their caregivers' total attitude level regarding pterygium, the present study findings showed that; majority of the studied patients had negative total attitude level regarding pterygium . This finding came inconsistent with the study performed by **Patel et al., (2020)**, who studied "Outcome of primary pterygium surgery using inferior conjunctival autograft, in Nepal", (n=619), and found that; 98.08% of the studied patients had positive total attitude level regarding pterygium. This might be due to more than half of patients didn't had correct information about disease so they were worry about disease and the method of treatment.

Moreover the present study findings showed that; less than three fifth of the studied caregivers had negative total attitude level regarding pterygium. This finding was

contradicted with the study performed by **Afzal et al., (2022)**, who studied "Comparison of conjunctival autograft versus bare sclera technique as treatment modalities for primary pterygium, in Punjab", (n=102), and found that; 62.75% of the studied caregivers had positive total attitude level regarding pterygium. This might be due to lack of knowledge about disease and lack of knowledge about its risks.

According to correlation between total knowledge and practices among the studied patient and their caregivers about pterygium, the present study findings showed that; there was weak positive correlation between the studied patient 'total knowledge and their total practices level ( $P>0.05$ ) regarding pterygium. This findings were contradicted with the study performed by **Garg et al., (2019)**, who studied "A comparative study of preoperative and postoperative changes in corneal astigmatism after pterygium excision by different techniques, in India", (n=71), and reported that; there was positive correlation between the studied patient 'total knowledge and their total practices level.

Also the present study findings showed that; there was positive correlation between the studied caregivers' total knowledge and their total practices level regarding pterygium ( $P<0.001$ ). This findings were supported with the study performed by **Chaidaroon et al., (2022)**, who studied "A randomized controlled trial to manage postoperative ocular pain after pterygium excision with conjunctival autograft transplantation with a single application of 2% sodium hyaluronate, in Thailand", (n=35), and reported that; there was positive correlation between the studied caregivers' total knowledge and their total practices level regarding pterygium. This finding might be due to attributed to the fact that the knowledge was the baseline of the



practices and affect positively on their practices and when the knowledge increase about the patients' health, the patients practice should be changed to better than before.

**Conclusion:**

The minority of the studied patients had good total knowledge level regarding pterygium. On the other hands, more than one third of the studied caregivers had good total knowledge level regarding pterygium. Less than half of the studied patients had medical history of pterygium since <1 year. More than half of the studied patients had unsatisfactory total practices regarding pterygium, As well as; more than one third of caregivers had unsatisfactory total practices regarding pterygium. More than three quarters of the studied patients had negative total attitude level toward the pterygium; while more than half of the studied caregivers had negative total attitude level toward the pterygium. In addition to; there was negative correlation between the studied patients' total knowledge and their total practices level. While there was positive correlation between the studied caregivers' total knowledge and their total practices level ( $p < 0.001^{**}$ ).

**Recommendations:**

- Distributing brochures and posters within outpatient to patients to raise of knowledge about pterygium.
- Develop educational and training programs for patient and their caregivers about pterygium at large size sample.
- Further studies regarding precautionary measures practices for patients and their caregivers about pterygium.
- Conduct more detailed studies on the possible causes and risk factors of pterygium to improve prevention and treatment.

**References:**

- Afzal, S., Qamar, F., Khan, S., Ahmed, M., Rehman, U., & Qammer, R. (2022).** Comparison of Conjunctival Autograft Versus Bare Sclera Technique as Treatment Modalities for Primary Pterygium. *Pakistan Journal of Medical & Health Sciences*, 16(12), 820-820. DOI: <https://doi.org/10.53350/pjmhs20221612820>
- Al-Abdulqader, R., Al Wadani, F., Alkulaib, N., Alshaikh, M., Almulhim, Y., & Alsaqer, S. (2021).** Knowledge regarding the importance of ultraviolet radiation and protective behaviors for the Pterygium in Saudi Arabia. *Int. J. Med. Dev. Ctries*, 5, 133-139. <https://doi.org/10.24911/IJMDC.51-1605634944>.
- Alemayehu, T., Addis, Y., Bizuneh, Z., Tegegne, M., & Alemayehu, A. (2020).** Prevalence and Associated Factors of Pterygium Among Adults Living in Kolla Diba Town, Northwest Ethiopia, *Clinical Ophthalmology*, , 245-255, DOI: 10.2147/OPHTH.S239982.
- Alfarhan, A., Alhamzah, A., Abuabat, A., Debasi, T., & Almudhaiyan, T. (2021).** Surgical Preferences in the Management of Primary Pterygium among Anterior Segment Specialists. *The Open Ophthalmology Journal*, 15(1).DOI: 10.2174/187 4364102 115010322.
- Bilalov, E.N., Yusupov, F., Nozimov, E., & Oripov, I. (2020).** Estimation of lacrimal dysfunction indices in patients with recurrent pterygium. *Ophthalmology Reports*, 13(1), 11-16. <https://doi.org/10.17816/OV19242>.
- Chaidaroon, W., Ausayakhun, S., Tananuvat, N., Upaphong, P., & Thabsuwan, K. (2022).** Pseudomonas aeruginosa Scleritis following Pterygium Surgery with Mitomycin C or Beta

Irradiation: Three-Case Report. Case Reports in Ophthalmological Medicine, 2022

**Cioba, C., Marafon, B., Fortes, B., Cavalheiro, T., Fabris, M., Michel, G., & Marinho, R. (2023).** Autologous fibrin glue versus sutures for conjunctival autograft in primary pterygium: a randomized clinical trial. *International Ophthalmology*, 1-11. <https://doi.org/10.21203/rs.3.rs-1654566/v1>.

**Das, V., Podila, S., Prashanthi, G., Basu, S., (2020):** Clinical profile of pterygium in patients seeking eye care in India: electronic medical records-driven big data analytics report III. *Int Ophthalmol journal*; Vol. 40(No.6):1553-1563. doi: 10.1007/s10792-020-01326-3. Epub 2020 Feb 24. PMID: 32096104.

**Demirezen, M., Ay, E., Şenol, Y., & Til, A. (2022).** Ocular health among industrial workers: a prevalence study of foreign body injury, refractive error, dry eye, pterygium and pingueculae. *La Medicina del lavoro*, 113(5). doi: 10.23749/mdl.v113i5.13350.

**Desai, R., Adams, M., & Bryan, S. (2023).** Outcomes of the TissueTuck Surgical Technique for Recurrent Pterygium. *Cornea* (>):10.1097/ICO.0000000000003255, February 16, 2023. | DOI: 10.1097/ICO.0000000000003255.

**Elgouhary, M., Elmazar, F., & Naguib, M. (2020).** Role of oxidative stress and vascular endothelial growth factor expression in pterygium pathogenesis and prevention of pterygium recurrence after surgical excision. *Int Ophthalmol* 40, 2593–2606 (2020). <https://doi.org/10.1007/s10792-020-01440-2>.

**Fang, L., Chong, Y., & Thakur, S. (2021).** Ethnic differences in the incidence of pterygium in a multi-ethnic Asian population: the Singapore Epidemiology of Eye Diseases Study. *Sci Rep* 11, 501 (2021). <https://doi.org/10.1038/s41598-020-79920-9>.

**Fekadu, A., Assem, S., & Adimassu, N. (2020).** Prevalence of pterygium and its associated factors among adults aged 18 years and above in Gambella town, Southwest Ethiopia, May 2019. *PLoS ONE* 15(9): e0237891. <https://doi.org/10.1371/journal.pone.0237891>.

**Garg, P., Sahai, A., Shamshad, M. A., Tyagi, L., Singhal, Y., & Gupta, S. (2019).** A comparative study of preoperative and postoperative changes in corneal astigmatism after pterygium excision by different techniques. *Indian journal of ophthalmology*, 67(7), 1036. doi: 10.4103/ijo.IJO\_1921\_18.

**Hong, J. (2022):** Design and Application of Nursing Record Sheet and Operation Registration Form for Ophthalmic Daytime Operation. *International Journal of Studies in Nursing*, 7(1), 32

**Hung, H., Hsiao, H., & Tan, Y. (2020).** Clinical demographics of pterygium excision and prevalence of conjunctival intraepithelial neoplasia: a 15-year review. *Int Ophthalmol* 40, 1781–1788 (2020). <https://doi.org/10.1007/s10792-020-01347-y>.

**Ibrahim, R., (2018):** Effect of Implementing Teaching Program on Knowledge and Practice of Nurses and Clinical Outcomes of Patients Post Cataract Surgery. 60-70. 10.9790/1959-0703106070.

**Iqbal, I., Osman, F., Kabir, F., & Parvez, M. (2022):** Efficacy of autologous blood clot in primary pterygium surgery compared with suture technique in a tertiary hospital of Bangladesh. *BOHR International Journal of Current Research in Optometry and Ophthalmology*, 1(1), 86-92.

**Jellinek, J., & Cressey, D. (2019):** Nail splint to prevent pterygium after nail surgery. *Dermatologic Surgery*, 45(12), 1733-1735.

**Kereem, A., Mehdy, I., & AL-Rubaye, H. (2021).** The Effects of Primary Pterygium on Corneal Endothelial Cells Density in Iraqi Eyes. *J Ophthalmol Adv Res*, 2(2), 1-11. <https://www.researchgate.net/publication/357517478>.

**Khan, A., Ahmad, F., Saleem, B., Nazeer, S., Khan, U., & Munir, S. (2022).** Relation Between Different Grade of Pterygium and Amount of Induced Corneal Astigmatism. *Pakistan Journal of Medical & Health Sciences*, 16(04), 1066-1066

**Khanna, C., Marmamula, S., Cicinelli, V., Mettla, L., Giridhar, P., Banerjee, S., & Rao, N. (2021).** Fifteen-year incidence rate and risk factors of pterygium in the Southern Indian state of Andhra Pradesh. *British Journal of Ophthalmology*, 105(5), 619-624. <https://mc.manuscriptcentral.com/bjo>.

**Kotb, N., & Soliman, N. (2023).** Snatching: A modified cosmetic technique in pterygium surgery without using scalpel. *Journal Français d'Ophtalmologie*. Volume 46, Issue 7, September 2023, Pages 756-762 <https://doi.org/10.1016/j.jfo.2023.02.002>.

**Minasian, B., & Hope, N. (2022).** Surfing on the world stage: a narrative review of acute and overuse injuries and preventative measures for the competitive and recreational

surfer. *British journal of sports medicine*, 56(1), 51-60.

**Murugia, L., Chong, L., Lim, T., & Alias, R. (2021).** Recurrent pterygium in Bintulu,: determining its risk factors. *Malaysian Journal of Ophthalmology*, 3(1), 9-20. <http://doi.org/10.35119/myjo.v3i1.172>.

**Mushtaq, I., Maghdum, R., Bhavsar, D., & Iqbal, B. (2020).** Correlation between Ocular Sun Exposure and Pterygium: A Hospital-Based Study. *Journal of the Scientific Society* 47(3):p 176-179, Sep–Dec 2020. | DOI: 10.4103/jss.JSS\_34\_20.

**Neale, E., Lucas, M., Byrne, N., Hollestein, L., Rhodes, E., Yazar, S., & Olsen, M. (2023):** The effects of exposure to solar radiation on human health. *Photochemical & Photobiological Sciences*, 1-37.

**Omran, A., Osama, M., Bukhatwa, R., & Samar A. (2020).** Association between Pterygium and Dry Eye among Patients in Benghazi, Libya. *Libyan Journal of Medical Sciences* 4(2):p 80-83, Apr–Jun 2020. | DOI: 10.4103/LJMS.LJMS\_62\_19.

**Ordulu, F., Akpolat, C., Kurt, M., & Oguz, H. (2020).** Evaluation of the effects of pterygium surgery on visual acuity and anterior segment measurements using corneal topography. *Medicine*, 9(1), 78-81. doi: 10.5455/medscience.2019.08.9139.

**Patel, S., Godar, S., & Pokharel, B. (2020).** Outcome of primary pterygium surgery using inferior conjunctival autograft. *journal of universal college of medical sciences*, 8(02), 22. [dohttp//g/10.3126/juc](http://g/10.3126/juc).

**Philpott, L. (2021).** Eye care: Forward vision-managing dry eye. *AJP: The Australian Journal of Pharmacy*, 102(1203).

**Saif, P & Saif, A. (2020).** Incidence of Ophthalmic Disease in the Dakhla Oasis in Egypt by a prevention of blindness major campaign. *NILES journal for Geriatric and*

Gerontology, 3(Geriatric ophthalmology), 34-42.

**Shastry, P., Sharma, N., Singh, D., & Singh, P. (2020).** Pre-operative and post-operative evaluation of corneal astigmatism after pterygium operation using crescent knife. *J Evid based Med Healthc*, 7, 118-21.at:

<https://www.researchgate.net/publication/339259187>.

**Souley, Y., Sambou, O., Adam, D., Joanelle, L., & Abdou, A. (2022).** Case series about physiological astigmatism and the impact of pterygium surgery. *Annals of Medicine and Surgery*, 81, 104488. Volume 81, September 2022, 104488.

<https://doi.org/10.1016/j.amsu.2022.104488>.

**Stati, G., Rossi, F., Wilaiwan, T., Tung, L., Mourdikoudis, S., Thanh, D., and Pietro, R., (2022).** Development and Characterization of Curcumin-Silver Nanoparticles as a Promising Formulation to Test on Human Pterygium-Derived Keratinocytes. *Molecules*. 2022; 27(1):282.

<https://doi.org/10.3390/molecules27010282>.

**Wangmo, C., & Lepcha, T. (2020).** Pterygium and associated factors among adults: a hospital-based prospective study. *Bhutan Health Journal*, 6(1), 32-37. <https://doi.org/10.47811/bhj.97>.

**Yavana Rani, J. (2020).** An Observational study on Extended Excision of Pterygium with Sutureless and Glueless Conjunctival Autograft in Pterygium Surgery (Doctoral dissertation, Madurai Medical College, Madurai).

**Zhang, J., Qin, B., Liu, B., Sun, D., Liang, C., Wang, S., & Zhu, R. (2023).** Prevalence and associated factors for pterygium in a Chinese rural population with type 2 diabetes in a cross-sectional study: Jiangsu Diabetic Eye Disease Study (JDEDS). *International*

*Ophthalmology*, 43(2),

411-422.

<https://orcid.org/0000-0002-4056-6928>

## ممارسات الرعاية ما بعد العمليات الجراحية بين مقدمي الرعاية والمرضى الذين يعانون من الظفر

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الظفرة هي نمو غير طبيعي للأنسجة الظهرية والأوعية الدموية الليفية التي تغزو القرنية عبر الحوف ويمكن أن تؤدي إلى ضعف الرؤية. لذا هدفت الدراسة الي تقييم ممارسات الرعاية ما بعد العمليات الجراحية بين مقدمي الرعاية والمرضى الذين يعانون من الظفر. وقد أجريت الدراسة الحالية بالعيادات الخارجية بمستشفى الرمذ والجامعة بينها على عينة متاحة من ١٠٠ مريض ومقدمو الرعاية لهم. وقد اظهرت النتائج بأن القليل من المرضى لديهم مستوى معلومات جيد تجاه الظفرة. في حين أن أكثر من نصفهم كانوا يعانون من مستوى ضعيف تجاه الظفرة. من ناحية أخرى، كان لدى أكثر من ثلثي المقدمين للرعاية لديهم مستوى معلومات جيد، بينما كان لدى أقل من خمسهم مستوى معرفة ضعيف تجاه الظفرة. أكثر من نصف المرضى المشاركين في البحث كانت لديهم ممارسات غير مرضية تجاه الظفرة، بينما كانت لدى أقل من ثلثي مقدمي الرعاية ممارسات مرضية تجاه الظفرة. يمتلك أكثر من نصف المقدمين الرعاية مستوى سلبى للاتجاه العام نحو الظفرة. بالإضافة إلى ذلك، هناك علاقة سلبية بين مستوى المعرفة العامة لدى المرضى ومستوى ممارستهم العامة. بينما هناك علاقة إيجابية بين مستوى المعرفة العامة لدى المقدمين الرعاية ومستوى ممارستهم العامة. وأوصت الدراسة بوضع برامج تعليمية وتدريبية للمرضى ومقدمي الرعاية حول مرض الظفرة على نطاق اوسع.