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# Ocular Complications in Facial Psoriasis: Recognizing Symptoms and Seeking Treatment

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**Abstract:** ***BACKGROUND:*** Facial psoriasis represents a form of psoriasis that primarily impacts the skin of the face, where it presents as red, itchy, swollen spots on the forehead, cheeks, chin, and even around the eyes. The severity of psoriasis is considered essential for the optimal therapeutic management of patients. ***OBJECTIVES:*** The aim of this study was to analyse the clinical findings of ocular complications in patients with facial psoriasis after treatment. ***PATIENTS AND METHODS:*** A total of 77 patients with facial psoriasis, aged between 30 and 60 years, who had been diagnosed by the Dermatology Department at different hospitals in Iraq, were recruited during the follow-up period between 8 February 2023 and 16 May 2024. All patient data were collated in relation to the type of treatment received, symptoms, type of psoriasis, duration, and severity of the disease (as measured by the PASI score), as well as the patient's quality of life. The occurrence of ocular complications was documented in patients, and comprehensive eye examinations were conducted using the Schirmer I and II tests, along with tear film breakup time (TBUT). These tests were administered to all patients. ***RESULTS:*** Itching was identified as the most prevalent symptom, affecting 20.78% of the total patient population. Plaque psoriasis was the most common form of facial psoriasis, with 27 cases, while guttate psoriasis accounted for 20 cases. Disease severity was classified into three categories: mild (25 cases), moderate (34 cases), and severe (18 cases). Ocular complications were observed in 71% of patients. The prevalence of dry eyes was 43%, with a significant impact on the health-related quality of life of 20.78% of patients, who reported a very large effect.

Additionally, 40.26% of patients exhibited mild anxiety levels. With regard to the evaluation of dry eye, 21 cases exhibited abnormal intraocular pressure in the Schirmers I test and, 25 cases in the Schirmers II tests, and 15 cases demonstrated abnormal tear film break-up time. ***CONCLUSION:*** Facial psoriasis has a detrimental impact on patients' quality of life, resulting in physical and psychological impairment. The prevalence of ocular complications was found to be 71.43%, with dry eye and eye inflammation being the most common complications observed in patients. Furthermore, it was noted that the incidence of symptoms and complications may increase with the PASI score. The findings of this study indicate that the use of infliximab and topical corticosteroids has a modest

impact on disease scores. However, these treatments do not appear to result in an increase in intraocular pressure.

**Keywords:** Facial Psoriasis; Symptoms; Ocular Complications; Types of Facial Psoriasis; Dry Eye Test; and Psoriasis Area and Severity Index (PASI).

## 1. INTRODUCTION

Psoriasis is a chronic, relapsing systemic inflammatory skin disease with multi-organ involvement in which the locomotor system is affected **[1,2].** It has a significant negative effect on the physical, emotional, and psychological well-being of patients. Psoriasis is a chronic disease of universal distribution and relapsing of the immune system with various clinical manifestations, although, in general, it presents in the form of erythematous, desquamative, chronic, and symmetrical plaques. The morphology of the lesions and the region of the affected skin determines the type of psoriasis of the patient: plaque psoriasis (psoriasis vulgaris), in drops (guttata), inverted, pustular, and erythrodermic. **[3 – 6]**

Patients with psoriasis exhibit ocular manifestations in approximately 40-60% of cases. Nevertheless, only scanty information from research among populations in Europe and the Far East exists **[7].** Psoriasis has systemic links, which include psoriatic arthritis, metabolic syndrome, Nonalcoholic steatohepatitis (NASH), and inflammatory bowel disease (IBD). The most widespread of these systemic associations is psoriatic arthritis, which usually comes after the classic skin findings and takes a period of about 5-10 years to develop gradually. **[8 – 10]**

Psoriatic arthritis is an inflammatory condition that mainly affects the joints, particularly in people who have psoriasis. This condition usually presents with asymmetrical oligoarthritis and is known for HLA B27 positivity in 10-25% of the patients, although there are reports of up to 30% among psoriasis patients. One of the diseases caused by HLA-B27 is uveitis, which has a known association with spondyloarthropathies, including psoriatic arthritis. However, uveitis as a form of ocular involvement in psoriatic arthritis is often severe and recurrent in nature. Most practitioners are familiar with this eye disease since it can cause irreversible blindness if not handled early. **[11 – 13]**

There are numerous instruments for measuring the intensity and severity of psoriasis. The parameters traditionally used to assess psoriasis are the PASI (Psoriasis Area and Severity Index), the BSA (affected body surface), and the PGA (Doctor's Global Assessment). In addition to these instruments for measuring the intensity and severity of psoriasis, the intensity of the lesions, their topography (facial, flexural, genital involvement, etc.), the psychosocial impact on the patient, and their effect on their general condition should also be assessed. **[14,15]**

It counts when it comes to measuring is that no measuring instrument will work for any circumstance, and that to choose which one we are going to use for a specific purpose, we must take into account what we want to measure, that the instrument is capable of measuring thickness, the intensity of erythema and desquamation and on the other hand to what extent the injuries produce an alteration of the quality of life **[16].** Although they have a little affected surface, there are people who will be classified in the group of moderate or severe psoriasis because the lesions are located in visible, annoying, or difficult-to-treat areas such as the face, palms, and soles, the areas of folds (axillary, inguinal or genital area) or if they have affected nails **[17].** Part of this classification of the patient at a level of intensity higher than that which would correspond to it due to its purely objective and quantitative affectation will be determined by the impact that the disease produces on the patient's quality of life and that will be raised in the appropriate chapter. Among the most widely used methods that allow us to evaluate the intensity of psoriasis is the Psoriasis Area and Severity Index (PASI) **[18].** However, there are many more scales and measuring instruments that, in order to be useful, must be validated and must produce reproducible results. Its main utility is to allow the making of standardized therapeutic decisions in psoriasis related to systemic treatment and to be able to assess the response to

treatment in a more objective way. It is a multifactorial disease, the etiology of which is still unclear, although it is currently known that the immune system plays a central role, being considered an autoimmune disease. On the other hand, psoriasis has an important hereditary component that, together with certain environmental triggers, seems to intervene in its Development. **[19]**

The genetic basis of psoriasis is complex, with multiple genes participating in its pathogenesis, although the main responsible for the heritability of psoriasis seems to be the presence of certain alleles of the HLA-C gene, specifically the HLA-allele, which codes for a molecule of the major histocompatibility complex (MHC) of class I, involved in the presentation of antigens. **[20]**

## 2. PATIENTS AND METHODS

### 2.1. STUDY DESIGHN

Our study gathered information regarding these variables: age, gender, level of education, the length of time experiencing psoriasis, and treatment was taken into consideration. In terms of evaluating disease severity, the PASI scale is used via four parameters: erythema (redness), infiltration (thickness), desquamation (scaling), and body surface area involvement.

The PASI score can range from 0 to 72, with lower values representing milder forms of the disease. For this reason, we defined a PASI score of ≤3 As indicative of mild psoriasis in our study. The rationale behind choosing these specific cutoff points (values) is because the current research was carried out at hospitals located in various parts of Iraq, where dermatological cases are usually well handled. If this was not done, most studies would use a lower cut-off point and thus make it impossible for comparison among patients who are suffering from severe forms of psoriasis.

The Psoriasis Disability Index (PDI) which is known for its ability to assess the severity of this condition in relation to daily functioning, such as work-from-home or school-related situations, relations with friends and family members outside of professional activities or the patients' hobbies, and also complications resulting from treatment methods, was used. The PDI consists of 15 questions that explain problems resulting from living with the disease. Questions asked were about events occurring during the preceding month.

Individual responses were rated from 0 to 3, where “never at all” was scored as zero, “a little” was one, “a lot” was two, and “very much” meant three. The final score was thus between 0 and 45. This showed that a high score means a lower quality of life. The daily life stress experienced by people living with psoriasis was assessed through a modified 15-item Psoriasis Life Stress Inventory (PLSI-15).

To observe any ocular manifestations, every patient underwent extensive examination. Best corrected visual acuity (BCVA) was measured on Snellen's chart at 6 m in a bright examination chamber. A slit lamp was used under both diffuse and direct light conditions for the anterior segment examination to examine the ocular structures including for adnexal examination; anterior chamber examination was performed to rule out uveitis; IOP was measured with Goldmann applanation tonometry, while Tear Film Breakup time (TBUT), Schirmer-1 and Schirmer-2 tests were done to detect dry eyes.

### 2.2. DATA COLLECTED

We conducted a cross-sectional study in the Dermatology Department of different hospitals in Iraq during the period from February 8, 2023, to May 16, 2024, in which demographic and diagnostic data were collected for 77 patients with facial psoriasis aged 30-60 years. We performed a comprehensive treatment on all patients, which included both infliximab and topical corticosteroids, which are effective treatments in the treatment of moderate to severe psoriasis. Patients received infliximab infusion through the intravenous route at a dose of 5 mg/kg, which was repeated at 2, 6, and then every eight weeks, while topical corticosteroids were applied directly to the skin, which helps reduce inflammation and itching in the affected areas, which were applied once daily in the evening, and the affected area was gently massaged using upward strokes until complete absorption. Patients aged 30-

60 years with comorbidities and patients with facial psoriasis for 3-7 months were included, while patients with serious illnesses or who had undergone cosmetic facial surgeries were excluded.

### 2.3. STATISTICAL ANALYSIS

Data collected in a case record form was then subsequently analyzed using SPSS version 22.0. Qualitative data variables have been expressed as frequencies and percentages, while for quantitative data variables, means and standard deviations were employed. Chi-square test has been utilized to establish whether or not there is any significant difference between the occurrence of ocular complications related to psoriasis with different qualitative data variables. A p-value that is less than 0.05 is considered statistically significant.

## 3. RESULTS

**TABLE 1:** ENROL DIMOGRPHIC DATA OF PATIENTS WITH FACIAL PSORIASIS.

| VARIABLES | CASES [77] | PERCENTAGE [%] |
|---|---|---|
| **Age, years** | | |
| 30 – 40 | 18 | 23.38% |
| 41 – 50 | 24 | 31.17% |
| 51 – 60 | 35 | 45.45% |
| **Sex** | | |
| Men | 48 | 62.34% |
| Women | 29 | 37.66% |
| **BMI, Kg/m2** | | |
| 28.0 – 32.5 | 12 | 15.58% |
| 32.6 – 36.5 | 27 | 35.06% |
| > 36.5 | 38 | 49.35% |
| **Comorbidities** | | |
| 1 | 52 | 67.53% |
| 2 | 34 | 44.16% |
| 3 | 21 | 27.27% |
| 4 | 13 | 16.88% |
| 5 | 54 | 70.13% |
| 6 | 31 | 40.26% |
| 7 | 63 | 81.82% |
| **ASA, %** | | |
| I | 17 | 22.08% |
| II | 40 | 51.95% |
| III | 20 | 25.97% |
| **Marital status** | | |
| Unmarried | 10 | 12.99% |
| Married | 58 | 75.32% |
| Divorced | 7 | 9.09% |
| Widowed | 2 | 2.60% |
| **Occupational status** | | |
| Employed | 27 | 35.06% |
| Unemployed | 50 | 64.94% |
| **The monthly income of the family is $** | | |
| < 600 | 40 | 51.95% |
| 600 – 800 | 21 | 27.27% |
| > 800 | 16 | 20.78% |
| **** COMORBIDITIES;*** *1 = HYPERTENSION, 2 = DIABETES, 3 = ASTHMA, 4 = HEART FAILURE, 5 = OBESITY, 6 = KIDNEY DISEASES, 7 = ANXIETY AND DEPRESSION.* | | |

**TABLE 2:** DIAGNOSES DATA OF FACIAL PSORIASIS.

| PATIENTS' DATA | NUMBER OF CASES [77] | PERCENTAGE [%] |
|---|---|---|
| Symptoms | | |
| Red patches of skin | 21 | 27.27% |
| Dryness | 13 | 16.88% |
| Itching | 16 | 20.78% |
| Scaling | 10 | 12.99% |
| Burning sensation | 9 | 11.69% |
| Swollen and stiff joints | 8 | 10.39% |
| Types of facial psoriasis | | |
| Plaque psoriasis | 27 | 35.06% |
| Psoriatic arthritis | 18 | 23.38% |
| Guttate psoriasis | 20 | 25.97% |
| Erythrodermic psoriasis | 9 | 11.69% |
| Pustular psoriasis | 3 | 3.90% |
| Severity of disease (PASI Score) | | |
| Mild | 25 | 32.47% |
| Moderate | 34 | 44.16% |
| Severe | 18 | 23.38% |
| Duration of disease, months | 5.30 ± 2.10 | |
| Family history of the disease | | |
| Yes | 28 | 36.36% |
| No | 49 | 63.64% |
| Smoking | | |
| Yes | 43 | 55.84% |
| No | 34 | 44.16% |
| Treatments used | | |
| Infliximab | 30 | 38.96% |
| Topical corticosteroids | 47 | 61.04% |

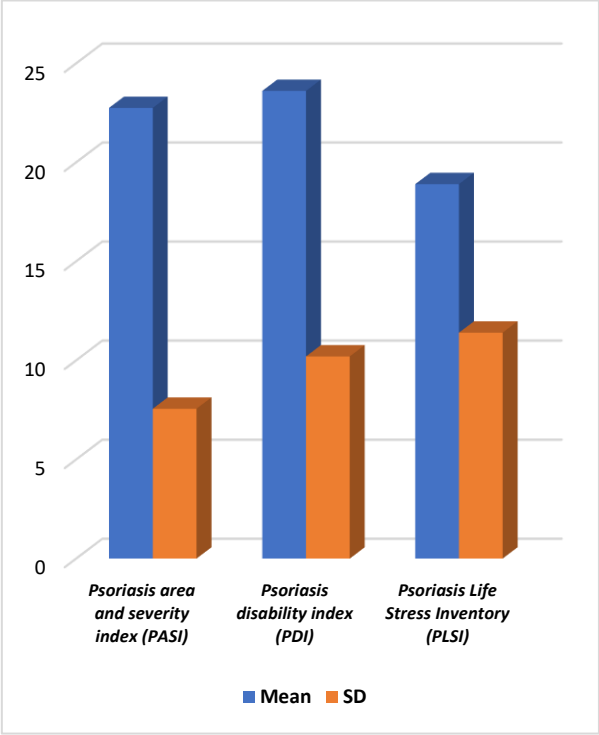



**FIGURE 1:** DETERMINING QUALITY–LIFE INDICATIONS OF PATIENTS WITH FACIAL PSORIASIS AFTER TREATMENTS.

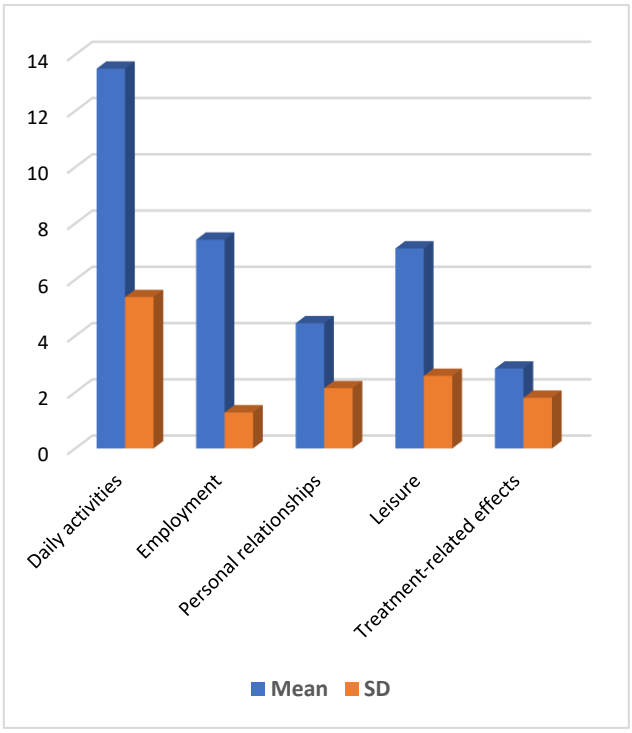
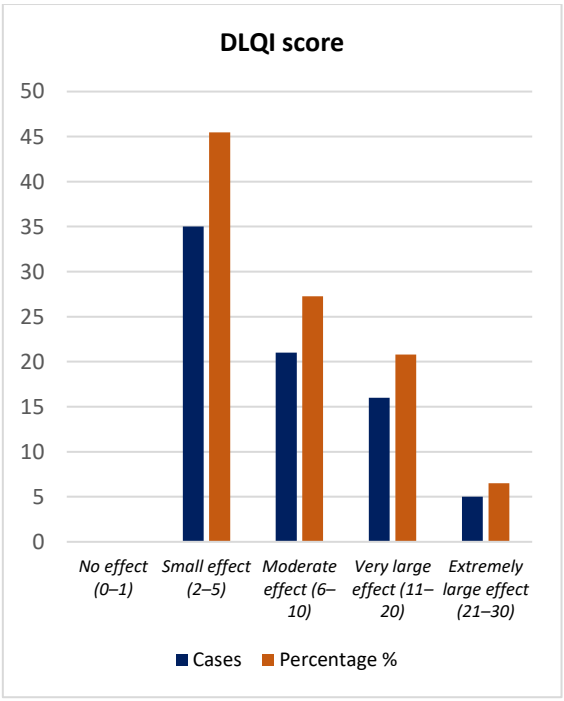



**FIGURE 2:** DETERMINING OF RESULTS RELATED TO PSORIASIS DISABILITY INDEX.



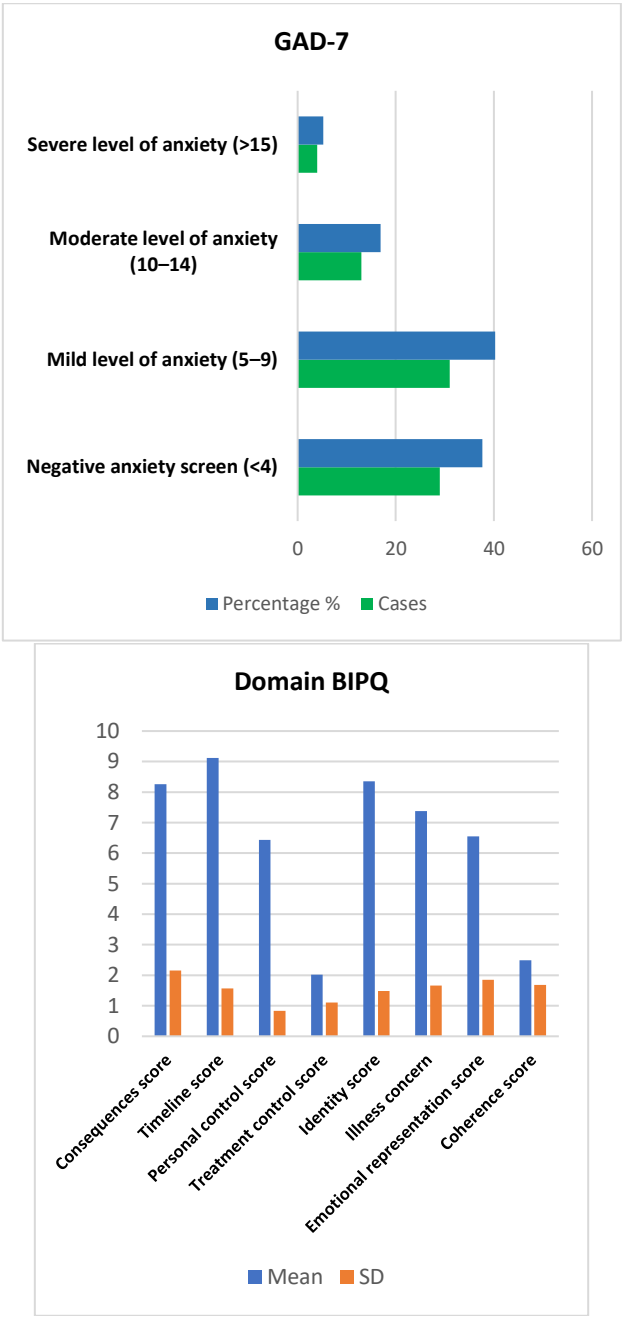



**FIGURE 3:** EVALUATION OF HEALTH QUALITY OF LIFE RESULTS RELATED TO PATIENTS WITH FACIAL PSORIASIS IN TERMS OF HRQOL (DLQI), ANXIETY (GAD-7), AND ILLNESS PERCEPTION (BIPQ).

**TABLE 3:** ENROLLING OCULAR COMPLICATIONS IN FACIAL PSORIASIS.

| Parameters | Cases [N = 77] | Percentage [%] |
|---|---|---|
| Dry eyes | 26 | 33.77% |
| Blepharitis | 8 | 10.39% |
| Cataract | 5 | 6.49% |
| Conjunctivitis | 4 | 5.19% |
| Pinguecula | 3 | 3.9% |
| Pterygium | 3 | 3.90% |
| Episcleritis | 2 | 2.6% |
| Uveitis | 2 | 2.6% |
| Macular edema | 2 | 2.6% |
| Total | **55** | **71.43%** |

**TABLE 4:** ENROLLING POST - TREATMENT DATA OF OCULAR TEST IN TERMS OF DRY EYE TEST BY TEAR FILM BREAKUP TIME (TBUT) AND SCHIRMER TEST.

| | DRY EYE TEST | | | |
|---|---|---|---|---|
| | Normal | | Abnormal | |
| Items | Cases | % | Cases | % |
| Schirmers I | 56 | 72.73% | 21 | 27.27% |
| Schirmers II | 52 | 67.53% | 25 | 32.47% |
| TBUT | 62 | 80.52% | 15 | 19.48% |

## 4. DISCUSSION

It is known that a number of extracutaneous symptoms exist in psoriasis, with ocular complications being among the most prevalent. The average ocular complications prevalence obtained from our research carried out among Iraqis was 71.43%. Some studies **[21,22]** found ocular complications prevalence in patients with psoriasis at 68% and 57%, respectively.

This study mainly included male patients (62.34%), while female patients made up just 37.66% of those who participated. The patients' ages ranged from thirty to sixty years old. Generally, symptoms occurred more frequently in individuals above fifty years old. However, there was an almost equal distribution of ocular features across genders. The findings of the present study corresponded with findings from a similar study conducted by Erbagci et al. **[23]** involving 235 subjects; 76.17% were men whose ages ranged between 20 and80yearswith a mean age of 46.18 ±13.54 years.

In this study group, the sickness lasted, on average, 5.30 ± 2.10 months. No statistical correlation could be seen between ocular manifestations and duration of sickness. This finding agrees with that of other studies **[24,25],** who equally observed that there was no correlation between the length of the illness and the existence of eye manifestations.

The majority of participants in the research group were primarily impacted by plaque psoriasis (35.06%), 23.38% of psoriatic arthritis sufferers, 25.97% were guttate psoriasis patients, while 11.69% had erythrodermic psoriasis and 3.90% had Pustular type. Erbagci et al. **[26]** observed that facial psoriasis was found in 87.07% of those with psoriasis vulgaris, 86.79% of patients affected by scalp psoriasis, and 43.75% of individuals who had plaque psoriasis.

Approximately 32.47% of patients with a PASI score less than 10, 44.16% of patients with a 10-20 PASI score, and 23.38% of the patients with more than 20 PASI score were reported having ocular manifestations. Ocular manifestations were more frequently observed in PASI patients over 10 when compared to those whose scores were at 10 or below, and this disparity was statically significant. The outcomes were similar to those from the study done by Maitray et al. **[27],** where approximately fifty percentage had a PASI below five, seventy-two percent had a score ranging from five to ten while seventy-four percent scored above ten on their PASI scale developed ocular manifestations.

Of the 77 patients who were given topical corticosteroids and Infliximab, 30 received systemic treatment with Infliximab in addition to the topical corticosteroids. Among these, 47 patients had ocular symptoms, indicating that 84% had some form of eye involvement.

Using topical steroids has been shown to increase the chance of having early cataracts. We checked the patients to know whether there is any significant presenile or complicated cataracts. None of the individuals having presenile cataracts or other complex cataracts were reported in the research sample.

The most common symptom in this study were itching (20.78%), which was followed by the development of red patches on skin surfaces (27.27%). Furthermore, dry eyes were noted in 33.77%, while blepharitis accounted for 10.39% of ocular manifestations that were seen over there. According to Lima and colleagues **[28,29],** the incidence of blepharitis among their study participants was 12.5% which is similar to our finding. In addition, 7.1% of patients were diagnosed with conjunctivitis as a result of conjunctival involvement in our investigation, 5.6% with pinguecula, and 4.8% with pterygium, respectively.

Despite the disease process, one may still find these manifestations in a healthy population, making it hard to exclusive them with this disease. This was a cross-sectional research study where age-sex-matched controls were not present. In their report, conjunctivitis was found in 11.6%, pterygium in 5.33%, and pinguecula in 8%. For their part, there were 4.0% with episcleritis while none showed evidence of scleritis at all. **[30]**

None of the subjects of this research showed signs of corneal involvement as would be characterized by opacification, vascularization or melting away. It is likely that cataracts, which were found in 10.3% of patients, were due to their age. In a study conducted by Wanscher et al. **[31]** on 266 psoriasis patients, it was noted that 188 (70%) had clear lenses, whereas 66 (26%) had tiny opacities that could be regarded as physiological differences.

It was observed in a few studies that people suffering from facial psoriasis tend to display higher rates of depression, anxiety, and also stress-related behaviours than those who have other forms of the disease on different body parts (though this could be less evident). The negative self-image associated with facial psoriasis leads to even greater psychological suffering among one's equals. **[32]**

Moreover, recent studies have concurred social interaction, work performance, and personal relationships can be very vital for an individual's quality of life when he/she has facial psoriasis disorder made worse by physical discomfort that accompanies with itching as one gets the disease. **[33,34]**

The urgent need for an all-inclusive treatment center targeting people with the skin disease psoriasis in their face was revealed by a recent study in the United States, which addresses both physical and mental symptoms related to it. This way, those who have psoriasis on the face will benefit from psycho-social support, skin care therapy, and self-management tips. **[35]**

## 5. CONCLUSION

The findings of our study indicate that the symptoms of facial psoriasis, including redness, scaling, and itching, result in a reduction in the levels of daily activity and quality of life experienced by those affected. This is largely attributed to the physical and bodily discomfort associated with the condition, which in turn leads to a decline in confidence, shyness, and social isolation. The results demonstrated that 71.43% of the cases were associated with ocular complications, with the most prevalent being dry eyes and eye inflammation. The findings of this study indicate that both infliximab and topical corticosteroids contribute to an improvement in the quality of life of patients, albeit to a limited extent. This reinforces the conclusion that these two treatments, namely topical corticosteroids and infliximab, did not result in an increase in eye pressure or disease progression. However, it can be stated that these two treatments contributed to an improvement in the prevalence of symptoms, quality of life and ocular complications to a relatively significant extent.

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