

Understanding the Correlation between Clinical Severity of Psoriasis and Quality of Life among Patients with Psoriasis

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ORIGINAL STUDY

Understanding the Correlation between Clinical Severity of Psoriasis and Quality of Life among Patients with Psoriasis

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Abstract

Background: Patients with psoriasis often struggle with both their bodies and minds, which can make it hard to perform everyday activities. To provide them with the best care and improve their lives, it's important to determine how much psoriasis affects their ability to function. **Aim:** was to explore the relationship between psoriasis severity and functional disability among patients with psoriasis.

Methods: A correlational and cross-sectional research design was employed to achieve the current study's aim. **Setting:** The current study was carried out at the Kasr Al-Ainy Psoriasis Unit and Dermatology Department. A purposive sample of 150 participants was recruited for the study. The researchers used three ways to gather information: a form about the participants' background and medical history, the Psoriasis Area and Severity Index (PASI) to measure how bad their psoriasis, and the Quality of life (QOL) to see how much it affected their daily lives.

Results: Mean age of current study participants was (38.9 ± 7.85), (38%) of participants had severe PASI score and (52.6%) of them had severe QOL score. The total QOL had a strong positive correlation with PASI score ($r = 3.751$, $p < 0.005$).

Conclusion: Based on the results of the current study, there was a significant correlation between QOL and PASI scores. **Recommendations:** Development of evidence-based guidelines for managing functional limitations in psoriasis patients is crucial.

Keywords: Patients, Psoriasis severity & Functional disabilities

1. Introduction

Psoriasis is an erythrosquamous dermatosis and immune-mediated that affects over 125 million individuals globally and can range in severity [1]. Psoriasis's precise causes are not entirely known. Numerous risk factors are known, such as environmental variables including stress and smoking, as well as family history [2]. Additional risk factors encompass infections such as strep throat or skin infections, scraping, insect bites, skin lesions like cuts, or extreme sunburns, obesity, and specific medications like antimalarial, high blood pressure medications,

and lithium; additionally, abrupt discontinuation of oral or injectable corticosteroids can also pose a risk [3, 4].

There are various forms of psoriasis, including pustular, flexural, guttate, plaque, and erythrodermic. The most prevalent kind of psoriasis is called plaque psoriasis, which usually affects the extensor surfaces, particularly the scalp, knees, elbows, and trunk. It looks like well-defined salmon-pink plaques with a scale that are silvery-white. Flexural psoriasis can impact the sub-mammary area, axillae, and vaginal region and typically manifests without much scaling [5].

Received 23 April 2025; revised 1 June 2025; accepted 17 June 2025.
Available online 30 June 2025

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<https://doi.org/10.62445/2958-4515.1057>

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Acute symmetrical eruption of drop-like plaques, primarily affecting the trunk and limbs, is the hallmark of guttate psoriasis. Streptococcal infection is typically the origin of this condition; however, it is not always the case. Individuals with guttate psoriasis may progress to plaque psoriasis. Erythrodermic psoriasis, the least common kind, can cause a peeling rash that can burn or itch severely over the entire body. It may have an acute lifespan or a chronic one [6, 7].

Depending on the type of psoriasis, there can be differences in the indications and symptoms. Psoriasis is most commonly characterized by painful, itchy skin lesions that can split or bleed, discoloration and pitting in the fingernails and toenails, crumbling or separation of the nails from the nail bed, swollen joints, and stiffness [8, 9]. It is important to understand the diverse manifestations and associated challenges in order to develop effective treatment plans and promote emotional and social well-being [10, 11].

A variety of treatment options are used to manage psoriasis symptoms and improve patients' well-being. Personalized treatment plans are formulated based on patients' needs and disease severity. Topical medications such as corticosteroids and creams effectively reduce inflammation and scaling for mild to moderate cases [41]. Vitamin D-based treatments regulate skin cell growth and the immune system, while immune-suppressing creams are particularly effective for scalp psoriasis. Emollients keep the skin hydrated, reducing dryness and itching. Controlled ultraviolet light sources used in phototherapy and laser therapy target specific areas to manage outbreaks [5, 7].

In addition, systemic medications such as methotrexate and cyclosporine, which suppress the immune system are effective for moderate to severe psoriasis, as well as biologics that block specific proteins involved in the inflammatory process, offering highly effective treatment for severe psoriasis [12].

Psoriasis presents major challenges for patients' daily life and functioning. It can lead to social stigma, discomfort, pain, physical limitations, also psychological stress. Patients with psoriasis may suffer significant physical discomfort and even disability due to itching and pain, which can interfere with basic tasks. Nurses play a critical role in helping patients with psoriasis manage the impact of the disease on their functional disabilities [13].

By understanding the relationship between psoriasis severity and functional limitations, nurses can develop and implement effective interventions to improve the quality of life for patients living with this chronic condition. Therefore, the current study aimed

to explore the relationship between psoriasis severity and functional disability among patients with psoriasis.

1.1. Significance of the study

The World Health Organization considers psoriasis a significant worldwide health issue. It's affecting more and more people of all ages, both adults and children, around the globe, with estimates suggesting that 2-4% of the population experiences it [14]. Statistics report that there are over one million Egyptian patients with psoriasis, of which 145,000 have moderate and severe cases [15, 16].

Psoriasis is a long-lasting skin condition with painful, disfiguring, and disabling effects. It significantly impairs patients' lives, impacting their emotional, physical, sexual, and socioeconomic well-being. The challenges posed by psoriasis can be overwhelming, exceeding the coping abilities of individuals and their support networks. Many patients with severe psoriasis express dissatisfaction with available treatments and lack sufficient information about the disease. This lack of knowledge can delay treatment, worsen symptoms, and ultimately lead to greater disability [9]. Moreover, psoriasis has a profound impact on lives of millions worldwide. Therefore, the current study paves the way for exploring the relationship between psoriasis severity and functional disability.

The aim of this study was to investigate the relationship between psoriasis severity and quality of life among patients with psoriasis. The following research questions were developed in order to accomplish this goal:

Research questions:

Q₁: To what extent the overall psoriasis area severity index correlate with overall quality of life among study participants?

Q₂: How do Socio-Demographic data correlate to overall psoriasis area severity index and overall quality of life among study participants?

Q₃: How do medical related data correlate to overall psoriasis area severity index and overall quality of life among study participants?

2. Materials and methods

2.1. study design

A correlational and cross-sectional research design was employed to achieve the current study aim. It allows for the examination of the strength and direction of relationships between variables at a specific point

in time. This design is particularly useful for identifying patterns and associations between variables [17].

2.2. Sample and setting

A purposive sample of 150 participants was eligible for the study and met the following criteria: they were adults between 20 and 60 years old, had a confirmed and documented dermatologist diagnosis of psoriasis in their medical records, had no history of other dermatological diseases, were willing to take part in the study, and did not have any mental disorders. Sample Size Calculation: Epi info -7 program was used, utilizing the following parameters. Population size = 400, Acceptable error = 5%, Confidence coefficient = 95 %, Expected frequency = 50%, thus minimum sample size = 150 patients.

This study took place at the Kasr Al-Ainy Psoriasis Unit, a specialized clinic established in 2015 at Cairo University's Faculty of Medicine. With over 3200 registered patients, it's one of Egypt's largest and longest-running centers for psoriasis care. The unit's extensive database offers valuable insights into the demography, epidemiology, treatment, and patient response of psoriasis in Egypt.

2.3. Study instruments

Three tools were employed by the researchers to gather data:

- Tool (I): Participants' Socio-Demographic Characteristics and Medical-Related Data Form: such as age, gender, level of education, occupation, residence, income, marital status, psoriasis type, duration of psoriasis, family history, smoking habits, body region affected, . . . etc.
- Tool (II) Psoriasis Area and Severity Index (PASI) which was developed by Oakley [26] used in the current study. It includes two sections, the first section is related to severity of psoriasis lesions through assessing the following three factors: 1- erythema (redness), 2-induration (thickness) and 3- scaling on four body regions: head/neck, upper limbs, trunk, and lower limbs. While the second section is related to the percentage of body surface area affected with psoriasis that was measured through rule of nine methods.

2.3.1. Scoring system

The severity of plaque occurrence (redness, thickness, and scaling) in the affected areas is assigned a score from 0 to 4, as follows; none (zero), mild (one), moderate (two), severe (three), or very severe (four). While the assessment of the percentage area affected

in each region is expressed as nil (score zero), < 10 % (score one), 10%–29% (score two), 30%–49 % (score three), 50%–69% (score four), 70% - < 89% (score five) or 90% - < 100% (score six). The total PASI score was calculated by summing the severity scores for the above-mentioned three factors in the four body region multiplying by area percentage by a weighting factor for that region (Head: 0.1, Upper extremities: 0.2, Trunk: 0.3 and Lower extremities: 0.4). A total score of (<5) is considered mild, (5 - < 12) is considered moderate psoriasis, [12–20] is considered severe psoriasis and (>20) is considered very severe.

- Tool (III) Dermatology Life Quality Index (DLQI) is a widely used and well-validated questionnaire that measures the impact of skin disease on a person's quality of life. It aims to quantify how much a skin problem has affected a patient's life over the past week. It consists of 10 questions covering various aspects of daily life.

2.3.1.1. Scoring system: Each question has four possible answers: "Not at all" (scored 0), "A little" (scored 1), "A lot" (scored 2), and "Very much" (scored 3). The total DLQI score is calculated by summing the scores from all 10 questions. The minimum possible score is 0 (no impact on quality of life). The maximum possible score is 30 (maximum impact on quality of life)

2.3.2. Interpretation of scores

The following bands are commonly used to interpret DLQI scores: 0–1: No effect at all on the patient's life. 2–5: Small effect on the patient's life. 6–10: Moderate effect on the patient's life. 11–20: Very large effect on the patient's life. 21–30: Extremely large effect on the patient's life.

2.4. Validity and reliability

Five experts from Medical Surgical Nursing department, medical biostatistics, and in addition to dermatology diseases' specialist reviewed the study tools to assess their content validity for clarity, relevancy, comprehensiveness, and applicability. Modifications were made accordingly. In addition, Cronbach's alpha standards were calculated to estimate the internal consistency of the study tools. Psoriasis Area and Severity Index has a Cronbach's alpha of 0.75, while quality of life had a Cronbach's alpha of 0.78.

2.5. Pilot study

The researchers carried out a pilot study on 10% of the participants (15 patients) to evaluate the applicability and clarity of the study tools in addition

to feasibility of the study before conducting the main study. The pilot study also aimed to estimate the required time needed for completing the questionnaire. Participants involved in the pilot study were taken from the target sample size.

2.6. Ethical considerations

The researchers obtained approval from the Research Ethical Committee at the Faculty of Nursing, Helwan University, Egypt (code 33, dated 29/3/2023), and official permission was granted by the hospital administrator prior to conducting the study. Participants were informed about the goal of the study and their right to withdraw from participation without penalty.

2.7. Data collection procedure

Data were collected over six consecutive months from the beginning of April 2023 until the end of September 2023. Fieldwork was accomplished through the following three phases:

2.7.1. Preparatory and planning phase

In this phase, the researchers were concerned about the feasibility of implementing the study, the accessibility of participants, the environment, and the facilities in which the current study was carried out. After that, the researchers surveyed related tools to select the most appropriate for the current study to assess psoriasis severity and functional disabilities among patients with psoriasis. The first tool was developed by the researchers after an extensive review of recent literature. The content validity was established for the selected tools, namely the psoriasis area and severity index and quality of life. Afterward, the researchers obtained written approval from the relevant authorities to conduct the current study.

2.7.2. Implementation phase

After identifying eligible participants, individualized interview sessions were conducted to gather data. At the outset of each interview, the study's purpose, nature, and tools were explained to each participant. Consequently, written consent was obtained from all participants who met the inclusion criteria and agreed to participate in the current, and then the study tools were completed by the researchers.

2.7.3. Evaluation phase

Psoriasis area and severity index and quality of life were evaluated, the correlation between psoriasis area and severity index and demographic and medical-related data were also investigated. More-

over, the relationship between PASI and QOL was tested.

2.8. Data analysis

The current study utilized Statistical Packet for the Social Sciences version 20 (SPSS-v20) software to analyze the data (Social Science, IBM, USA, 2020). Descriptive statistics were tabulated to describe participants' demographic and medical information using means, percentages, and standard deviations. Chi square test was utilized for categorical data and the Pearson correlation coefficient was measured to assess the correlation between PASI and QOL scores. A p-values less than 0.05 was considered statistically significant.

3. Results

3.1. Participants' socio- Demographic characteristics

Table 1 demonstrates that the mean age of the participants is 38.9 ± 7.85 with a high percentage (48.33%) between 30 - < 40 years old, 65.33% are male, 56% are non-smokers, 77.3% are married, 40.7% have middle level of education, 62% are workers and 55.3% are living in urban areas. It also displays that statistically significant relationships were detected between both total psoriasis area and severity index and total quality of life and participants' age, ($X^2 = 5.405$ & $P = 0.004$, $X^2 = 4.65$ & $P = 0.001$, gender ($X^2 = 8.767$ & $P = 0.003$, $X^2 = 7.654$ & $P = 0.00$) and smoking habits ($X^2 = 10.23$ & $P = 0.005$, $X^2 = 11.986$ & $P = 0.034$); Moreover, there are statistically significant relationships between participants' total quality of life and their occupation ($X^2 = 4.061$ & $P = 0.000$)

3.2. Medical related data and its correlation to psoriasis area and severity index and quality of life

Table 2 displays that 71.3% of the study participants had plaque psoriasis; 44% and 33.3% of them were suffering from psoriasis for one to less than five years and from five years to less than ten years, respectively. In addition, 58.7% of the participants didn't family history of psoriasis, and 68% of them didn't admit to the hospital due to psoriasis before. Moreover, 24.7% and 42.7% of them didn't have any co-morbid disease, and were obese respectively.

Moreover, **Table [2]** also refers that a statistical significant correlations were found between total psoriasis area and severity index and participants' psoriasis type ($X^2 = 13.76$ & $P = 0.000$) and with body mass index (BMI) ($X^2 = 7.26$ & $P = 0.001$). Moreover, there are significant correlations between total quality

Table 1. Frequency and percentage distribution of socio- demographic characteristics and their correlation to total psoriasis area and severity index and total quality of life among study participants (n=150).

Socio-demographic characteristics	No	%	Psoriasis severity		Quality of life	
			X ²	P-value	X ²	P-value
Age:						
20 - < 30	47	31.33	5.405	0.004*	1.65	0.001**
30 - < 40	73	48.33				
40 - ≤ 60	30	20				
Mean ± SD			38.9 ± 7.85			
Gender:						
Male	98	65.33	8.767	0.003*	7.654	0.000**
Female	52	34.66				
Smoking habit						
Smoker	69	46	10.23	0.005*	11.986	0.034*
Non smoker	81	56				
Marital Status:						
Married	116	77.33	4.013	0.07	3.43	0.09
Not married	34	22.66				
Educational level:						
Unable to read and write	22	14.7				
Able to Read and write	34	22.6	3.895	1.395	3.67	0.281
Have middle level of education	61	40.7				
Have University degree	33	22				
Occupation:						
Employee	93	62	3.412	0.063	4.061	0.000*
Not employee	57	38				
Residence:						
Urban	83	55.3	2.056	0.93	3.67	0.59
Rural	67	44.7				

*Result is significant at p-value ≤ 0.05. **Result is significant at p-value ≤ 0.01

of life and participants' psoriasis type ($X^2 = 5.69$ & $P = 0.031$), duration of psoriasis ($X^2 = 7.70$ & $P = 0.000$, and with BMI ($X^2 = 5.846$ & $P = 0.015$).

3.3. Participants' psoriasis area and severity index and quality of life among

Table 3 shows that 18.7% of participants had a mild PASI score, 43.3% had moderate PASI score, 38% had a severe PASI score and the mean PASI scores was 12.44 ± 10.68 . The same table displays that 15.3% of participants had a moderate effect on QOL, 52% had a very large effect on QOL and 32.7% had an extremely large effect on QOL and the mean scores was 11.45 ± 5.85 . Moreover, the total score of QOL had a positive high correlation with the total PASI score ($r = 3.751$, $p = 0.001$).

4. Discussion

Psoriasis is inflammatory, chronic skin condition that has a major functional and physical impact on its patients. Psoriasis affects people differently depending on how severe it is, but it can have a major influence on their lives and can cause functional im-

pairments that are linked to disease activity [25]. Therefore, the aim of the current study was to explore the relationship between psoriasis severity and functional disability among patients with psoriasis.

Regarding age, the current study results displayed that around half of the participants were in the age category of 30 - < 40 years old, with mean age 38.99 ± 9.885 . This result was in line with Mohammed [15], who reported that the mean age of their participants was 37.49 ± 10.99 years. Moreover, there were statistically significant relationships between participants' age and both psoriasis severity and functional disability.

Pertaining to gender, the current study also showed that over half of the participants were male. This finding is consistent with Nabil et al. [18] and Mohamed and Attia [19]. On the other hand, this finding disagrees with Mohammed et al. [15]. From researchers' point of view, the factor that might contributed to this finding was recognized from the literature as well, testosterone levels might exacerbate psoriasis in men, while estrogen levels may play a protective role in women.

Concerning smoking habit, the finding of current study referred that more than half of the participants

Table 2. Frequency and Percentage Distribution of Medical Related Data and Its Correlation to Total Psoriasis Area and Severity Index and Total Quality of life among Study Participants (n=150).

Medical related data	No	%	Psoriasis severity		Quality of life	
			X ²	P-value	X ²	P-value
Type of psoriasis						
Plaque-psoriasis.	107	71.3				
Guttate-psoriasis.	33	22	13.76	0.000***	5.69	0.031*
Inverse-psoriasis.	10	6.7				
Duration of psoriasis						
<one year	17	11.3				
One year - < 5 years.	66	44	3.01	0.067	7.70	0.000***
5 year – < 10 years.	47	31.3				
>10 years.	20	13.33				
Family history of psoriasis						
Yes	38	25.3				
No	88	58.7	9.013	0.083	10.63	0.13
unknown	24	16				
Hospitalized because of Psoriasis:						
Yes	47	31.33	1.895	0.543	4.32	0.070
No	103	68.66				
*Co-morbidities						
None	37	24.7				
Diabetes Mellitus.	19	12.7				
Hypertension.	14	9.3				
Cardiac disease.	27	18	1.056	0.750	3.678	0.16
Renal disease.	11	7.3				
Psoriasis Arthritis.	15	10				
Asthma.	27	18				
Body Mass Index (kg/m2)						
< 18.5 (lower body weight)	5	3.3				
18.5–23.9(normal body weight)	28	18.7	7.26	0.001*	5.846	0.015*
24.0–27.9 (overweight)	53	35.3				
≥28(obesity)	64	42.7				

*Numbers are not mutually exclusive. **Result is significant at p-value ≤ 0.05. ***Result is significant at p-value ≤ 0.01

Table 3. Psoriasis area and severity index and Quality of life among study participants (n=150).

Psoriasis Area and Severity Index	No	%	Mean ± SD
Mild (<5)	28	18.7	
Moderate ((5- < 12)	65	43.3	12.44 ± 10.68.
Sever [12–20]	57	38	
Quality of life			
Moderate effect	23	15.3	
Very large effect	78	52	11.45 ± 5.85
Extremely large effect	49	32.7	
Psoriasis Area and Severity Index	r = 3.751		P-value = 0.001*
Total Quality of life			

*Result is significant at p-value ≤ 0.05

were non-smokers. This finding agreed Mohamed and Attia [19]. Furthermore, the current study documented that there was a positive correlation between smoking and both psoriasis severity and functional disability. This finding was supported by Wei et al. [20] and Adışen et al. [21] who reported in their study that smoking was positively associated with psoriasis severity.

In relation to marital status, according to the current study's findings, almost two-thirds of the partici-

pants were married. This result in agreement with Daglioglu, Cadirci, and Aksoy [22] who found that nearly two-thirds of their participants were married. From researchers' point of view, this result may be contribute to the fact that the participants of the current study are adult in the age group where most of them by default are married. In the same context, there wasn't a relation between marital status and both psoriasis severity and functional disability. This phenomenon could be due to factors like increased

social support, better stress management, or healthier lifestyle habits.

Regarding level of education, the current study result reported that more than one third of the participants had received middle level of education. This result supported by Nabawy, Mohamed and Abdallah [23] who reported that nearly one third of their participants had intermediate education. This result may be related to the fact that more than half of participants were living in urban areas, where the nature of life motivates for education. While, this result wasn't supported by Aalemi, Hamdard, and Sobat [24] who reported in their study that (51.1%) of their participants were illiterate.

Moreover, the current study findings denoted that there wasn't a relation between educational level and psoriasis severity and functional disability. The factor that might contribute to this finding is the majority of participants were intermediate and university educated that lead to receiving adequate treatment, leading to better disease control. Furthermore, educated participants might have access to more flexible work arrangements or better workplace support mechanisms, mitigating the impact of psoriasis on daily activities.

Regarding occupation, the findings of the current study revealed that about two-thirds of the participants were employees. This result agreed with Bulat et al. [27] who found that about half of their participants were employees. From researchers' point of view, this result may be due to participants' age group being in the age of working and productivity. In addition, the majority of participants were educated. In the same context, there wasn't a relation between occupation and psoriasis severity.

This result could be explained by the observation that occupations with high physical demands, such as manual labor or construction, could potentially exacerbate psoriasis through friction, stress, and sweating. While, there was a relation between occupation and functional disability. The possible factor that might contribute to this finding and was recognized from the literature as well, is the fact that psoriasis can cause pain, stiffness, and fatigue, which can interfere with job performance in any occupation.

Regarding place of residence, according to the current study's findings, over half of the participants lived in urban areas. This finding matched with Sawicka, Zaba, and Adamski [28] who found that about two thirds of their participants were living in urban areas. This result may be related the fact that, current study was carried out at Kasr Al-Ainy Psoriasis Unit and most of the geographical areas around it is urban.

Concerning the type of psoriasis, more than two-thirds of the participants had Plaque psoriasis; which

was supported by Alhammad et al. [29] who declared that plaque psoriasis is the most apparent type in their participants. Besides, there was a relation between the type of psoriasis and psoriasis severity. In the researchers' point of view this result is due to the majority of participants suffering from plaque psoriasis. This finding agreed with Chen et al. [41] who reported in their study that there was a significant association between plaque psoriasis and higher PASI scores compared to other types. Furthermore, there was a relation between type of psoriasis and functional disabilities. This finding is in the line with Menter et al. [30] who assessed the effect of psoriasis on work productiveness and found that plaque psoriasis was associated with a significant reduction in work productivity.

Pertaining to psoriasis duration, the study results also revealed that the majority of the current study participants had disease between one to ten years ago. This was almost identical to the results of the study conducted by El-komy et al. [31] who discovered that the average length of psoriasis was 8.8 years. According to researchers, this outcome may be because psoriasis is a chronic, long-lasting condition that needs ongoing monitoring and treatment. Furthermore, there was correlation between psoriasis duration and functional disabilities. This finding was consistent with earlier findings by Aalemi et al. [24] who found a strong positive correlation between psoriasis duration and QOL scores in Afghan patients with psoriasis. The factor that might contributed to this finding is that participants who have had psoriasis for longer tend to experience more functional limitations.

Concerning family history of psoriasis, the current study findings denoted that over half of participants didn't have a family history of psoriasis, this finding is in line with Mohamed and Attia [19] who documented that the majority of their participants didn't have a family history of psoriasis. In addition, there weren't a correlation between family history of psoriasis and its severity and related functional disabilities.

In relation to the most commonly affected body parts, more than half of the participants had psoriasis on the elbow, knee, and scalp. This finding is supported by Ruggiero et al. [7] and Sbidian et al. [6]. The possible factor that might contribute to this finding which is also supported by the literature is the fact that most common affected sites of psoriasis differ based on the type of psoriasis. Elbows and knees are commonly affected by plaque psoriasis [5].

Regarding co-morbidities, most participants in the study had other health problems on top of their

psoriasis, such as diabetes, high blood pressure, heart disease, and psoriatic arthritis. This aligns with research by Gisondi et al. [32], who found that people with psoriasis are more likely to have certain additional health issues compared to the general population.

In relation to patients' Body Mass Index, the findings of the current study displayed that more than one-third of the current study participants were obese. There was also a correlation between BMI and psoriasis severity and related functional disabilities. This finding is verified by Xu et al. [33] and Paroutoglou et al. [34] who studied the association of psoriasis and obesity and reported that obesity is associated with metabolic changes like insulin resistance, which can worsen psoriasis. Lending support to this explanation what was reviewed in the literature: obesity contributes to chronic inflammation, which can exacerbate psoriasis severity, also, psoriasis medications, like corticosteroids, can have weight gain side effects.

Concerning the severity of PASI, the study highlights a high prevalence of moderate to severe psoriasis, affecting more than three-quarter of participants. This aligns with previous research conducted by Khalid et al. [1], where (57.7%) of their participants exhibited severe to very severe psoriasis based on PASI scores. On the other hand, Nabil et al. [18] reported that about half of their participants were suffering from mild psoriasis.

Regarding the severity of QOL, the study findings indicated that more than half of the participants were suffering from a very large effect on their life. These findings are supported by National Psoriasis Foundation [35], that reported that 38% of their respondents with moderate-to-severe psoriasis reported experiencing work limitations due to their condition Balak et al. [41].

Concerning the correlation between total QOL and PASI scores, the current study found that total QOL scores had a positive high correlation with PASI score. Similar findings were also reported by Hajar et al. [36] who reported a significant positive high correlation between PASI and QOL scores, also they reported improvement in PASI scores led to a corresponding improvement in QOL scores. In addition, other studies conducted by Zeng et al. [37]; Mirmiran et al., [38] reported a moderate positive correlation ($r = 0.57$ & $r = 0.50$) between total QOL and PASI scores. However, Lee et al. [39] reported a weak positive correlation ($r = 0.21$) between total QOL and PASI scores. On the other hand, Singh et al. [40] reported in their study that there is no significant correlation between PASI and QOL scores in patients with psoriasis affecting the scalp. However, a moderate correlation was found for psoriasis on other body regions.

5. Conclusion

The present study was conducted to explore the relationship between psoriasis severity and functional disability among patients with psoriasis. A total of 150 clinically diagnosed patients with psoriasis for one to ten years ago, their mean age of 38.9 ± 7.85 years. The majority of participants were male, had plaque-type of psoriasis. The most common affected sites were elbow, knee, and scalp; more than one-third of participants had severe psoriasis severity on PASI scale, and more than half of them had severe functional disabilities on QOL scale. A positive high correlation was found between psoriasis severity and functional disability among the current study participants.

Recommendations/ Implications

Based on the current study findings, it is recommended to:

- Further studies to assess factors related to functional disabilities and psoriasis severity among patients with psoriasis.
- Develop evidence-based guidelines for managing functional limitations in psoriasis patients.
- Advocate for increased access to comprehensive treatment plans that address both the physical and psychosocial aspects of the psoriasis
- Development of educational programs and support groups tailored to the specific needs of patients with varying degrees of psoriasis severity.
- Duplication of the study on a large sample size from different geographic areas to obtain more generalization.

Acknowledgement

The researchers express their deepest gratitude to the patients who participated in the study for their time and cooperation. They also extend their sincere thanks to the medical team at Kasr Al-Ainy psoriasis unit for their dedication and assistance in collecting data for this study.

Conflict of interest

The authors affirm that there is no conflict of interest.

Funding

The authors received no specific grants for this work.

References

- Khalid A, Chaudhary S, Saxena K, Paliwal G, Jain C, Zaidi A. A clinical study to assess disability and stigma associated with psoriasis. *International Journal of Research*. 2021;7(6):840.
- Roszkiewicz M, Dopytalska K, Szymanska E, Jakimiuk A, Walecka I. Environmental risk factors and epigenetic alternations in psoriasis. *Annals of Agricultural and Environmental Medicine*. 2020;27(3).
- van Acht MR, van den Reek JM, de Jong EM, Seyger MM. The effect of lifestyle changes on disease severity and quality of life in patients with plaque psoriasis: A narrative review. *Psoriasis: Targets and Therapy* 2022;35–51.
- Yamanaka K, Yamamoto O, Honda T. Pathophysiology of psoriasis: A review. *The Journal of dermatology*. 2021;48(6):722–31.
- Nast A, Smith C, Spuls PI, Avila Valle G, Bata-Csörgő Z, Boonen H, *et al.* EuroGuiDerm Guideline on the systemic treatment of Psoriasis vulgaris—Part 2: specific clinical and comorbid situations. *Journal of the European Academy of Dermatology and Venereology*. 2021;35(2):281–317.
- Sbidian E, Chaimani A, Guelimi R, Garcia-Doval I, Hua C, Hughes C, *et al.* Systemic pharmacological treatments for chronic plaque psoriasis: a network meta-analysis. *Cochrane Database of Systematic Reviews*. 2023;(7).
- Ruggiero A, Potestio L, Camela E, Fabbrocini G, Megna M. Bimekizumab for the treatment of psoriasis: a review of the current knowledge. *Psoriasis: Targets and Therapy*. 2022;127–37.
- Camela E, Potestio L, Fabbrocini G, Ruggiero A, Megna M. New frontiers in personalized medicine in psoriasis. *Expert Opinion on Biological Therapy*. 2022;22(12):1431–3.
- Yamazaki F. Psoriasis: comorbidities. *The Journal of Dermatology*. 2021;48(6):732–40.
- Moon CI, Lee J, Baek YS, Lee O. Psoriasis severity classification based on adaptive multi-scale features for multi-severity disease. *Scientific reports*. 2023;13(1):17331.
- Norlin JM, Nilsson K, Persson U, Schmitt-Egenolf M. Complete skin clearance and Psoriasis Area and Severity Index response rates in clinical practice: predictors, health-related quality of life improvements and implications for treatment goals. *British Journal of Dermatology*. 2020;182(4):965–73.
- Estevinho T, Lé AM, Torres T. Deucravacitinib in the treatment of psoriasis. *Journal of Dermatological Treatment*. 2023;34(1):2154122.
- Frede N, Hiestand S, Schauer F, Endres D, Tebartz van Elst L, Zeisbrich M, *et al.* Psoriasis and psoriatic arthritis have a major impact on quality of life and depressive symptoms: a cross-sectional study of 300 patients. *Rheumatology and Therapy*. 2023;10(6):1655–68.
- Damiani G, Bragazzi NL, Karimkhani Aksut C, Wu D, Alicandro G, McGonagle D, *et al.* The global, regional, and national burden of psoriasis: results and insights from the global burden of disease 2019 study. *Frontiers in Medicine*. 2021;8:743180.
- Mohammed Ibrahim W, Mostafa Ragheb M, Hamed Mahmoud M, Ali Ibrahim R. Effectiveness of an Educational Program on Self-care practices and Functional Status among Patients with Psoriasis. *Journal of Nursing Science Benha University*. 2023;4(1):617–31.
- Elzehiri DA, Srour OA, Salime RA. Effect of individualized guidance on knowledge and self-care practices of psoriasis patients. *Tanta Scientific Nursing Journal*. 2022;24(1):293–328.
- Maciejewski ML. Quasi-experimental design. *Biostatistics & Epidemiology*. 2020;4(1):38–47.
- Nabil N, Nasr N, Shebl EM. Dermatology life quality index and work limitation among psoriasis patients. *The Egyptian Journal of Hospital Medicine*. 2023;90(1):268–74.
- Mohamed Moselhy M, Attia Abdallah Z. The Effectiveness of an Educational Program on the Severity and Disability of People with Psoriasis. *Egyptian Journal of Health Care*. 2022;13(3):138–58.
- Wei L, Chen S, Zhang Z, Kuai L, Zhang R, Yu N, Shi Y, Li B, Wang R. Prevalence of tobacco smoking and its association with disease severity among patients with psoriasis in China: a cross-sectional study. *Frontiers in Medicine*. 2022;9:883458.
- Adışen E, Uzun S, Erduran F, Güner MA. Prevalence of smoking, alcohol consumption and metabolic syndrome in patients with psoriasis. *Anais brasileiros de dermatologia*. 2018;93(2):205–11.
- Yavuz Daglioglu EB, Cadirci D, Aksoy M. Effects of disease severity on quality of life in patients with psoriasis. *Dermatologic Therapy*. 2020;33(6):e14422.
- Nabawy Mohamed E, Mohamed Abd Al-Aal E, Abdallah Abdel-Mordy M. Knowledge and self-care practices among Psoriatic patients in Benha City. *Journal of Nursing Science Benha University*. 2021;2(2):261–72.
- Aalemi AK, Hamdard AG, Sobat AS. Correlation of Psoriasis Disability Index and Psoriasis Area and Severity Index: A Study from Afghanistan. *Clinical, Cosmetic and Investigational Dermatology*. 2022;559–66.
- Salaffi F, Farah S, Bianchi B, Di Carlo M. Central sensitization in psoriatic arthritis: relationship with composite measures of disease activity, functional disability, and health-related quality of life. *The Journal of Rheumatology*. 2024;51(2):144–9.
- Oakley A. Psoriasis Area and Severity (2009), Zealand. <https://dermnetnz.org/topics/pasi-score>.
- Bulat V, Situm M, Azdajui MD, Lovriu L, Dediol I. Study on the impact of psoriasis on quality of life: psychological, social and financial implication, medicine Academic Mostariensia. 2020;32(4):553–561.
- Sawicka M, Żaba R, Adamski Z. Evaluation of knowledge in the field of proper skin care and exacerbating factors in patients with psoriasis. *Advances in Dermatology and Allergology/Postępy Dermatologii i Alergologii*. 2022;39(2):401–6.
- Alhammad IM, Aseri AM, Alqahtani SA, Alshaebi MF, Alqahtani SA, Alzahrani RA, *et al.* A review on updates in management and treatment of psoriasis. *Archives of Pharmacy Practice*. 2021;12(1-2021):74–8.
- Menter A, Korber K, Griffiths CE, Stingl JC, Nestle FO, Strober BE, *et al.* Association of plaque psoriasis with absenteeism and presenteeism: A matched case-control study. 2019;181(5):750–757 *British Journal of Dermatology* DOI: <https://pubmed.ncbi.nlm.nih.gov/19641206/>.
- El-Komy MH, Mashaly H, Sayed KS, Hafez V, El-Mesidy MS, Said ER, *et al.* Clinical and epidemiologic features of psoriasis patients in an Egyptian medical center. *JAAD international*. 2020;1(2):81–90. <https://doi.org/10.1016/j.jdin.2020.06.002>.
- Gisoni P, Bellinato F, Girolomoni G, Albanesi C. Pathogenesis of chronic plaque psoriasis and its intersection with cardio-metabolic comorbidities. *Frontiers in pharmacology*. 2020;11:117. <https://doi.org/10.3389/fphar.2020.00117>.
- Xu C, Ji J, Su T, Wang HW, Su ZL. The association of psoriasis and obesity: focusing on IL-17A-related immunological mechanisms. *International Journal of Dermatology and Venereology*. 2021;4(2):116–21.
- Paroutoglou K, Papadavid E, Christodoulatos GS, Dalamaga M. Deciphering the association between psoriasis and obesity: current evidence and treatment considerations. *Current obesity reports*. 2020;9:165–78.
- National Psoriasis Foundation. The Psoriasis Burden Survey 2021: Exploring the Impact of Psoriasis on Employment, Healthcare Utilization, and Quality of Life. (2022). Available at: <https://www.psoriasis.org/annual-survey/>
- Al-Oudah GA, Sahib AS, Al-Hattab MK, Al-Ameedee AA. Effect of CoQ10 Administration to Psoriatic Iraqi Patients on Biological Therapy Upon Severity Index (PASI) and Quality of Life Index (DLQI) Before and After Therapy. *Journal of Population Therapeutics and Clinical Pharmacology*. 2022;29(2):e52–60. <https://doi.org/10.37189/JCAD.2022.04832>.
- Wang X, Chen Z, Qiao S, Zhu Q, Zuo Z, Guo B. Analysis of alterations of the gut microbiota in moderate to severe psoriasis patients using 16S rRNA gene sequencing. *Indian Journal of Dermatology*. 2022;67(5):495–503.
- Mirmiran A., Moosaabadi, SH., Khayyat, N. Correlation between psoriasis area severity index and Quality of life in

- Iranian patients with psoriasis. The Iranian Journal of Dermatology. 2020;58(4):243–248.
39. Lee, JH., Han, JY., Kim, BJ., Kwon, HH., Moon, HS. Correlation between psoriasis area severity index and Quality of life in Korean patients with psoriasis: Influence of age and disease duration. Annals of Dermatology. 2020;32(4):447–453.
40. Singh, A., Verma, A., Aggarwal, N., Gupta, T. Relationship between quality of life and disease severity in patients with psoriasis in different body regions. Indian Journal of Dermatology. 2022;67(4):299–304.
41. Balak, DMW., Perez-Chada, LM., Guo, LN., Mita, C., Armstrong, AW., Bell, SJ., *et al.* Definitions of remission in psoriasis: a systematic literature review from the National Psoriasis Foundation. Journal of the European Academy of Dermatology and Venereology. 2022;36(12):2291–2300.
42. Chen, Y., Wei, L., Song, Y., Zhang, R., Kuai, L., Li, B., Wang, R. Life quality among psoriasis patients based on Dermatology Life Quality Index evaluation and its association with psoriasis severity in China: a cross-sectional study. Annals of Medicine. 2023;55(1):2231847.