

# EFFECT OF EDUCATIONAL INTERVENTION ON OUTCOMES OF PATIENTS WITH PSORIASIS

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## Abstract

Psoriasis is an autoimmune disorder which can pose a major public health problem and contribute to rising health care expenses, lowering people's quality of life and capacity to work. Patient education seems to be essential for improving psoriatic patients outcomes, such as self-care practice skills, medication adherence, and consequently their overall quality of life. **Aim:** To evaluate the effect of educational intervention on outcomes of patients with psoriasis. **Design:** A quasi-experimental research design was utilized. **Setting:** This study was conducted at the Dermatology, Venereology, and Andrology department and outpatient clinics at Mansoura University Hospital. **Subject:** A purposive sample of 70 adult patients diagnosed with psoriasis was selected and divided randomly into two equal groups. **Tools:** Three tools were utilized in this study; Tool (I): A structured interview questionnaire that consisted of three parts; Part (1): Demographic characteristics, Part (2): Medical data, and Part (3): Patients' reported self-care practices checklist. Tool (II): Modified 12-Item Medication Adherence Scale. Tool (III): Dermatology Life Quality Index (DLQI). **Results:** The result of this study revealed that after implementation of the educational intervention, there was an improvement in the study group's self-care practices and medication adherence levels, with a statistical significance difference between both groups ( $p < 0.001$ ). Furthermore, the total mean score of DLQI was significantly better in the study group in comparison with the control group. **Conclusion:** Educational intervention has a positive effect on psoriatic patients self-care practices, medication adherence, and quality of life. **Recommendations:** Availability of a standardized colored booklet about psoriasis for patients.

**Index Terms:** Psoriasis, Educational Intervention, Outcomes.

## INTRODUCTION

Psoriasis is a serious chronic, polygenic, debilitating and disfiguring dermatosis. It is typically found on the elbows, knees, and trunk and is marked by red inflammatory plaques, silvery scales, and macules. It may be noticed at any age, from infancy to the age of eighty (Chalitsios et al., 2023). Psoriasis's primary causes are still unknown, though a variety of interactions between inherited, biochemical, and immune disorders have been identified (Mercuri, Paolino, & Longhi, 2023).

Social interactions, psychological wellness, and general health-associated quality of life are all negatively impacted by psoriasis. The disease frequently has an influence on day-to-day activities, occupational, and sexual functioning regardless of the size and intensity of skin lesions (Shaukat, Rashid, & Sadiq, 2023). In addition, psoriasis may cause

feelings of anxiety, hopelessness, dissatisfaction, and shame, all of which can contribute to social disengagement and absence from employment and schooling. Because of psoriatic patients are self-conscious and worry about their appearance, they may find it difficult to engage in social and sporting activities. Also, psoriasis has a major financial and economic effects (Nowowiejska, Baran, & Flisiak, 2021). Numerous co-morbidities include diabetes, dyslipidemia, hypertension, nonalcoholic fatty liver disease, inflammatory bowel disease, chronic renal disease, psoriatic arthritis, and non-melanoma skin cancer are all independently correlated with psoriasis that subsequently impair patients lifestyle (Cai et al., 2021; Taliercio et al., 2021).

Topical medications, phototherapy, systemic immunosuppressants, and, more recently, biologics are used to treat psoriasis. It cannot be completely cured, but can be controlled with the appropriate medication. Psoriasis requires an ongoing treatment regimens, however adherence to therapeutic plans is often limited, leading to suboptimal clinical outcomes. Nonadherence may arise from misconceptions, inadequate knowledge about managing the disease, incorrect assumptions concerning the rate and scope of progress, misperception of potential side effects, and the time-consuming skincare practices (Blauvelt et al., 2020; Sahin et al., 2022).

A successful management of psoriasis require that nurses and patients must collaborate to recognize the management of disease while taking into account factors such as its comorbidities, severity, and possible pharmaceutical adverse effects. Thus, nurses might improve patients' disease conditions and can assist with these changes through offering appropriate educational intervention Thus, through offering appropriate education, nurses can help patients' conditions improve (Avazeh et al., 2022). Consequently, a key component of psoriasis management plan is the health education. Psoriatic individuals' health competence is improved by the integration of their knowledge with self-care practices; this may have a beneficial effect on their coping with the disease, and involvement in health and work. Patients with psoriasis need to get education on how to cope with chronic illness in order to minimize stigmatization. They should also be knowledgeable about the factors that exacerbate psoriasis, hygienic practices, skincare, and life-style modifications which are essential for reducing the severity of psoriasis such as reducing weight, modifying diet, exercising, smoking cessation, and stress management (Beauvais et al., 2022; Moselhy, & Abdallah, 2022)

### **Significance of the study**

Psoriasis is increasingly acknowledged as a major worldwide health issue linked with a substantial humanistic and economic consequences. It affects approximately one hundred million individuals globally, with estimated incidence in various countries varying from 0.09% to 11.43%. In Egypt, it is reported that more than one million of the Egyptians population has psoriasis (Nabil, Nasr, & Shebl, 2023). Psoriasis actually poses a significant challenge in daily activities, and negatively affects many facets of a person's well-being, such as their physical, psychological, sexual, and social status. Moreover, many psoriasis patients are dissatisfied with the available therapies, along with a lack of

knowledge about the disease which may result in undesirable outcomes (Abdelsamed, Ali, & Atia, 2021).

As a result, developing an educational intervention for psoriatic individuals appears to be crucial for helping them understand the disease and begin making behavioral adjustments to enhance their self-care practices. This could ultimately help to improve treatment adherence and quality of life.

### **Operational definition**

- **Outcomes of patients:** refer to the consequences, substantial changes in the health condition and health related behavior of participant patients caused by provision of the educational intervention. It includes patient's self-care practice, adherence of medication and quality of life.

### **AIM OF THE STUDY**

This study aims to evaluate the educational intervention effect on psoriasis patients outcomes.

### **Research hypothesis:**

- H1: After the intervention, the study group's level of self-care practices will be higher than the control group.
- H2: Study group will exhibit higher medications adherence scores after implementing intervention than those in the control group.
- H3: After the intervention, the quality of life of the study group's patients will significantly improve compared to the control group's patients.

### **METHODS**

#### **Design:**

Quasi-experimental research design was utilized in this study.

#### **Setting:**

The study was done at the Dermatology, Venereology and Andrology department and outpatient clinics, Mansoura University Hospital.

#### **Participants:**

A purposive sample of 70 adult psoriasis patients was involved and randomly divided into two equal groups (35 patients for each).

**(I) Study group:** was given the educational intervention along with a routine care of the hospital.

**(II) Control group:** was only given a routine care of the hospital.

### **Inclusion criteria:**

- Adult patients aged from 20-60 years of both gender.
- Willingness to engage in this research.

### **Exclusion criteria:**

- Patients with any mental illness.

### **Sample size calculation**

In order to detect the difference between two dependent means (two groups), the sample size was determined using the G power software with the following data: effect size 0.8,  $\alpha$  error prop 0.05, one tail, power (1- $\beta$  err prop) 95% utilizing in dependent t test. There were 70 participants in the sample, with 35 individuals in each group.

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

The study data was collected by using these three tools:

#### **Tool I: A structured interview questionnaire sheet:**

This tool was designed by researcher after reviewing the related recent literature (Duncan & Lyall, 2020; Deniz et al., 2021) to assess patients' demographic, medical data and self-care practices. It consisted of these three parts;

**Part 1: Demographic characteristics:** It comprised of age, gender, marital status, residence, level of education and occupation.

**Part 2: Medical Data:** It comprised of disease's duration, type, family history of psoriasis, other chronic diseases, current symptoms, and the current treatment regimens.

#### **Part 3: Patients' reported self-care practices checklist:**

This part of tool consisted of 4 categories, with totally 41 questions, each category include sub questions were divided as follow: skin care category (questions 1-14), bathing category (questions 15-21), diet category (questions 22-31), and prevention of psoriasis triggers category (questions 32- 41) .Patients respond for each question as done or not done.

### **Scoring system:**

The practice score for each response was as follows: 1 score for done and zero for not done. Total score for practices = 41 point. The total score for score classified as follow:

- Unsatisfactory <60% (score 0 to < 24, 6).
- Satisfactory  $\geq$  60% (score from 24, 6 to 40).

**Tool II: Modified 12-Item Medication Adherence Scale:** It was adopted to evaluate a patient's adherence to medications from Ueno et al., (2018). It comprised of twelve items arranged into 4 sections, each with 3 items. First, the degree of medication adherence was evaluated; second, the patient-healthcare team collaboration was evaluated; third, the patient's desire to utilize and obtain pharmaceutical information was evaluated; and fourth, the patient's acceptance of the treatment and its fit into their lives was evaluated. Patients respond for each question by selecting one response from the following: never, rarely, sometimes, often, or always.

**Scoring system:**

A five-point Likert scale ranging from 1 to 5 in which never=1, rarely=2, sometimes=3, often=4, always=5. Scores have been reversed for questions no. 3 and 12. The maximum score is sixty points.

**Adherence of medication are categorized as follow:**

- Low: from 0 to < 20
- Moderate: from 20 to < 40
- Full: from 40 to 60

**Tool (III): Dermatology Life Quality Index (DLQI):** It was adopted from Finlay and Khan (1994). The questionnaire of ten items designed to evaluate six distinct domains linked to various areas of an individual's quality of life: questions 1 and 2 dealt with symptoms and emotions, questions 3 and 4 with daily activities, questions 5 and 6 with leisure, questions 7 with work and education, questions 8 and 9 with personal relationships, and question 10 with therapy. These survey questions are scored on a 4-point Likert scale: "not at all" or "not relevant," "a little," "a lot," and "very much."

**Scoring system:**

These items were scored as follow: (3) for very much, (2) for a lot, (1) for a little, and (0) for not at all or not relevant. By counting the responses to each item, the DLQI was computed, yielding a maximum of 30 and a minimum of 0. Increased scores are associated with lower life quality.

**The following categories were assigned to the scale's total score:**

- 0 -1 score indicated no effect at all.
- 2-5 score indicated a small effect.
- 6-10 score indicated a moderate effect.
- 11 to 20 score indicated a large effect..
- 21-30 score indicated a very large effect.

### **Validity:**

The research tools were tested for validity by a commission of seven experts; (six experts from faculty of nursing and one professor from faculty of medicine, Mansoura University). They analyzed the tools for purity, importance, inclusiveness, applicability, simplicity. Some adjustments were performed related to their propositions and commentaries.

### **Reliability:**

The tool was assessed by Cronbach's alpha to check the reliability scores of study tools and it was as follow Tool I was (0.884), which refers to be reliable, Tool II was (0.813), Tool III was (0.846) , and for Tool IV was (0.867).

### **Pilot study:**

A pilot study was conducted on 7 patients to test the feasibility and applicability of the tools. These patients were excluded from the main study sample to prevent their data from influencing the final results.

### **Ethical considerations:**

Official consent was taken from the hospital administrative authorities, while ethical approval was received from the Mansoura University Faculty of Nursing Ethical Committee. The nature and goal of the study were explained to the participants, and they were advised that participation was completely voluntary and private. Throughout the study, participants were guaranteed anonymity, privacy, safety, and discreetly. They also had the option to withdraw at any moment. Prior to taking part in the research, participants gave their informed consent. All things considered, these precautions guarantee the study's integrity, rigor, and ethical behavior, strengthening the validity of its conclusions and defending the participants' rights and welfare.

**Data collection:** The study was carried out in the following three phases listed below.

#### **A) Preparatory phase:**

The investigator introduced herself to participants and explained the study's purpose. Individual interviews were conducted with each patient in both groups to assess for demographic characteristics, medical data and self-care practice, adherence level, and quality of life by using the study tools I, II, III respectively as pre-test. Researchers prepared colored educational booklet written in simple Arabic language.

#### **B) Implementation phase:**

The educational intervention was delivered for each patient in the study group individually in form of three sessions at the morning and afternoon shifts .The average duration of each session lasted from 20 - 30 minutes.



The sessions covered the following:

- ❖ **First session:** During the this session, participants learned about psoriasis, including its definition, triggers, causes, symptoms, types, and complications.
- ❖ **Second session:** Included information about psoriasis treatment modalities, as well as the value of adhering to drug regimens.
- ❖ **Third session:** This session comprised instructions about self-care activities such as personal hygiene, skin care and nail care; nutritional management along disease process and lifestyle modifications in order to prevent exacerbation of psoriasis.
  - Various teaching media were used during the sessions, such as videos; hand out, and color guide pictures.
  - The researcher conducted phone calls and WhatsApp messages on a regular basis to confirm information and reinforce patient's adherence to instructions.
  - Each patient in the study group was given a copy of the colored booklet for reinforcement.
  - Data collection lasted 6 months from January to June 2023.
  - Researchers handed over psoriasis educational booklet to the control group after data collection was fulfilled to apply principle of fairness.

### C) Evaluation phase:

The effect of educational intervention on patient's self-care practice, medication adherence as well as QoL was evaluated by using tool I part 3, tool II, and III through comparison of these data between both study and control groups as follow:

- ✓ The 1<sup>st</sup> time: one month after educational intervention implementation as (post-test).
- ✓ The 2<sup>nd</sup> time: two months after post- test as (follow up).

### Statistical analysis:

**Data Input and Analysis Software:** Version of the IBM SPSS software package 20.0 was used to analyze the data once they were gathered and put into a computer. This software allows for efficient data management and statistical analysis.

**Assessment of Normality:** Normality of the data distribution was assessed using several methods, including examining the standard deviation (less than 25% of the mean) and skewness (less than 1). Additionally, Q-Q plots and box plots were utilized to visually inspect the data distribution and ensure the absence of outliers.

**Significance Testing:** At the 5% level, the results' significance were evaluated. This required carrying out the proper statistical tests, based on the type of data and research objectives, such as t-tests, chi-square tests, or analysis of variance (ANOVA).

Significance testing helps determine whether observed differences or associations are statistically meaningful or occurred by chance.

## RESULT

**Table 1: Distribution of the studied sample according to demographic characteristics (n=70).**

	Study (n = 35)		Control (n = 35)		$\chi^2$	p
	No.	%	No.	%		
<b>Age (years)</b>						
20 < 30	6	17.1	3	8.6	1.913	MCp= 0.589
30 < 40	13	37.1	14	40.0		
40 < 50	10	28.6	11	31.4		
50-60	6	17.1	7	20.0		
<b>Gender</b>						
Male	22	62.9	19	54.3	0.530	0.467
Female	13	37.1	16	45.7		
<b>Marital status</b>						
Single	8	22.9	9	25.7	2.786	MCp= 0.379
Married	25	71.4	20	57.1		
Widowed	0	0.0	1	2.9		
Divorced	2	5.7	5	14.3		
<b>Level of education</b>						
Illiterate	7	20.0	13	37.1	6.883	MCp= 0.073
Primary/Preparatory	5	14.3	0	0.0		
Secondary	18	51.4	16	45.7		
University	5	14.3	6	17.1		
<b>Occupation</b>						
Working	21	60.0	23	65.7	0.245	0.621
Not working	14	40.0	12	34.3		
<b>Residence</b>						
Rural	18	51.4	19	54.3	0.057	0.811
Urban	17	48.6	16	45.7		

**Table (1):** showed that males were more prevalent in the both groups, and greater than one- third of both groups (study, 37.1%; control 40.0%) aged from 30 to less than 40 years old.

Regarding the marital status, the highest percentage of the study and the control group were married (71.4% and 57.1%) respectively.

Furthermore; almost half of the study group and the control group had a secondary education. As regard occupation; two-thirds of the studied participants were employed (60.0% and 65.7%) respectively.



**Table 2: Frequency distribution of studied groups regarding their medical data.**

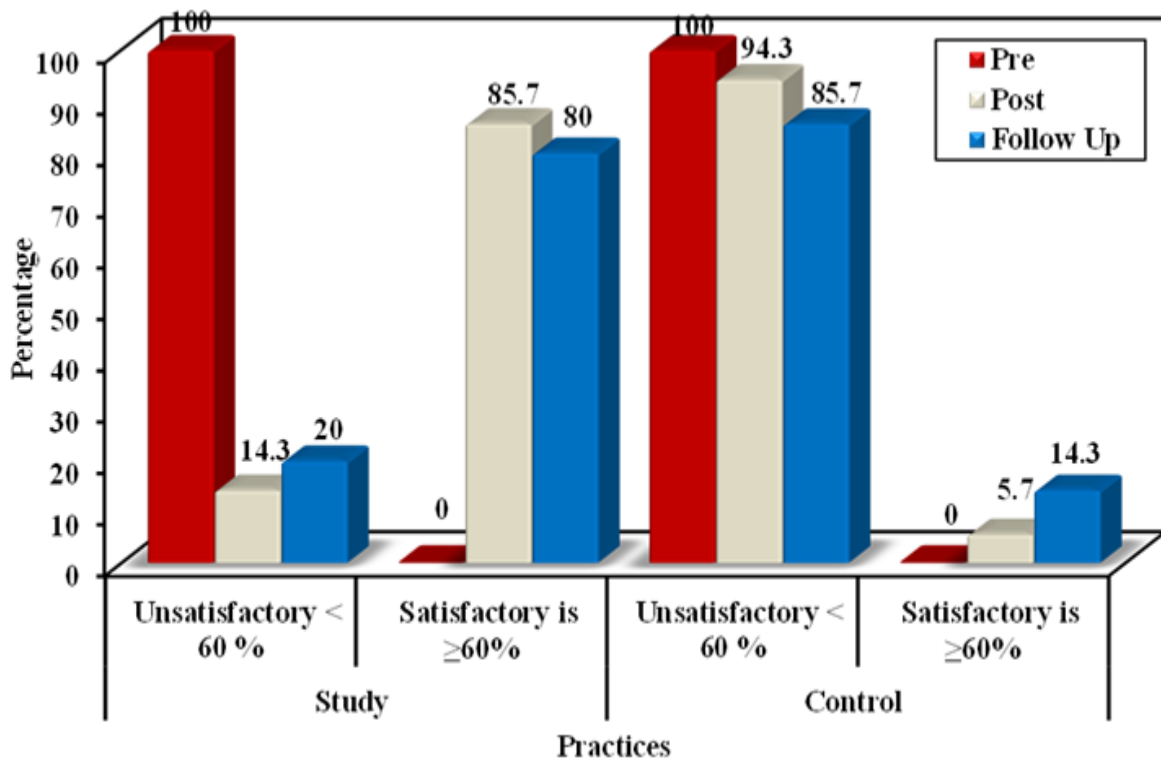
	Study (n = 35)		Control (n = 35)		χ <sup>2</sup>	p
	No.	%	No.	%		
<b>Duration of disease</b>						
< 1 year	16	45.7	13	37.1	2.220	MCp= 0.594
1 year < 5 years	18	51.4	19	54.3		
5 years < 10 years	1	2.9	1	2.9		
≥ 10 years	0	0.0	2	5.7		
<b>Family history of psoriasis</b>						
Yes	5	14.3	4	11.4	0.128	0.721
No	30	85.7	31	88.6		
<b>If yes</b>	<b>(n = 5)</b>		<b>(n = 4)</b>			
Relatives of the first	4	80.0	1	25.0	2.723	FEp= 0.206
Relatives of the second	1	20.0	3	75.0		
<b>Type of psoriasis</b>						
Plaque	30	85.7	33	94.3	1.734	MCp= 0.430
Guttate	0	0.0	0	0.0		
Inverse	1	2.9	0	0.0		
Erythrodermic	4	11.4	2	5.7		
Pustular	0	0.0	0	0.0		
<b>Comorbidity</b>						
Yes	18	51.4	15	42.9	0.516	0.473
No	17	48.6	20	57.1		
<b>If Yes</b>	<b>(n = 18)</b>		<b>(n = 15)</b>			
Hypertension	10	55.6	5	33.3	1.630	0.202
Heart diseases	1	5.6	4	26.7	2.836	FEp=0.152
Diabetes mellitus	10	55.6	6	40.0	0.793	0.373
Renal diseases	0	0.0	1	6.7	1.238	FEp=0.455
Liver diseases	3	16.7	0	0.0	2.750	FEp=0.233
Rheumatoid arthritis	11	61.1	8	53.3	0.203	0.653
Other	1	5.6	0	0.0	0.859	FEp=1.000
<b>Current symptoms</b>						
Scales	29	82.9	31	88.6	0.467	0.495
Itching and burning	31	88.6	29	82.9	0.467	0.495
Redness and irritation	26	74.3	21	60.0	1.619	0.203
Dry, cracked skin	27	77.1	25	71.4	0.357	0.550
Joint pain and swelling	11	31.4	8	22.9	0.650	0.420
Other	0	0.0	0	0.0	–	–
<b>Current treatment regimen</b>						
Local	35	100.0	35	100.0	–	–
Phototherapy	7	20.0	9	25.7	0.324	0.569
Systemic	27	77.1	28	80.0	0.085	0.771

<sup>2</sup>: **Chi square test**                      MC: **Monte Carlo**                      FE: **Fisher Exact**

p: p value for comparing between the two studied groups

\*: Statistically significant at p ≤ 0.05

**Table (2):** Almost half of studied patients suffered from psoriasis from one year to less than five years. In relation to family history of psoriasis, it can be observed that most of participants in both study and control groups had no family history of psoriasis (85.7% and 88.6%) respectively. While the table denotes that plaque psoriasis was the most common type among the participants in both groups 85.7% (study group) and 94.3% (control group); In addition, it was noted that there was a relevant presence of comorbidities in the study and control groups (51.4% & 42.9%). Furthermore, itching, in addition to scales are the most observed complain.



**Figure (1): Comparison between studied groups according to total level of self-care practices throughout intervention phases.**

**Figure (1):** showed that all patients in both groups (100%) had unsatisfactory practices level at pre intervention with no statistically significant difference was present between both groups. On the other hand, a highly statistically significant difference was noticed between the studied groups regarding psoriasis self-care practices at post and follow up the intervention where ( $p < 0.001$ ).

**Table 3: Overall mean score of dermatology life quality index between the studied groups during the study period.**

(DLQI)	Study (n = 35)		Control (n = 35)		Test of Sig	p
	No.	%	No.	%		
<b>Pre</b>						
No effect (0 – 1)	0	0.0	0	0.0	$\chi^2= 0.168$	MCp= 1.000
Small effect (2-5)	0	0.0	0	0.0		
Moderate Effect (6-10)	2	5.7	2	5.7		
Large Effect (11 to 20)	27	77.1	27	77.1		
Very Large (21-30)	6	17.1	6	17.1		
Total Score (Mean $\pm$ SD.)	16.97 $\pm$ 3.99		16.69 $\pm$ 3.83		U=573.50	0.646
<b>Post</b>						
No effect (0 – 1)	0	0.0	0	0.0	$\chi^2= 31.305^*$	MCp<0.001*
Small effect (2-5)	4	11.4	0	0.0		
Moderate Effect (6-10)	20	57.1	2	5.7		
Large Effect (11 to 20)	11	31.4	30	85.7		
Very Large (21-30)	0	0.0	3	8.6		
Total Score (Mean $\pm$ SD.)	9.11 $\pm$ 3.33		16.06 $\pm$ 3.88		U=114.0	<0.001*
<b>Follow Up</b>						
No effect (0 – 1)	0	0.0	0	0.0	$\chi^2= 42.677^*$	MCp<0.001*
Small effect (2-5)	5	14.3	0	0.0		
Moderate Effect (6-10)	23	65.7	2	5.7		
Large Effect (11 to 20)	7	20.0	27	77.1		
Very Large (21-30)	0	0.0	6	17.1		
Total Score (Mean $\pm$ SD.)	8.49 $\pm$ 2.77		16.54 $\pm$ 3.64		U=45.50	<0.001*

**SD: Standard deviation**  
**MC: Monte Carlo**

**U: Mann Whitney test**

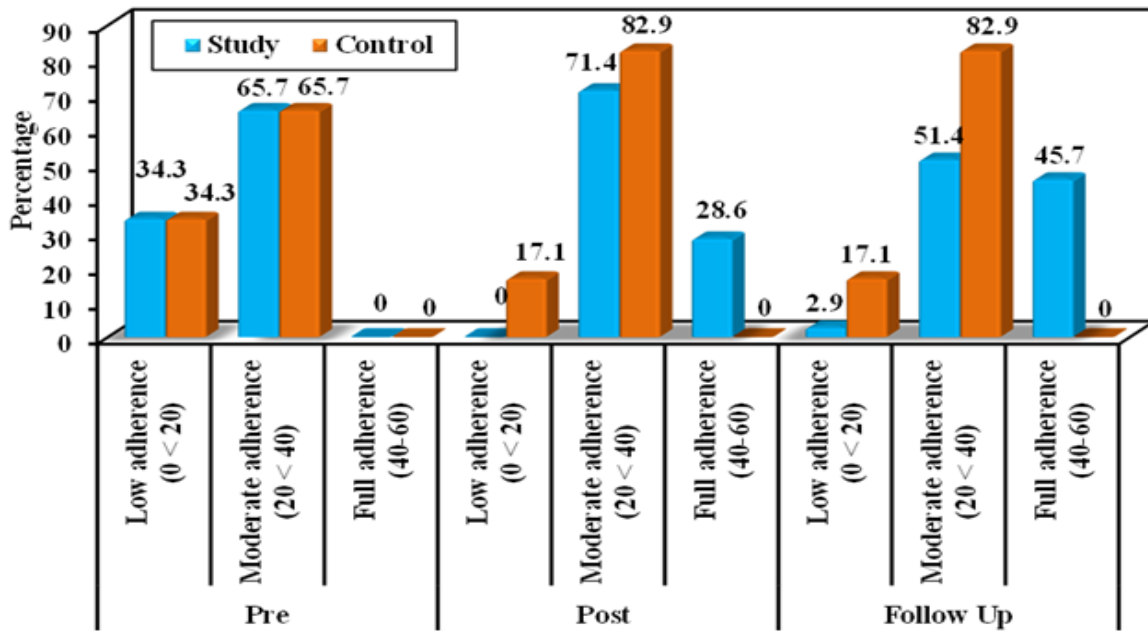
**$\chi^2$ : Chi square test**

**p:** p value for comparing between the two studied groups at  $p \leq 0.05$

**\***: Statistically significant

**Table (3):** Presented that no statistical significant difference was found between the study and the control group in relation to total mean scores of DLQI in pre intervention phase of the study.

This table also elaborated a significant improvement of the total mean score of quality index of the study group with reduction from (16.97  $\pm$  3.99) during the pre-intervention to (9.11  $\pm$  3.33) through the post and (8.49  $\pm$  2.77) throughout the follow-up in comparison with control group with a highly statistically significant difference at <0.001 .



**Figure (2): Total level of modified 12-item medication adherence scale between the studied groups during the study period.**

**Figure (2):** As shown in this figure, there was no a statistically significant difference between the studied groups in relation to overall medication adherence in pre intervention phase of the study. Also, there was an improvement in the medication adherence level among study group subjects compared to control group subjects at (post & follow up) of intervention with p value at <0.001.

## DISCUSSION

Psoriasis is a recurrent autoimmune multifactorial disease that often causes disfigurement and impairment. Because of its complex pathophysiology and numerous comorbidities, it is now considered a systemic disease. It result in a decline in the work productivity and life quality of patients (Nowowiejska et al., 2022).The disease necessitates systematic treatment and proper care. As a result, health education must be incorporated into the management of psoriasis patients (Larsen et al., 2021).

The study found that most of the patients studied were male, consistent with finding from Yavuz Daglioglu et al., (2020) who stated that close to half of studied psoriasis participants are males. In the opposite direction Bayomy et al., (2022) who stated that most of their studied sample were female. The majority of patients fell within the age of thirty to less than 40 years. This finding aligns with the results of Mohamed et al., (2022) who similarly observed that most of patients were 30-40 years old within the both groups. This result is in conflict with Adea et al., (2022) who reported that almost all of studied patients were less than 25-year age.

The discrepancy in education levels among the studied patient populations highlights the variability that can exist across different studies. In the present study, nearly half of the patients were secondary educated. Similarly, Gisoni et al., (2021) who found that the majority of studied patients had medium education. However, Eldesoky et al., (2023) who noticed that fifty percent of sample can't read and write, indicating a different educational profile among their participants. This study noted that mostly of two groups were working. That's agree with Sendrasoa et al., (2020) who illustrated that the most subjects were employed. This result doesn't correspond with Adea et al., (2022) who reported that; the majority of those individuals not work.

In terms of psoriasis type, the highest percentage of studied sample had plaque psoriasis. It matches up with El-Komy et al., (2020) who represented that the plaque psoriasis accounted for the majority of the investigated population. This result with the fact of plaque psoriasis is the most commonly observed type of psoriasis. It affects approximately 6.7 million adults. About 80% to 90% of people with psoriasis have plaque psoriasis (Singhvi et al., 2020). Furthermore, in term of psoriasis current signs and symptoms, the present study showed that the majority of sample currently complained from itching and scales. This finding is compatible with Eldesoky et al., (2023) who noted that the highest proportion of studied patients currently complained from itching and silvery thick scales.

The majority of studied sample had unsatisfactory practices level at pre implementation phase of the intervention. Our study finding was similar to Mohammed et al., (2021) who summarized that over two-thirds of the studied sample had unsatisfactory overall scores of practices. In contrast, the study group have significantly higher level of self-care practice post-intervention and at follow-up compared to the control group. This finding aligns with Nabhan et al., (2021) who demonstrated significant improvements in patients' practices following self-management program. In addition, Moselhy, & Abdallah, (2022) who noted that almost all of the study group had adequate practices level after program implementation.

Concerning effect of the intervention upon medication adherence level; the recent study noticed that over one third of the two groups was low adherent to treatment at pre intervention implementation. This could be due to knowledge gap, inadequate instructional educational guidelines, complexity of treatment and forgetfulness. These results were confirmed by Wang et al., (2019), who discovered that (41.5%) of psoriasis patients had poor adherence.

The present study also cleared that the significant improvement in adherence within study group after implementing of intervention in comparison with control group was observed. These were consistent with Pouls et al., (2021) who yielded that a majority of a statistically significant improvement of drug adherence compared to the control group following interactive sessions. This result disagree with Bubak et al., (2019) who noted that no positive effects were seen on the therapy adherence after the program. The improvement in our study in self-care practice and medication adherence after implementing the

intervention may be attributed to health instruction, using different teaching methods and colored media and booklet.

Finally, regarding dermatology life quality index (DLQI) scores; it was noted in this study that there was a significant improvement among the study group when compared to the control group at post and follow up phases of educational intervention. Such outcomes were corresponded with Riad et al., (2021) who concluded that the study group patients' quality index ratings improved scores was improved more than in control group after implementing asynchronous mobile health nursing intervention. Likewise, Jendoubi et al., (2022) revealed contradicting data, finding the standardized education programme did not improve HRQoL in psoriasis.

## CONCLUSION

The study concluded that educational intervention improve psoriatic patients' self-care practices, medication adherence, and quality of life.

## RECOMMENDATION

**Based on the result, the following recommendations are suggested:**

- Availability of a standardized colored booklet about psoriasis for patients is needed.
- The educational intervention should be recommended as a routine nursing management plan of psoriasis.
- The study be repeated over a longer time period and with a larger sample size in order to ensure that the results are generalizable and used more widely.

## References

- 1) **Chalitsios, C. V., Georgiou, A., Bouras, E., Evangelou, E., Gill, D., Tsilidis, K. K., & Tzoulaki, I. (2023).** Investigating modifiable pathways in psoriasis: A Mendelian randomization study. *Journal of the American Academy of Dermatology*, 88(3), 593-601.
- 2) **Mercuri, S. R., Paolino, G., & Longhi, E. V. (2023).** Psoriasis in Adolescents and Adults. In *Managing Psychosexual Consequences in Chronic Diseases* (pp. 105-114). Cham: Springer International Publishing.
- 3) **Shaukat, A., Rashid, S., & Sadiq, M. (2023).** Coping strategies, emotion regulation and quality of life among psoriasis patients. *The International Journal of Psychiatry in Medicine*, 58(5), <https://doi.org/10.1177/00912174231170204>
- 4) **Nowowiejska, J., Baran, A., & Flisiak, I. (2021).** Mutual relationship between sleep disorders, quality of life and psychosocial aspects in patients with psoriasis. *Frontiers in Psychiatry*, 12, 674460.
- 5) **Cai, J., Cui, L., Wang, Y., Li, Y., Zhang, X., & Shi, Y. (2021).** Cardiometabolic comorbidities in patients with psoriasis: focusing on risk, biological therapy, and pathogenesis. *Frontiers in Pharmacology*, 12, 774808.



- 6) **Taliercio, V. L., Snyder, A. M., Webber, L. B., Langner, A. U., Rich, B. E., Beshay, A. P., ... & Secrest, A. M. (2021).** The disruptiveness of itchiness from psoriasis: a qualitative study of the impact of a single symptom on quality of life. *The Journal of Clinical and Aesthetic Dermatology*, 14(6), 42.
- 7) **Blauvelt, A., Leonardi, C. L., Gooderham, M., Papp, K. A., Philipp, S., Wu, J. J., ... & Langley, R. G. (2020).** Efficacy and safety of continuous risankizumab therapy vs treatment withdrawal in patients with moderate to severe plaque psoriasis: a phase 3 randomized clinical trial. *JAMA dermatology*, 156(6), 649-658.
- 8) **Sahin, U., Reeve, K., Tochtermann, G., Kilanowski, K., Navarini, A., Imhof, L., ... & Hofbauer, G. F. (2022).** HautTief Multidisciplinary Educational Program for Patients with Psoriasis or Atopic Dermatitis: A Randomized Controlled Study. *Dermatology*, 238(6), 1050-1059.
- 9) **Avazeh, Y., Rezaei, S., Bastani, P., & Mehralian, G. (2022).** Health literacy and medication adherence in psoriasis patients: a survey in Iran. *BMC Primary Care*, 23(1), 113.
- 10) **Moselhy, M.M., & Abdallah, Z.A., (2022).** The Effectiveness of an Educational Program on the Severity and Disability of People with Psoriasis. *Egyptian Journal of Health Care*, 13(3), 138-158.
- 11) **Beauvais, C., Fayet, F., Rousseau, A., Sordet, C., Pouplin, S., Maugars, Y., ... & Gossec, L. (2022).** Efficacy of a nurse-led patient education intervention in promoting safety skills of patients with inflammatory arthritis treated with biologics: a multicentre randomised clinical trial. *RMD open*, 8(1), e001828.
- 12) **Nabil, N., Nasr, N., & Shebl, E. M. (2023).** Dermatology life quality index and work limitation among psoriasis patients. *The Egyptian Journal of Hospital Medicine*, 90(1), 268-274.
- 13) **Abdelsamed, E. M., Ali, S. A., & Atia, N. S. (2021).** Perceived Severity and Quality of Life of Egyptian Psoriasis Patients. *Annals of the Romanian Society for Cell Biology*, 25(6), 19988-19999.
- 14) **Duncan, D. L., & Lyall, G. (2020).** Psoriasis: Management and self-care. *British Journal of Child Health*, 1(1), 14-19.
- 15) **Deniz, F., Altunay, I., Ozkur, E., Cerman, A., Kayaerdogan, H. İ. L. A. L., & Bulur, I. (2021).** Evaluation of healthy lifestyle behaviors in psoriasis patients. *Medical Bulletin of Sisli Etfal Hospital*, 55(2).
- 16) **Ueno, H., Yamazaki, Y., Yonekura, Y., Park, M. J., Ishikawa, H., & Kiuchi, T. (2018).** Reliability and validity of a 12-item medication adherence scale for patients with chronic disease in Japan. *BMC health services research*, 18(1), 1-9.
- 17) **Finlay, A. Y., & Khan, G. (1994).** Dermatology Life Quality Index (DLQI)—a simple practical measure for routine clinical use. *Clinical and experimental dermatology*, 19(3), 210-216.
- 18) **Nowowiejska, J., Baran, A., Grabowska, P., Lewoc, M., Kaminski, T. W., & Flisiak, I. (2022).** Assessment of life quality, stress and physical activity among patients with psoriasis. *Dermatology and Therapy*, 12(2), 395-406.
- 19) **Larsen, M. H., Strumse, Y. S., Andersen, M. H., Borge, C. R., & Wahl, A. K. (2021).** Associations between disease education, self-management support, and health literacy in psoriasis. *Journal of Dermatological Treatment*, 32(6), 603-609.
- 20) **Yavuz Daglioglu, E. B., Cadirci, D., & Aksoy, M. (2020).** Effects of disease severity on quality of life in patients with psoriasis. *Dermatologic Therapy*, 33(6), e14422.
- 21) **Bayomy, H. E., Albedaiwi, Y., Alabdulatif, S. K. A., Almutairi, F. S. F., Aloufi, F. A. S., Alruwaili, R. H. A., ... & Alenezy, A. (2022).** Psoriasis in Northern Saudi Arabia: Clinical features and implications for quality of life. *Journal of Public Health Research*, 11(4), 22799036221123961.



- 22) **Mohamed, H. A. B., Ahmed, H. M. M., Gamal, Z., & Abouelezz, M. E. (2022).** Effectiveness of Sleep Hygiene Measures on Sleep Quality, Activity of Daily Living and Disease Severity Among Patients with Psoriasis. *Egyptian Journal of Health Care*, 13(4), 1626-1639.
- 23) **Adea, M. K., Lefta, R. M., & Younis, N. M. (2022).** Impact of psychosocial aspect parameters on psoriasis patients' quality of life at outpatient clinic in Al-Dewania City, Iraq. *Rawal Med J*, 47, 892-5.
- 24) **Gisoni, P., Bellinato, F., Piaserico, S., Di Leo, S., Cazzaniga, S., & Naldi, L. (2021).** Preference for telemedicine versus in-person visit among patients with psoriasis.
- 25) **Eldesoky, H. A.M., Abdelaziz, T. M., Eleryan, E. M., & Rady, S. E. (2023).** Effect of Self-Management Nursing Intervention on Quality of Sleep and Daily Living Activities among Patients with Psoriasis. *Egyptian Journal of Nursing and Health Sciences*, 4(1), 42-68.
- 26) **Sendrasoa, F. A., Razanakoto, N. H., Ratovonjanahary, V., Raharolahy, O., Ranaivo, I. M., Andrianarison, M., ... & Rapelanoro, R. F. (2020).** Quality of life in patients with psoriasis seen in the Department of Dermatology, Antananarivo, Madagascar. *BioMed Research International*, 2020.
- 27) **El-Komy, M. H. M., Mashaly, H., Sayed, K. S., Hafez, V., El-Mesidy, M. S., Said, E. R., ... & Rasheed, H. (2020).** Clinical and epidemiologic features of psoriasis patients in an Egyptian medical center. *JAAD international*, 1(2), 81-90.
- 28) **Singhvi, G., Hejmady, S., Rapalli, V. K., Dubey, S. K., & Dubey, S. (2020).** Nanocarriers for topical delivery in psoriasis. In *Delivery of drugs* (pp. 75-96). Elsevier
- 29) **Mohamed, E.N., Abd Al-Aal, E.M., & Abdel-Mordy, M.A. (2021).** Knowledge and self-care practices among Psoriatic patients in Benha City. *Journal of Nursing Science Benha University*, 2(2), 261-272.
- 30) **Nabhan, GH., Mohammed, L., & Abd El-Naby, A. (2021).** Effect of self-care management program on quality of life and disease severity among patients with Psoriasis. *SYLWAN*, 165(1).
- 31) **Moselhy, M.M., & Abdallah, Z.A., (2022).** The Effectiveness of an Educational Program on the Severity and Disability of People with Psoriasis. *Egyptian Journal of Health Care*, 13(3), 138-158.
- 32) **Wang, W., Qiu, Y., Zhao, F., & Zhang, F. (2019).** Poor medication adherence in patients with psoriasis and a successful intervention. *Journal of Dermatological Treatment*, 30(6), 525-528.
- 33) **Pouls, B. P., Vriezেকolk, J. E., Bekker, C. L., Linn, A. J., van Onzenoort, H. A., Vervloet, M., ... & van den Bemt, B. J. (2021).** Effect of interactive eHealth interventions on improving medication adherence in adults with long-term medication: systematic review. *Journal of Medical Internet Research*, 23(1), e18901
- 34) **Bubak, C., Schaarschmidt, M. L., Schöben, L., Peitsch, W. K., & Schmieder, A. (2019).** Analyzing the value of an educational program for psoriasis patients: a prospective controlled pilot study. *BMC Public Health*, 19, 1-12.
- 35) **Riad, N.A., Othman, A.I.B., Deeb, S.H., & El Masry, S. (2021).** Effect of asynchronous mobile health nursing intervention on medications adherence and quality of life among patients with psoriasis. *Egyptian Journal of Health Care*, 12(2), 1430-1444.
- 36) **Jendoubi, F., Balica, S., Richard, M. A., Chiaverini, C., Bernier, C., Quiles, N.,... & French Psoriasis Research Group. (2022).** A multicentre randomised controlled study evaluating the effect of a standardised education programme on quality of life, disease severity, and disease knowledge in patients with moderate-to-severe psoriasis: the EDUPSO study. *Dermatology*, 238(4), 630-639.