The Effectiveness of an Educational Program on the Severity and Disability of People with Psoriasis

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Abstract

Background*:** Psoriasis is a chronic autoimmune skin disease with long-term impairment. The nurses have a great responsibility to develop efficient educational programs to improve the psoriatic people's knowledge and self-care practices that enable to reduce severity and disability index. ***The study aimed to evaluate the effectiveness of the educational program on the psoriasis severity and disability index of people with psoriasis. ***Research design:*** a quasi-experimental quantitative non-equivalent control group design. ***Setting***: the study was conducted at the outpatient clinics of Cairo Hospital for Dermatology and Venerology (Al Haud Almarsoud Hospital). ***Sampling:*** A purposive sample consisted of 226 people with psoriasis divided into two groups (control and study groups). ***Tools***: Three tools were utilized, 1) interview questionnaires for assessing demographic data and disease history, Psoriasis Knowledge (PKQ), and self-care practices. 2) Psoriasis area & severity index (PASI), 3) Psoriasis Disability Index (PDI). ***Results:*** After program implementation, the follow-up test showed a significant improvement in the study group in good and average knowledge score levels of 47.8% and 32.7% respectively and adequate self-care practices of 78.8% with statistical significance relation between both groups ($p< 0.000^{**}$). Also, there was a statistically significant improvement in the PASI in the study group compared with the control group ($p<.0.015^{*}$). Additionally, a significant reduction in the mean score of PDI of the study group to 8.75±6.21. ***Conclusion***: The educational program detected a significant positive impact on the severity and disability index of people with disability through improvement in their knowledge and self-care practices. ***Recommendation*:** Educational programs should be continuously conducted for improving the psoriasis people's knowledge and self-care practices.

Keywords: Psoriasis, Severity, Disability Index, Self-care Practices, knowledge, Educational program.

Introduction:

Psoriasis is an inflammatory chronic, skin disease that is estimated to affect 1–3% of the world's population that accounts for more than 200 million people, making psoriasis a serious global problem ***(Teixeira et al., 2022 and Meng et al., 2018)***. In Egypt, more than one million were affected by skin psoriasis ***(Farag, 2019)***. It's caused by a complex interconnection between genetics, environment, compromised skin barrier, and immune dysfunction, resulting in rapid regeneration of skin cells to ten times faster than normal. This leads to formulate red plaques on the surface of the skin that tends to occur in the scalp, elbows, knees, and lower back, but any skin surface can be involved ***(Stephanie and Gardner, 2021)***. Many factors can contribute to an increase risk of developing psoriasis as family history, stress, smoking, and other risk factors and triggers such as skin infections or injuries, cold weather, dry conditions, alcohol consumption, emotional stress, certain medications, and rapid withdrawal of corticosteroids ***(Llamas-Velasco et al., 2017)*.**

There are several types of psoriasis that ranges in severity from a few scattered red, scaly plaques to the involvement of almost the

entire body surface. Plaque psoriasis which is the most common form with red skin lesions usually appears on elbows, knees, lower back, and scalp. Guttate psoriasis primarily affects young adults related to a bacterial infection as strep throat usually characterized by small, water-drop-shaped, scaling lesions that appear on the trunk (back, chest and abdomen), as well as the arms, legs, and scalp. Inverse psoriasis is usually manifested as very red lesions in body skin folds of the groin, genitals, buttock, breasts, and armpits. Nail psoriasis can affect fingernails and toenails, causing pitting, abnormal nail growth, and discoloration. Erythrodermic psoriasis, which is a rare but very dangerous type of psoriasis, which is manifested by diffuse redness from head to toe. As well as other types of psoriasis as pustular psoriasis, and psoriatic arthritis ***(Armstrong et al., 2021)***.

Nowadays psoriasis is considered a systemic disease; it's associated with several comorbidities such as cardiovascular problems, high blood pressure, metabolic syndrome, diabetes mellitus, arthritis, and psychological disorders as depression, anxiety. The main cause of this association is not fully understood, but the systemic inflammatory state and a similar genetic basis may play a role ***(Parisi et al., 2020 and Poór et al., 2018).***

The severity of symptoms associated with psoriasis can vary from one individual to another, common physical symptoms include red, silver scaly, dry, itchy, burning, and painful skin lesion. thickened pitted or rigid nails, and finally swollen and stiff joints. With the serious cases the skin becomes intensely inflamed with or without pustules ***(Rencz et al., 2018)***. In addition, many affected people suffer from adverse psychological effects, including poor body image, stress, embarrassment, anxiety, and depression ***(Aldredge and Young, 2016).*** Further, Exposed body parts with visible psoriatic lesions may induce fear, disgust, aversion, or even intolerance, resulting in social exclusion, discrimination, and stigmatization. Moreover, misconception about the disease among some people with limited awareness of psoriasis believe that the disease is contagious, which may eventually contribute to the social isolation of persons with psoriasis, and unacceptance of any kind of personal or social relationship. As obvious, psoriasis can be difficult that can affect different aspects of life leading to many forms of disfiguration and disability including the psoriatic people's daily activities, workplace, personal relationships, and leisure time. With the chronicity of psoriasis and the combination of the associated problems, the disability increases with time ***(Jankowiak et al., 2020, Nast et al., 2018 and WHO, 2016).***

Even so, currently, psoriasis treatment is still based on controlling the symptoms, So, it requires lifelong treatment. While methods of treatment are determined based on disease severity, relevant comorbidities, efficacy, possible medication side effects, treatment cost, and, evaluation of individual response. Hence, the assessment of the disease severity is a fundamental importance to better understand psoriasis and an indicator for the careful selection of the treatment to be carried out ***(Teixeira et al., 2022)***. Treatment options are including topical agents, systemic therapies, as well as, phototherapy. A combination of these methods is often used. Besides, people with psoriasis are not as compliant to treatment regimens as required, that is partly due to insufficient information regarding disease management, misperception of possible adverse events and mistaken expectations about the speed and degree of improvement ***(Blauvelt et al., 2020 and WHO, 2016)***.

Hence, health education is an important aspect of psoriatic treatment. Integration of knowledge and self-care practices of psoriatic people enhances their health competence, which may positively affect their involvement with the disease, health, work, coping, and disability ***(Naga, 2018).*** People with psoriasis should be educated on how to cope with this chronic illness, they should have adequate information and proper skills about hygienic practices, and skincare. Also, they should be informed about the factors that aggravate psoriasis ***(Marks and Radusky, 2021).*** In addition, life-tyle modifications are necessary for alleviating psoriasis severity such as weight reduction, dietary modification, exercising, smoking

cessation, and stress management ***(Ko et al., 2019).***

Significance of the study:

Psoriasis is a serious chronic, painful, disfiguring, and disabling autoimmune skin disease with long-term impairment on the life course, for which there is no complete cure ***(Meng et al., 2018)***. In fact, psoriasis presents a large problem in everyday life, it strongly impairs many aspects of individual well-being, including emotional, physical, sexual, and socioeconomic status. Further, difficulties experienced by people affected with psoriasis require demands that exceed the coping measures of the suffered and their family or social network. Moreover, many patients with severe psoriasis, are dissatisfied with the treatment methods, combined with inadequate information regarding the disease which can lead to delayed treatment-seeking and worse disease outcomes through increasing severity level, aggravating disability, and overall quality of life ***(Abdelsamed et al., 2021 and Singh et al., 2017).***

In this context, psoriasis people need sufficient education and support from healthcare providers to manage their condition effectively. The community nurses as the frontline healthcare providers responsible to educate and advise psoriasis people on all aspects of care, avoid psychological distortion and how to live with the society to improve their health condition and reduce stigmatization directed to the skin infections victims ***(Najafi et al., 2018 and Aldredge & Young, 2016).*** The role of the community nurse will be effective through being the liaison between the psoriatic people and other health team professionals in illness prevention and management and health education to raise their knowledge about the disease and different therapy regimens to reach more compliance to disease management and care satisfaction ***(Soliman, 2021)***. Therefore, designing an educational program for psoriatic people seems to be an essential assistance tool for the affected people to recognize the disease and to start behavioral changes that aimed to improve their knowledge and self-care practices, which in turn could result reduce disease severity, and associated disabilities, promote adherence to treatment and improve quality of life.

Moreover, Although, the prevalence of psoriasis in Egypt is around 3% ***(Ali, 2019)***, as well as, it was estimated that people with psoriasis represented approximately 1.3% of all outpatient skin clinic visits among all dermatology patients ***(El-komy et al., 2020).*** There is a dearth of data and limited nursing research in Egypt on the effect of program education on the severity and disability of psoriasis people. So, in the light of the above, the present study was conducted.

Aims of the study:

The study aimed to evaluate the effectiveness of an educational program in improving the psoriasis severity and disability index of people with psoriasis through:

- Assessing knowledge level and self-care practices of people with psoriasis.

- Assessing the psoriasis severity levels and disability index of people with psoriasis.

- Designing and implementing an educational program for people with psoriasis.

- Evaluating the impact of the educational program on knowledge, self-care practices, the psoriasis severity, and disability index of people with psoriasis.

Research Hypothesis:

- **H 1.** The people with psoriasis in the study group who received the educational program will have higher levels of knowledge and self-care practices about the disease after program implementation than those in the control group**.**

- **H2.** Implementation of the educational program will lead to a decrease in the psoriasis severity level among the study group of the people with psoriasis compared to the control group.

- **H3.** Implementation of the educational program will lead to a decrease in the disability index means scores among the study group of the people with psoriasis compared to the control group.

Subject and Methods:

Research Design:

A quasi-experimental quantitative with pretest-posttest nonequivalent control group design was used. This design compares two groups. Two groups are observed and measured once before program intervention, that is implemented to one group, and after program implementation, both groups are observed again ***(Ethan. 2022).***

Setting:

This study was conducted at the outpatient clinics of Cairo Hospital for Dermatology and Venerology (Al Haud Almarsoud). This dermatological hospital was the most intense of others within Egypt and receive psoriatic people from all Egyptian governorates. The psoriatic clinic in the dermatological hospital is held daily from Saturday to Thursday.

Subjects:

A purposive sampling technique was used. The total number of the affected people with psoriasis admitted to the outpatient clinic in the previously mentioned setting was approximately 678 per month within the year 2021. So, the sample size was estimated to be 246 affected people with psoriasis, using Raosoft sample size calculation soft program. The accepted margin of error was 5%, and the response distribution was 50% at a confidence level of 95%. There were 20 cases omitted because of incomplete data, covid-related death, or absenteeism during program sessions. Thus, the final sample size was 226 psoriatic people, and after the pre-program assessment in which the data was collected from all the participants, they were divided into two groups and assigned as either control or study group (N = 113 for each), using the following equation

$$\text{Sample size, } n = N * \frac{\frac{Z^2 * p * (1-p)}{e^2}}{[N - 1 + \frac{Z^2 * p * (1-p)}{e^2}]}$$

They were selected under the following inclusion and exclusion criteria:

- Aged ≥18 years old

- Diagnosed with psoriasis for at least 6 months and under treatment.

- Willingness to participate in the study

- Free from any mental illness.

- Psoriasis people with generalized pustulosis & erythrodermic psoriasis were excluded from the study.

Technical Design:

Data Collection Tools:

First tool: An interview questionnaire was developed by the researchers, based on reviewing related literature, written in Arabic language conducted on both sample groups (control group & study group). It included the following three parts:

- **Part I**: This part is subdivided into two categories to assess the following:

A- The socio-demographic data of people with psoriasis as age, gender, educational level, occupation, residence, income, and marital status.

B- The medical history of people with psoriasis includes out-patient medical record, consisted of 7 items; type of psoriasis, disease duration, family history, hospitalization, smoking habits, affected sites with psoriasis, and associated comorbidities.

- **Part II:** concerned with Psoriasis Knowledge Questionnaire (PKQ) that was adopted from **Wahl et al., (2013) and Nagarajan and Thappa (2018)** It was used to assess the psoriasis people's knowledge level

about the disease. It consisted of 25 statements covering 4 categories; basic facts of psoriasis (9 items), causes and triggering factors (5 items), disease process, comorbidities and complications (7 items), and treatment aspects (4 items).

Scoring system:

The response to each statement was scored (1) for "correct answer" or (0) for "incorrect answer or didn't know". A total score was calculated by the sum of the correct answers' ranges from 0 to 25. Levels of knowledge were categorized into three levels, poor knowledge (0-12 scores), average knowledge (13-18 scores), and good knowledge (≥ 19 scores).

- Part III: concerned to assess self-care practices of people with psoriasis. It was developed by the researchers depending on the related review of the literature. It consisted of 35 statements covering the following, two major categories; a. skincare and hygienic practices (11 items). b. Prevention of psoriasis's exacerbation/flares subdivided into five domains; b.1- management of psoriasis triggers include 7 items, measures to prevent skin injuries, wisely exposure to sunlight, avoidance of smoking, and skin irritating medication. Life-style modification; b. 2- Nutritional modifications (8 items). b. 3- Physical exercises (3 items). b.4- Stress management (3 items). b. 5- Social relationships (3 items). In addition, one statement related to compliance with follow-up visits.

Scoring system:

The response to each statement was scored (1) for "done," or (0) for "not done". A total score was calculated by the sum of done practices. Levels of self-care practices were categorized into inadequate self-care practices < 60.0% (0-20) and adequate self-care practices ≥ 60.0% (21-35).

Second tool: Psoriasis Area and Severity Index (PASI) adopted from Oakley A., 2009. It was used to measure the level of the disease severity and extent of psoriasis according to body surface area coverage and plaque appearance. It contains two sections, the first one is concerned with the assessment of the intensity of redness, thickness, and scaling of the affected area of the four body regions: a. head/neck, b. upper extremities, c. trunk, d. lower extremities. The second section is concerned with the assessment of the percentage of area affected by psoriasis in the four body regions

Scoring system:

The intensity of plaque appearance (redness, thickness, and scaling of the affected area for each body region assessed using four rating scales as the following; none (0), mild (1), moderate (2), severe (3), or very severe (4). While the assessment of the percentage area affected by psoriasis in the four body regions was expressed as nil (score 0), 1-9% (score 1), 10-29% (score 2), 30-49% (score 3), 50-69% (score 4), 70-89% (score 5) or 90-100% (score 6). The final score of psoriasis area and severity was mathematically calculated and divided based on the following; mild (<5), moderate (5–10) and, sever (>10).

Third tool: Psoriasis Disability Index (PDI) scale which was developed by **Finlay and Coles (1995)**, the Arabic version adopted by **Zedan et al., 2016,** was used in the current study. The questionnaire consisted of 15 items measuring the functional disability caused by psoriasis in the last four weeks of the affected people, including the following five areas; daily activities (5 questions), work/school, or alternative questions if neither working nor going to school (3 questions), personal relationships (2 questions) and leisure time (4 questions) and treatment effect (1 question).

Scoring system:

The scoring of every question is rated on a four-point Likert scale, with responses of, "not at all" ,'a little', 'a lot', and 'very much ranging from 0 to 3 then the total mean score of responses was summed ranging from 0–45, with a higher score indicating greater limitations caused by psoriasis.

Content validity:

Data collection tools were reviewed by a panel of 5 experts; nursing experts from the community health nursing field, and medical-surgical nursing, in addition, to medical experts in the field of dermatology, to test the content validity, and according to their opinion, modifications were applied. The expert panel also reviewed and validated the contents of the educational program critically.

Reliability:

The test reliability of the data collection tools of the present study was established using the Cronbach's Alpha coefficient as the followings:

- Psoriasis Knowledge Questionnaire (PKQ): 0.84.

- Self-care practices tool: 0.82.

- Arabic version of Psoriasis Disability Index (PDI): 0.86.

- Psoriasis Area and Severity Index (PASI): 0.79

Pilot Study:

A pilot study was conducted before the beginning of data collection. It was carried out on 10% of the total sample that was excluded later from the study sample to investigate the tools' feasibility, validity, clarity, applicability, and simplicity then carrying out any needed modifications.

Ethical Considerations:

Official permission was obtained from the director of the dermatology hospital and directors of the psoriatic clinic to carry out the study**.** In addition, oral and written consent was obtained from each participant who agreed to participate before inclusion in the study. The ethical aspects were considered during data collecting. The psoriatic people were informed about the purpose and process of the study. They were informed about their right to refuse participation in the study or withdraw at any phase of the study. Also, confidentiality was assured for all information provided.

Statistical Design:

Data entry and statistical analysis were done using SPSS 16.0 statistical software package. Data were presented using descriptive statistics in the form of frequencies and percentages for qualitative variables and mean and standard deviation for the quantitative variables. The Chi-square test (X2) was used to compare the qualitative categorical variables. Test test and ANOVA test were used to assess the inter-relationships among ranked quantitative variables. Spearman rank correlation coefficient analysis were used to assess the inter-relationships among the variables. *P* value <0.05 were considered significant.

Operational Design:

Field Work:

The actual process of data collection was carried out within a duration of 8 months from July 2021 to February 2022, two days per week for maximum of 6 hours/day from 9:00 am to 2:00 pm. The objective of the study was explained by the researchers to the participants before the data collection; The data collection tools of the study were filled in and completed by the researchers in two phases; the first one was a pre- test phase that was conducted for all participants over two months, then the study sample was divided into two groups (control group & study group). The second phase was a post/follow-up test two months after finishing the implementation of the implementation of the educational program and lasted within two months.

Preparatory Phase:

A review of the literature regarding current and past available the literatures was done to cover the disease aspects, using textbooks, scientific articles and internet sites. This was necessary for the researcher to be

acquainted with the actual dimensions, and magnitude of psoriasis in Egypt and worldwide. It also guided in development of the data collection tools and the contents of the educational program.

Program construction:

The educational program was conducted through three phases; assessment, implementation, and evaluation.

Assessment phase:

This phase began with the pre-program assessment (pre-test) in which the data was collected from both groups (study & control) using the tools of the study. The tools took about 25-35 minutes for each participant to fulfill. Based on the identified needs from the results of the pre-program test, the educational program was designed by the researchers, and the educational booklet was designed in a simple Arabic language to meet the needs and their level of understanding of studied psoriasis people. The general and specific objectives of the program were established.

Implementation phase:

After pretest assessment was done for both groups using the previously mentioned study tools. The program was implemented for the study group only over four sessions through two months with 30- 50 minutes for every session. Every program session was conducted in groups of ten to twenty participants with complete consideration of all preventive measures related to COVID 19. The program sessions were implemented in the hospital conference room and covered theoretical and practical parts, including the following sessions:

1.The first session included basic facts about psoriasis, the meaning of the disease, and types, signs, and symptoms. Additionally; skin-care, and hygienic practices.

2.The second session was concerned with the causes and trigger factors of psoriasis. As well as; the practical preventive measures of psoriasis's exacerbation/flares, and lifestyle modification focused on nutritional modifications.

3.The third session covered the different diagnostic aspects of psoriasis and the degree of disease severity. In addition, methods of psoriasis treatment and the importance of adherence to the treatment plan and follow-up visits.

4.The fourth session was about the effect of psoriasis on activities of daily living, the associated comorbidities, and the complications of psoriasis. Additionally; teaching how to cope with the associated problems, stress management techniques, the importance of social relationships, and the importance of physical exercise.

The program was conducted using a variety of teaching methods such as; lectures, group discussion, brainstorming, and models. Also, the researcher used different audiovisual aids such as; screen show, laptop CDs, pictures, posters, videos, and handout. At the end of the program sessions, the educational booklet was distributed to every participant as well as, the participant was given a telephone or whatsApp message twice / a week for 8 weeks to ensure the commitment to the guided instruction of the educational program.

Evaluation phase:

Evaluation of the effectiveness of the education program was done through follow-up test two months after finishing program sessions using the same pretest tools to evaluate the effectiveness of the educational program on improving psoriasis severity and disability index by comparing the studied affected people with psoriasis of both groups concerning the results of knowledge and self-care practices and their effect on psoriasis severity and disability index within pretest and follow up test, using appropriate statistical analysis.

Results of the study:

Table 1: showed that the mean age of psoriatic people in both groups was 40.9±4.8, and 40.3±5.5 respectively for the control and study groups. Male gender represented 61.0% of the control group & 55.7% of the study group. 76.1% and 71.7% of both study and control groups respectively were married. 50.4% & 55.7% respectively of both study and control groups were working with a low monthly income by 56.6% & 51.3% respectively. No

statistically significant differences were found among both groups.

Table 2: revealed that plaque psoriasis was represented in 84.9 % and 86.7% of the study and control groups respectively. Mean psoriasis duration was 9.22± 5.3 years, and 8.42± 5.9 years respectively for the control and study groups. The most affected body sites were the lower extremities 72.6% followed by the scalp area in the study group (61.1%). While, the upper extremities were the most affected body sites in the control group (68.2%), followed by the scalp (63.7%). Family history was represented by 26.5% and 30.1% of both study and control groups respectively. No statistically significant differences were found among both groups.

Table (3): revealed that the good and average levels of psoriasis knowledge among the study group regarding triggering factors; were 61.0% and 31.0% respectively at the follow-up test compared with 12.4 % and 43.4% respectively in the control group. Also, 46.9% and 32.7% respectively good and average knowledge levels regarding treatment aspects of the study group at follow-up test compared with 15.0% and 36.3 % respectively among the control group. There were highly statistical significance differences between both groups in all psoriasis knowledge areas.

Figure (1): displayed that the total knowledge score for the good and average levels among the study group reached 47.8% and 32.7% respectively through the the follow-up phase, compared with 13.3% and 34.5% respectively for the control group, with a highly statistically significant (X^2; 38.997- $p < 0.000$**).

Table (4): clarified that the improvement and adequacy of self-care practices among the study group through the follow-up phase, in the areas of skincare, management of psoriasis triggers, and nutritional modification by 85.0%, 84.1% and 82.3% respectively compared to 38.9%, 37.2% and 32.7 respectively in the control group, with a highly statistically significant differences between the two groups through the follow-up phase ($p < 0.000$**).

Figure (2) denoted that 28.3% and 30.8% respectively of the people with psoriasis had adequate practices through pretest in the study and control groups, while it raised to 78.8% in study group within follow-up test, compared with 34.5% in the control group, with a highly statistically significant differences between the two groups through the follow-up phase (**X^2;** 47.683, **p** < 0.000**).

Figure (3): indicated a significant improvement in the total psoriasis severity level among the study group, in which severe and moderate grads decreased from 19.5 % and 58.4% respectively during pretest to 15.9% and 34.5% respectively through the follow-up test compared with severity and moderate grads of the control group through follow-up test (19.5% and 49.6% respectively), with a statistically significant difference (**X^2;** 8.288 , **p**=.0.015*).

Table 5: clarified the decrement of the mean scores of psoriasis disability domains in the study group including daily activities, work or school/alternative, personal relationships, leisure, and treatment with the comparison of those mean scores in the control group through the follow-up phase with a highly statistically significant relationship $p < 0.05$.

Table (6): elaborated a significant improvement and reduction of the mean score of the total disability index of the study group from 15.45±8.85 during the pretest to 8.75±6.21 through the follow-up phase compared to that of the control group 14.37± 8.23 through follow- up phase, with a highly statistically significant relationship p < .000**.

Table (7): indicated that there was a highly statistically significant association between levels of severity of psoriasis people and their total disability index in both groups throughout all phases of educational program tests (p<.000**).

Table (8): presented a negative correlation between total self-care practices with psoriasis area and severity index (PASI) through pretest and follow-up phases in both study group (p< .004** and p<.043* respectively) and control group (p<.004** and p.<018* respectively). Also, total psoriasis knowledge score level correlated negatively with PASI through the pretest and follow-up test in the study group (p< .031* and p<.019*) and in the control group through follow-up test only (p<.040*).

Table (9): presented a negative correlation between total psoriasis disability index (PDI) with self-care practices through pretest and follow-up phases in both the study group (p< .001** and p< .006** respectively) and the control group (p< .013* and p<.001** respectively). Also, total psoriasis knowledge score level correlated negatively with PDI through pretest and follow-up test in the study group (p <.001** and p< .024*) and in the control group through follow-up test (p< .045*).

Table (10): reflected a positive correlation between total psoriasis knowledge score level and total self-care practices in the study group (p < 0.030*), and the control group (p < 0.019*) through the pretest phase of the program intervention.

Table (11): showed a significant positive correlation between monthly income and selfcare practices among the study group through pretest (p< .02*), education level was associated positively with knowledge among the study group (p< .040*) and also associated positively with self-care practices among the control group (p< .043).

Table (1): Socio -Demographic Characteristics of both control and study groups of Psoriasis People (n=226)

Variables	Control group N(113)	%	Study group N(113)	%	Chi square X2	P
Age (years):						
- >18–30	20	17.8	26	23.0		
- 31–45	47	41.6	40	35.4	1.356	.507
- >45	46	40.7	47	41.6		
Mean + SD	40.993±4.885		40.398±5.567			
Rang	19- 79		20-75			
Gender:						
- Male	69	61.0	63	55.7	0.655	.418
- Female	44	38.9	50	44.3		
Educational level:						
- Illiterate	34	30.1	31	27.4		
- Read and write	30	26.5	37	32.7	2.960	.564
- Primary school	8	7.1	6	5.3		
- Secondary school	31	27.4	34	30.1		
- University.	10	8.8	5	4.4		
Occupation:						
- Working	63	55.7	57	50.4	0.709	.701
- Housewife	30	26.5	35	31.0		
- Not working/retired/ school student.	20	17.7	21	18.6		
Monthly income:						
- High	6	5.3	9	7.9		
- Average	49	43.4	40	35.4	1.805	.405
- Low	58	51.3	64	56.6		
Residence:						
- Urban	7	6.2	10	8.8		
- Suburban	59	52.2	68	60.2	2.923	.2318
- Rural	47	41.6	35	31.0		
Marital status:						
- Single	17	15.0	17	6.2		
- Married	81	71.7	86	76.1	1.399	.7056
- Widowed	9	8.5	7	6.2		
- Divorced	6	5.3	3	2.7		

Table (2): Medical History Characteristics of both control and study groups of Psoriasis People (n=226)

Variables	Control group N (113)	%	Study group N (113)	%	Chi square X2	P
Type of Psoriasis:						
-Plaque psoriasis.	98	86.7	96	84.9		
-Guttate psoriasis.	9	7.9	8	7.1		
-Inverse psoriasis.	4	3.5	8	7.1	1.746	.626
-Nail, & palmoplantar pustulosis	2	1.7	1	0.9		
Psoriasis Duration:						
- > 6 months – 5 years.	19	16.8	20	17.7		
- 6 year – 10 years.	35	31.0	24	21.2	3.654	.301
- > 10 – 15 years.	30	26.5	36	31.8		
- > 15 years	25	22.12	33	29.20		
Mean ± SD	9.42± 5.3 years		8.42± 5.9 years			
Hospitalized because of Psoriasis:						
-No	78	69.0	85	74.2		
-Yes	35	31.0	28	24.8	1.078	.299
Family History:						
- No	79	69.9	83	73.5	0.348	.554
- Yes	34	30.1	30	26.5		
Smoking:						
- No	84	74.4	81	71.7	0.116	.732
- Yes	29	25.6	32	28.3		
Affected Sites:						
- Scalp	72	**63.7**	69	**61.1**		
- Face and neck	24	21.2	18	15.9		
- Upper extremities	77	**68.2**	64	56.6		
- Lower extremities	61	54.0	82	**72.6**	13.354	.063
- Trunk (Anterior and posterior)	65	57.5	57	50.4		
- Genitalia	19	16.8	11	9.7		
- Palms	14	12.4	24	21.2		
- Nail	3	2.6	0	0.0		
Answers not mutually exclusive						
Health Problems:						
- None	44	38.9	39	34.5		
- Diabetes Mellitus.	31	27.4	33	29.2	9.885	. 129
- Hypertension.	25	22.1	37	32.7		
- Cardiac disease.	16	14.1	9	7.9		
- Renal disease.	3	2.6	0	0.0		
- Psoriasis Arthritis.	29	25.6	31	27.4		
- Asthma.	11	9.7	5	4.4		
Answers not mutually exclusive						

Upper extremities (anterior and posterior upper/lower legs & soles)
Lower extremities (anterior and posterior upper/lower arms &palms)

Table (3): Comparative Distribution of the Psoriasis People in Both Groups Regarding their Knowledge Levels Pre and Follow-up Test (n=226):

Knowledge Items	Pre-test						Follow-up test					
	Control Group		Study Group		X2	P	Control Group		Study Group		X2	P
	N	%	N	%			N	%	N	%		
Basic facts of psoriasis:												
- Good	12	10.6	15	13.3			13	11.5	49	43.4		
- Average	29	25.7	28	24.8	0.379	.827	29	25.7	36	31.8	40.333	.000**
- Poor	72	63.7	70	61.9			71	62.8	28	24.8		
Causes &Triggering factors:												
- Good	16	14.2	9	8.0			14	12.4	69	61.0		.000**
- Average	44	38.9	50	44.2	3.054	.217	49	43.4	35	31.0	67.270	
- Poor	53	46.9	54	47.8			50	44.3	9	8.0		
Disease Process and comorbidities:												
- Good	13	11.5	11	9.7			12	10.6	52	46.0	44.200	.000**
- Average	29	25.7	34	30.1	0.628	.730	31	27.4	34	30.1		
- Poor	71	62.8	68	60.2			70	61.9	27	23.9		
Treatment Aspects:												
- Good	14	12.4	15	13.3			17	15.0	53	46.9		
- Average	37	32.7	33	29.2	0.333	.846	41	36.3	37	32.7	31.847	.000**
- Poor	62	54.8	65	57.5			55	48.7	23	20.4		

(*) Correlation is significant at p<0.05 *(**) Correlation is highly significant at p<0.01.*

Figure (1): Comparative Distribution of the Psoriasis People in Both Groups Regarding their Total Knowledge Score Levels Pre and Follow-up Test (n=226):

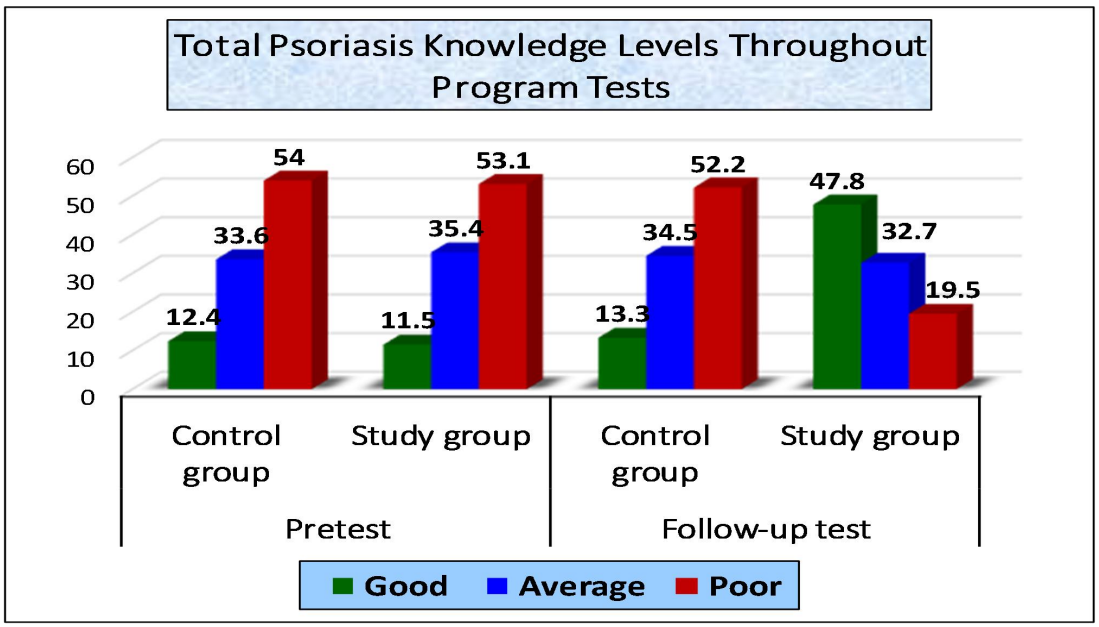

Table (4): Comparison between the Study and Control Groups of the Psoriasis People According to their Self-Care Practices Pre and Follow-up Program Tests:

Self-care practices items	Pre-test						Follow-up test					
	Control Group		Study Group		X2	P	Control Group		Study Group		X2	P
	N	%	N	%			N	%	N	%		
A- Skincare and hygienic practices (care of skin lesions)	41	36.3	37	32.7	.313	.575	44	38.9	96	85.0	50.75	.000**
- Adequate	72	63.7	76	67.3			69	61.1	17	15.0		
- Inadequate												
B- Prevention psoriasis's exacerbation/flares:												
1. Managing psoriasis triggers:	37	32.7	40	35.4	.177	.673	42	37.2	95	84.1		.000**
- Adequate	76	67.3	73	64.6			71	62.8	18	15.9	52.06	
- Inadequate												
Lifestyle modification												
2. Nutritional modifications:	24	21.2	28	24.8	.399	.527	37	32.7	93	82.3	56.78	.000**
- Adequate	89	78.8	85	75.2			76	67.3	20	17.7		
- Inadequate												
3. Physical exercises	43	38.1	42	37.2	.018	.890	50	44.2	84	74.3	21.19	.000**
- Adequate	70	61.9	71	62.8			63	55.8	29	25.7		
- Inadequate												
4. Stress management	16	14.2	17	15.0	.035	.850	18	15.9	76	67.3	61.27	.000**
- Adequate	97	85.8	96	84.9			95	84.1	37	32.7		
- Inadequate												
5. Social relationships	41	36.3	43	38.1	.078	.783	44	38.9	81	71.7	24.50	.000**
- Adequate	72	63.7	70	61.9			69	61.1	32	28.3		
- Inadequate												
C- Compliance with Follow- up visits	41	36.3	34	30.1	2.028	.154	44	38.9	72	63.7		.000**
- Adequate	72	63.7	89	69.9			69	61.1	41	36.3	13.88	
- Inadequate												

(*) Correlation is significant at p<0.05 *(**) Correlation is highly significant at p<0.01.*

Figure (2): Comparison between the Study and Control Groups of the People with Psoriasis According to their Total Self-Care Practices Score Levels Pre and Follow-up Program Tests (n=226):

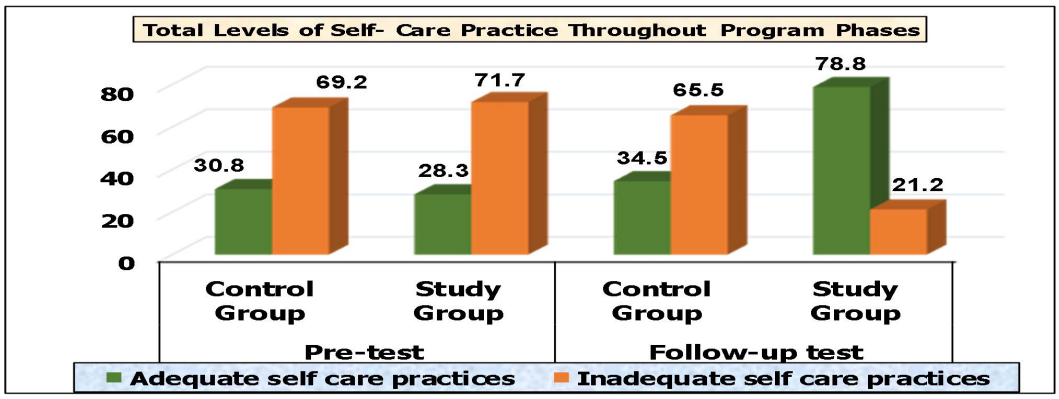

Figure (3): Comparative between the Study and Control Groups of the Psoriasis People According to the Psoriasis Severity Grads Pre and Follow-up Program Tests (n=226):

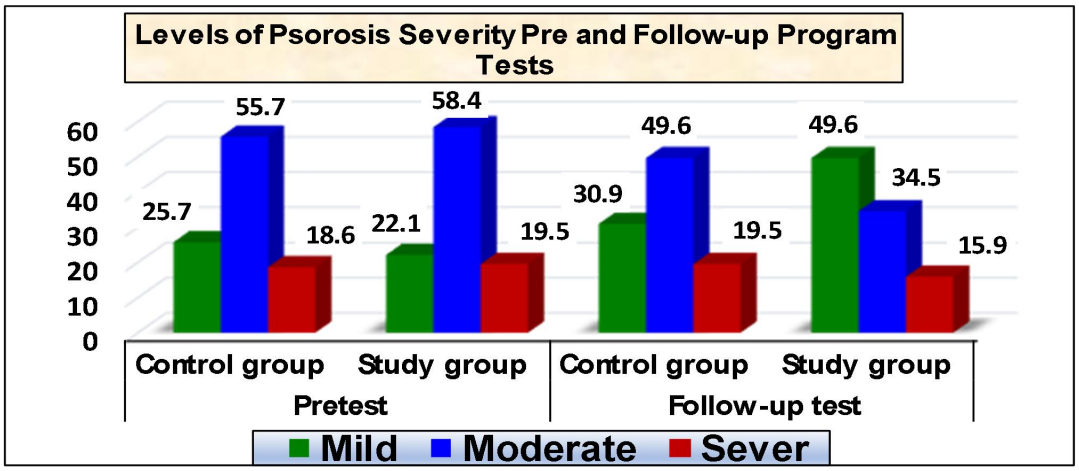

Table (5): Comparison between the Study and Control Groups of the Psoriasis People According to their Mean Scores of Disability Domains Pre and Follow-up Program Tests (n=226):

Domains of Psoriasis Disability Index (PDI)	Max. Score	Pretest						Follow-up test					
		Control group			Study group			Control group			Study group		
		Mean	±	SD	*Mean*	±	SD	*mean*	±	SD	*mean*	±	SD
Daily Activities	**15**	5.50	±	2.75	5.66	±	2.98	5.65	±	2.61	3.02	±	2.15
Paired test T				-0.164						6.393			
P				.4349						< .000**			
Work or School / Alternative	**9**	2.55	±	2.58	2.69	±	1.94	2.32	±	1.96	1.82	±	1.12
Paired test T				-0.465						1.795			
P				.286						.037*			
Personal Relationships	**6**	2.49	±	1.87	2.58	±	1.93	2.13	±	1.62	1.38	±	0.92
Paired test T				-0.591						2.723			
P				.555						.004*			
Leisure	**12**	3.69	±	2.84	3.62	±	2.97	3.64	±	2.63	2.05	±	1.97
Paired test T				0.207						5.116			
P				4063						< .000**			
Treatment	**3**	0.71	±	0.97	0.89	±	1.15	0.63	±	0.69	0.46	±	0.54
Paired test T				-1.477						1.991			
P				.0706						.023*			

(*) Correlation is significant at p<0.05 *(**) Correlation is highly significant at p<0.001*

Table (6): Comparison between the Study and Control Groups of the Psoriasis People According to their Total Disability Mean Score Pre and Follow-up Program Tests (n=226):

Program Tests	Total Disability Index (PDI) among Psoriatic People in Both Groups							
	Control group			Study group			Paired test	
	Mean	±	SD	mean	±	SD	t	P
	Max. score=45			Max. score=45				
Pretest	14.94	±	9.10	15.45	±	8.85	0.5863	.7773
Follow-up test	14.37	±	8.23	8.75	±	6.21	8.698	< .000**

(*) Correlation is significant at p<0.05 *(**) Correlation is highly significant at p<0.01*

Table (7): Correlation between Psoriasis People's Total Severity and Total Disability Index in Both Groups Pre and Follow-up Program Tests:

Program Tests		Total Disability Index					
		Control group	ANOVA test		Study group	ANOVA test	
Psoriasis Severity		Mean ± SD	F	P	Mean ± SD	F	P
Preprogram Test							
-	**Mild**	7.08± 2.76		< .000**	7.55± 2.61		< .000**
-	**Moderate**	12.95± 5.83	70.984		12.82± 6.22	71.264	
-	**Sever**	26.92± 7.60			27.04± 7.17		
-	**Follow-up Program Test**						
-	**Mild**	7.05± 2.83		< .000**	4.67± 2.39		< .000**
-	**Moderate**	11.86± 5.65	98.999		8.35± 3.19	195.359	
-	**Sever**	27.26± 7.96			25.09± 5.58		

(**) Correlation is highly significant at p<0.01

Table (8): Correlation between Psoriatic People's Total Knowledge and Self-Care Practices in Both Groups with Their Psoriasis Severity Pre and Follow-up Program Tests:

	Psoriasis Area and Severity Index (PASI)							
	Pre test				Follow up test			
	Control Group		Study Group		Control Group		Study Group	
	R	P	R	P	r	P	R	P
Total Knowledge	-.198	.078	.-242	**.031***	.-225	**.040***	-.262	**.019***
Total Self-Care Practices	-.299	**.004****	-.227	**.043***	-.264	**.018***	-.264	**.018***

(*) Correlation is significant at p<0.05 *(**) Correlation is highly significant at p<0.01.*

Table (9): Correlation between Total Knowledge and Self-Care Practices in Both Groups of people with psoriasis with Their Psoriasis Disability Pre and Follow-up Program Tests:

	Total Psoriasis Disability Index (PDI)							
	Pretest				Follow up test			
	Control Group		Study Group		Control Group		Study Group	
	R	P	R	P	r	P	R	P
Total Knowledge	-.197	.080	.-.366	**.001***	-.225	**.045***	-.253	**.024***
Total Self-Care Practices	-.276	**.013***	-.374	**.001****	-.363	**.001****	-.306	**.006****

(*) Correlation is significant at p<0.05 *(**) Correlation is highly significant at p<0.01.*

Table (10): Correlation between Psoriatic People's Total Knowledge and Self-Care Practices in Both Groups Pre and Follow-up Program Tests:

	Pretest				Follow-up test			
	Control Group		Study Group		Control Group		Study Group	
	R	P	R	P	r	P	R	P
Total Knowledge								
Total Self-Care Practices	.272	**.019***	.241	**.031***	.214	.056	.128	.199

(*) Correlation is significant at p<0.05 *(**) Correlation is highly significant at p<0.01.*

Table (11): Correlation between Psoriatic People's Total Knowledge & Self-care Practices with their Demographic Data through the Pretest Phase:

Socio-demographic data	Total knowledge				Total self-care practices			
	Control group		Study group		Control group		Study group	
	R	P	R	p	r	p	r	p
Age	-.104	.284	.118	.124	.139-	.155	.058	.071
Educational level	.174	.082	.232	**.040***	.229	**.043***	.157	.097
Income	.085	.368	.068	.089	.0169	.088	.252	**.021***

(*) Correlation is significant at p<0.05

Discussion:

Insufficient information and inadequate self-care practices are common among people affected with psoriasis, leading to unsatisfactory adherence to the treatment plan and poor illness self-management skills, and, consequently, worse patient outcomes and prognosis ***(Bubak et al., 2019).*** This study aimed to conduct an educational program for people affected with psoriasis to improve their knowledge and self-care practice about the disease, then to evaluate its effectiveness in improving the psoriasis severity and disability of people with psoriasis.

Concerning demographic characteristics of the study sample**,** the findings of the current study revealed that more than half of the studied people with psoriasis in both groups were males, and around three-quarters were married. These results were agreed with ***Mohamed et al., (2021)*** who found in their Egyptian study that more than two-thirds of the study sample of psoriatic patients were males. In addition, Karimipour ***et al., (2017)***, found in their intervention study that nearly three-quarters of their studied Iranian psoriatic people were married. The current study didn't show any statistically significant difference between the study and control groups in all sociodemographic variables, this result could be confirmed that both groups were homogeneous preprogram implementation.

Regarding the medical history of people with psoriasis, the results of the current study revealed that the plaque-type of psoriasis was the most prevalent clinical type in both groups. This result was following ***Takahashi et al., (2018)*** who found in their study that the majority of psoriasis patients had plaque psoriasis. Unfortunately, the current study finding revealed that more than one-quarter of the participants in both groups were smokers. However, many studies confirmed the association between smoking and psoriasis severity, such as the study of ***Richer et al., (2016).*** According to the current study finding, lower and upper extremities were the most commonly affected body sites with psoriasis among the participants in both study and control groups respectively by more than two-thirds for each, followed by hair scalp which represented more than half of the study sample in both groups. These results were in congruence with the Egyptian study of ***El-komy et al., (2020),*** who found that the lower and upper limbs then scalp involvement were most commonly evident in more than two-thirds of psoriasis patients. ***Dopytalska et al., (2018),*** found that the prevalence of scalp psoriasis is more than half of the studied psoriasis people.

A family history of psoriasis was detected in more than one-fourth of the participants in both groups. ***Naga (2018)*** found that approximately one-third of the study sample had a positive family history of psoriasis. The majority of the participants suffered from many comorbidities related to psoriasis as diabetes mellitus, hypertension, cardiovascular diseases, and psoriasis arthritis. According to ***Gisondi et al., (2020)***, several comorbidities have a higher prevalence among psoriasis patients compared with the general population. The study finding also revealed that the mean disease duration score was above eight years in both groups. This was nearly similar to the finding of the study by ***El-komy et al., (2020),*** who found the mean disease duration was 8.8 years. From the researchers' point of view, as psoriasis is a chronic long-duration disease, and classically associated with comorbidities, those affected people need continuous follow-up and care, importantly intervention programs that helped to support self-management.

As regards the impact of the education program on knowledge level among people with psoriasis, The results of the present study revealed that the preprogram implementation, more than half of both groups had poor knowledge about psoriasis. This could be related to the lack of health education provided for the affected people with psoriasis as well as, the low educational level among the participants in both groups as shown that more than one-third were illiterate or even had only primary education. Similarly, ***Omar and Ramadan (2021),*** found in their Egyptian study that the majority of the studied psoriasis patients had a poor level of knowledge. Also, ***Sawicka et al.,***

(2021) and ***Mohamed et al., (2021)*** found that more than half of the studied psoriasis people had poor knowledge.

While after program implementation, the follow-up test showed a significant increment in levels of the good and average knowledge among the study group of the people with psoriasis in the total score and all knowledge areas compared with the control group in which poor level of knowledge was still predominant in more than half of the participants with statistical significance difference. These results support the research hypothesis (H1) and approved the positive effect of the educational program on the study group using different teaching strategies such as lectures, group discussion, videos, and booklet. This finding was corresponding with ***Bubak et al., (2019)*** who found a significant higher increment in knowledge level in the intervention group compared to the control group. Also, ***Shehata et al., (2013)*** found a significant improvement in knowledge levels after the implementation of the instruction guideline.

Concerning the effect of the education program on self-care practices among people with psoriasis, the pretest showed a wide range of inadequate levels of self-care practices, represented in more than two-thirds of the participants in both groups. Although reducing triggers of psoriasis is one of the most important parts of self-care practices for psoriasis people to avoid flares, more than two-thirds of the participants had inadequate practices in the management of triggers factors. Also, more than three-fourths had inadequate practice about diet modifications necessary for people with psoriasis. This is despite that there are several studies have confirmed diet and nutrition as a component of both triggering or improving psoriasis. According to ***Wesdock, (2021) and Sissons & Bard, (2021)***, there is an important relationship between diet and psoriasis. Many certain foods are known to cause an inflammatory response throughout the body that can make the symptoms of psoriasis worse, such as refined carbohydrates, red meat, gluten-containing foods, fatty and highly sugared food. On the other hand, there are specific diets that act as anti-inflammatory diets, which will help to improve the symptoms of psoriasis such as oily fish, omega-3 fatty acids, whole grains, fruits, and vegetables. Inadequacy of self-care practices among our study participants was similar to the Egyptian study by ***Mohammed et al., (2021)*** who found that over two-thirds of the studied psoriasis patients had unsatisfactory total self-care practices scores. In addition, ***Naga (2018)*** found in his study that more than two-thirds of the study sample's self-care practices were poor.

While post-program implementation, the majority of the participants affected with psoriasis in the study group had adequate self-care practices in the follow-up test, compared with approximately one-third of the control group with a highly statistically significant relationship. This result reflected the effectiveness of the educational program on the study group that led to positive behavior change in most of their activities and behaviors toward hygienic practices, skincare, avoidance of triggers factors of psoriasis's flares, and lifestyle changes including dietary modification Corresponding with of ***Nabhan et al., (2021)*** who found that the self-care management program had significant improvement on skincare, bathing, and diet among studied psoriasis patients. In addition, ***Karimipour et al., (2017)*** showed a significant increase in the psoriasis patients' self-care behaviors after the intervention of their self-care program.

Concerning the effect of the education program on psoriasis area and severity (PASI), preprogram implementation in the current study revealed that more than half of the study sample was categorized as a moderate grade of disease severity in the two groups with no statistical significance differences. These results are similar to ***Aalemi et al., (2022),*** who found in their Afghanistan study that 62.6% of patients had moderate-to-severe psoriasis. Moreover, ***Khan et al., (2020)*** found in their Pakistani study, that more than one-half of the studied psoriasis sample were categorized as the moderate grade.

Conversely, the strictly important result noticed through the follow-up phase at two months post-program implementation, was a significant reduction in psoriasis severity among the study group, compared with the participants in the control group who didn't show a remarkable improvement with a statistical significance difference between both groups. The implemented education program could act as strong empowerment for people with psoriasis in the study group that helped to improve disease knowledge, correct misconceptions, and enhance self-care practices and disease management. Consequently, all of these factors could lead to a decrease in psoriasis severity in the study group. These results were in the same line with ***Nabhan et al., (2021)*** who found an improvement in disease severity after implementation of a self-care management program among the studied group with statistically significant differences between both groups. Also, ***Castaldo et al., (2020)*** found in their study that healthy dietary habits affected positively the psoriatic patients' severity level. ***Larsen et al., (2014),*** found a significant decrease in illness severity after the implementation of motivational interviewing intervention for patients with psoriasis.

Concerning the effect of the education program on psoriasis disability index (PDI), the current study revealed through pretest results that the studied psoriasis people in both groups were relatively greatly affected and suffered from the impairments of daily life activities, work, school, leisure time, and personal relationships. Several studies confirmed that psoriasis symptoms and problems are associated with impairment of the activity of daily living and disability. For instance, the study of ***Orbai et al., (2021)*** revealed that psoriasis is associated with work and school absenteeism and short-term disability. In addition, the current result finding is nearly similar to the study of ***El-Komy et al., (2020)***, who found the total mean score of PDI was 13.0 ± 10.0. Moreover, ***Leino et al., (2015)*** found in their study that psoriasis has a negative effect on the performance of household chores. ***Mattei et al., (2014)*** stated that palmoplantar psoriasis may cause difficulty in performing daily activities, and soles fissures may cause pain during walking**.**

Notably, follow-up test findings after program intervention, indicated a significant decrease in PDI means score in the study group, compared with no remarkable change in the control group with a statistical significance between both groups. This result proved the research hypothesis (H 4), which could be explained, that implementation of the education program for psoriasis people involved in the study group helped to promote proper practical skills required for the active involvement in the treatment plan, consequently leading to improve the health status that reflected in their daily activities, work, and personal relationships. For example, stress management techniques could be helped to alleviate associated disease stress and improve the psychological status, thus leading to improve personal and social relations. Also, proper skincare of the affected lesion could be helped to mitigate the associated symptoms that in turn improve their ability to daily activities. This finding was in accordance with ***Elzehiri et al., (2022)*** who found in their study a significant drop of the mean scores of PDI post-implementation of individualized guidance in the study group with no change in the control group. Further study by ***Nagarajan and Thappa (2018)*****,** showed a significant decrement in total PDI after three months of educational and psychological intervention.

Concerning statistical correlation among the study variables; one of the expected results found in the current study was there a highly statistically significant positive correlation between the mean score of disability index and psoriasis severity levels in both groups at pretest and two months follow-up test. The possible explanation could be that, with the increase of disease severity, the aggravation of skin lesions increases and symptoms worsen, thus, worsening the health condition among those affected people, which in turn, results a greater inhibition of daily life activities. There is no doubt that pain and discomfort could result in physical disability, and limit daily activities and ability to work. In addition, visible skin lesions make disturbance of body image, low self-esteem, lack of satisfaction that intense

feelings of stigmatization, and perceived stress. All of these psychosocial impacts could negatively affect social and personal relationships and increase the level of disability. This finding was in the same line as ***Aalemi et al., (2022)***, who found a strong correlation between PASI and PDI scores among Afghan psoriasis patients. In addition, ***Elkomy et al., (2020)*** found in their Egyptian study a positive correlation between PASI and PDI, and a higher PASI score was associated with a higher disturbance of activities of daily living.

The further important findings revealed in the current study that the psoriasis knowledge and self-care practice correlated positively with psoriasis severity and disability index in both groups throughout program phases. This result proved that the knowledge and practices are independent factors that determine the severity of psoriasis among the affected people. Higher knowledge, and adequate self-care practice such as health-promoting lifestyle, diet modification, stress management, avoidance of triggers factors, adherence to treatment measures, and follow-up visits, could lead to positive health change, empower disease management and self-control, thus, make symptom under control and prevent complication, and consequently reduced level of disease severity and vice versa. For example, and not limited to psoriasis people who didn't have adequate information about the Koebner phenomenon/ skin triggers, which led to further skin injury, could worsen symptoms, and increase severity. On the other hand, those psoriasis people who had a positive change in eating habits and proper stress management could be able to avoid triggers and prevent psoriasis exacerbation/flares. This result was consistent with ***Omar and Ramadan, (2021)*** who found in their study poor level of self-care practice was significantly associated with psoriasis area and severity index score. Moreover, ***Nagarajan & Thappa, (2018)*** found a highly statistically significant relation between psoriasis total knowledge and severity level.

A positive correlation was also found in the current study between the psoriasis people's total knowledge score level with the total self-care practices in both groups before and after program implementation. Knowledge is a fundamental key to proper self-care, The shortage of the psoriasis clients' knowledge, certainly could lead them to poor self-care practices, and patients with a good understanding of their disease are more self- motivated to engage in health-related behaviors. This result was consistent with ***Mohamed et al., (2021)*****,** who found in their study a positive correlation between the psoriasis patients' total knowledge score and their total practices score.

The current study results approved that, there was a positive correlation between the psoriatic people's total self-care practices and their monthly income in the study group, the financial status of the people with psoriasis is an important factor in their practices to cover their needs from treatment cost, personal hygiene supplies as well as, their needs for nutritional supplements which are expensive to some extent for some of them. Moreover, educational level was found to be a determinable factor that was associated positively with both knowledges among the study group and self-care practice among the control group. These results agreed with ***Naga, (2018)*** who detected a highly statistically significant correlation between psoriasis patients' total knowledge score level and their educational level.

Conclusion:

The educational program had a positive impact total severity and disability index among people with psoriasis through improving their knowledge and self-care practices. There was a highly statistically significant relationship between psoriatic people's total severity and disability with their knowledge score level and self-care practices.

Recommendations:

The study recommended for the conduction of continuous educational programs is needed to correct and improve knowledge & self-care practices among the affected people with psoriasis to decrease their severity level and disability index related to psoriasis. Also, the nurses assigned in psoriasis clinics have to

equipped with a wide base of knowledge about psoriasis and related consequences.

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