Effectiveness of an Educational Program on Self-care practices and Functional Status among Patients with Psoriasis

By:

Wanesa Mohammed Ibrahim Gad Allah*. Marwa Mostafa Ragheb, Manal Hamed Mahmoud***& Rawia Ali Ibrahim ******

*Assistant lecturer of Medical Surgical Nursing, Faculty of Nursing, Benha University.
** Professor of Medical Surgical Nursing, Faculty of Nursing, Benha University.
*** professor of Medical Surgical Nursing, Faculty of Nursing, Benha University.
**** Lecturer of Medical Surgical Nursing, Faculty of Nursing, Benha University.

Abstract

Back ground: Psoriasis is one of the most common dermatologic disorders**.** It is impairs many aspects of individual well-being. Patient education is an integral part of comprehensive chronic disease management. **Aim:** This study to evaluate the effectiveness of an educational program on self-care practices and functional status among patients with psoriasis. **Design:** A quasi experimental design will be conducted to achieve the aim of the study. **Setting:** This study will be conducted in dermatological department at Benha University Hospital and outpatient clinics and Dermatology Hospital at Benha city. **Sample:** Purposive sample of 43 psoriatic patients admitted to the dermatology department at Benha University Hospital and at dermatology hospital during one year. **Tools:** Four tools were used in this study; **tool (1)** Patients' interview questionnaire; consists of three parts, **Part 1**: Psoriatic patients' personal data, **Part 2:** Patients' history, **Part 3:** Patients' personal habits **Tool (II)** Psoriasis Patients' Knowledge Questionnaire; consists of two parts, **Part 1**: knowledge about disease overview**, Part 2**: knowledge about psoriasis treatment**. Tool III:** Self-care practices assessment**. Tool IV:** A Disease-Specific Version of the Euro Quality of life-5 Dimensions-5 Level (EQ-5D-5L**). Results**: None of the studied patients had satisfactory level of knowledge at pre-program implementation compared to post one month and three month of program. 8.6% of studied patients had correct self-care practices pre-program implementation while as post program improved to 86.0% but after three months declined to 74.4%. There is a negative correlation with statistical significance difference between functional status and total knowledge, total self-care practice at $p \leq 0.05$. **Conclusion:** self-care practices and functional status about psoriasis were improved after implementation of educational program. **Recommendations:** Conduct educational program to be launched through mass media for public awareness about psoriasis and how to prevent and manage it.

Keywords: Educational Program, Self-care practices, Functional Status, Psoriasis.

Introduction

Psoriasis is a chronic, immune mediated inflammatory skin disease, a disease with an unclear cause that is characterized by inflammation caused by dysfunction of the immune system that causes inflammation in the body. There may be visible signs of the inflammation such as raised plaques, some people report that psoriasis plaques itch, burn and sting. Plaques and scales may appear on any part of the body, although they are commonly found on the elbows, knees, and scalp **(*Cleveland Clinic., 2020).***

The cause of psoriasis is not known; it is thought to be an immune system problem that causes the skin to regenerate at faster than normal rates. but it often runs in families, and the environment may affect it. Some of the known factors that can trigger psoriasis or make it worse include: injury to the skin, including severe sunburn, infections, stress, certain medicines, alcohol, smoking, air pollution, scratching, obesity and hormonal changes ***(MyDr, 2020).***

Living with psoriasis poses problem for the individual concerned with functioning and daily living activities. It is linked with social stigmatization, pain, discomfort, physical disability and psychological stress. Individuals with psoriasis may experience significant physical discomfort and some disability as itching and pain that can interfere with basic functions, such as self-care and caring for family members or home ***(Leino et al., 2015).***

Itching, pain, skin lesions and cracks in the palms and soles hinder self-care and can lead to sleep disturbances and mood changes. The manifestations of this disease are associated with a sense of notoriety, which can cause behavioral changes in public places and prevent the presence of weakness in the social interactions and business opportunities. Psoriasis as a skin disease affects patients' physical, emotional, economic and quality of life (QOL) ***(Najafi-Ghezeljeh et al.,2018).***

Although psoriasis can be controlled pharmaceutically, great costs are imposed on patients, while other non-pharmaceutical methods, such as training, can be more cost-effective. Therefore, health education for patients is of great importance. Self-management education is the cornerstone of treatment and understanding its severity is very effective in alleviating the patients' pain and suffering. Education promotes

the individual's awareness of the disease, increases his/her motivation to make behavioral changes, and subsequently improves the clinical outcomes. On the other hand, training self-care behaviors for patients can have major effects on promoting the patients' health and functional status. Moreover, it can increase the patients' feeling of control over the disease and result in better skin care procedures ***(Karimipour et al ., 2017).***

The nurse has a pivotal role in monitoring self -efficacy by using standardized scales. She has to share information about psoriasis the disease processes and teaches the interventions to help patients and their families. The patients are empowered with self- care skills. Hence, providing supportive care helps in improving the self-efficacy. She has to actively listens, reflects, and guides patients and their families through the stages of the flare ups – to mourn the loss of abilities and roles while also "instilling hope "to live a quality life ***(Wilke et al., 2018).***

Significance of the study:

Psoriasis is a common, chronic and non-communicable skin disease, with no clear cause or cure. The negative impact of this condition on people's lives can be immense. Psoriasis affects people of all ages, and in all countries. The reported prevalence of psoriasis in countries ranges between 0.09% and 11.43%, making psoriasis a serious global problem with at least 100 million individuals affected worldwide ***(World Health Organization, 2016)***.

In **Egypt**; more than one million suffer from psoriasis of which 145,000 are *moderate* and severe ***(Farag, 2019).*** It is non-infectious chronic disease, and is considered one of the most common skin diseases, where percentage of diseased persons count for 1-2% of total Egyptian population and the reason behind the psoriasis is the increased speed of skin cells mitosis and genetics plays a role in its incidence ***(Al Jamal, 2019).***

According to statistical office in Benha University (2019). The number of patients admitted to dermatological department in 2019 were 125 cases, approximately 25% from them suffering from psoriasis. In addition number of patients admitted to dermatological hospital in 2020 were approximately 76 psoriatic patients.

Aim of the study

The aim of this study is to evaluate the effectiveness of an educational program on self-care practices and functional status among patients with psoriasis.

Research Hypotheses:

H1: The mean score of patients' knowledge and self-care practices about psoriasis will be higher post educational program than pre implementation.

H2: Functional status for psoriatic patients will be improved post program implementation than pre implementation.

Research design:-

A quasi experimental design was utilized to achieve the aim of the study.

Setting:

This study was conducted in dermatology department and outpatient clinics at Benha University Hospital. Also this study was conducted in Dermatology Hospital at Benha city, Al-Galubeiah Governerate , Egypt .

Subjects:

Purposive sample of 43 psoriatic patients admitted to the dermatology department at Benha University Hospital and at dermatology hospital during one year. The sample was included an adult patient with age ranged from 20-60 years old from both sexes who agreed to participate in the study and able to communicate verbally.

Exclusion criteria:

- Patients diagnosed with psoriasis arthritis.
- Patients who had the diagnosis of any psychiatric disorder.
- Patients who attended previous educational program.

Tools for data collection:

Four tools for data collection were used as the following:

Tool I: Patients' interview questionnaire (*Appendix I):* It was prepared by the researcher based on review of related and recent literature ***(Guimaraes et al., 2014), (Nabawy et al., 2020) and (Mahmoud et al., 2021).*** It was written in an Arabic language, it included 31 close ended multiple choices questions and consisted of three parts:

Part 1: Psoriatic patients' personal data; it aimed to assess patients' personal characteristics, it included 10 questions about age, sex, marital status, area of residence, level of education, occupation and monthly income, height, weight and BMI.

Part 2: Patients' history; It was designed by the researcher to assess patients' history which included three sections:

The first section: past medical history of studied patients; it included 5 questions about presence of comorbid diseases as (cardiovascular diseases, obesity and diabetes mellitus), psoriasis type, duration of the disease and severity.

The second section: patients' family history; it included 2 questions about presence of family history about psoriasis and the degree of kinship

The third section: patients' present history; it included 4 questions about symptoms of such itching places, scales place and presence of nail changes.

Part 3: Patients' personal habits: It was designed by the researcher to assess personal habits which included 10 questions about smoking, smoking duration, consumption of cigarettes per day, received all vaccinations in childhood, treatment methods, taking treatment, and follow up, trauma exposure and affected on sexual relation.

Tool II: Psoriasis Patients' Knowledge Questionnaire *(Appendix II):* it was prepared by the researcher after reviewing the related and recent literature ***(Klopsta et al ., 2013),*** (***Lene, 2013) and (Wahl et al., 2015***). It aimed to assess the psoriatic patients' knowledge about the disease and divided into two parts:

The first part: Disease overview: It included 17 multiple choice questions related to function of skin and components of immune system (2 questions), definition, difference between psoriasis and normal dandruff, wrong concepts of psoriasis (3

questions), causes, factors affecting occurrence of psoriasis, age of psoriasis occurrence and high risk groups for developing psoriasis (3 questions), common types, common symptoms and common places for psoriasis (3 questions), diagnostic methods, coping with psoriasis (2 questions), exacerbating factors, methods to prevent the spread and common complications(3 questions).

The second part: Assessment of patients' knowledge about psoriasis treatment: It included 10 multiple choice questions related to methods of treatment (5 questions), questions related diet (2 questions), exercises (2 questions) and (1 question) related to weight loss.

Scoring system:

Knowledge obtained from patients was scored and calculated. Each question scores was ranged from 0 to 2 score, whereas zero indicated wrong answer, one indicated incomplete answer and two indicated complete answer with ranged from 0 to 54 score (equal 100%). Theses scores were summed-up and converted into percent score, then categorized as follow:

Satisfactory knowledge ≥ 70% of the total score (≥ 38 score).

Unsatisfactory knowledge < 70% of the total score (< 38 score).

Tool III: Self-care practices assessment *(Appendix III)*: It was constructed by the researcher after reviewing relevant literature ***(Yaghoubi, 2017), (Saeed , 2018) and (Abdallah, 2019).*** It aimed to assess psoriatic patients' self-care practices. It included the following items:

Firstly, questions related to personal hygiene (bathing): This part was included 3 closed ended questions and 2 multiple choice questions about the instructions which the patient must follow during bathing as daily showering, use shower oil or moisturizers, use an oatmeal bath, temperature of showering water and right method for drying skin.

Secondly: Questions related to skin care:

This part was included 5 closed ended questions regarding care of psoriatic lesions as, using moisturizer regularly, avoid scratching psoriasis scales, trimming nails regularly, exposure to harmless sunlight and wearing cotton cloths.

Third: Questions to prevent complications of psoriasis: this part was included 5 closed ended and 6 multiple choice questions regarding prevention of psoriasis flare as measures taken to overcome psychological stress, methods taken to get rid of skin scales, eating foods rich in omega-3, using perfume or other harsh chemicals, sleeping well or intermittent, measures taken when skin is affected by any disease, measures taken when exposed to cold and dry weather, following a specific diet to lose weight and measures taken to overcome streptococcus infection.

Scoring system: each question score ranged from 0 to 1, where zero indicated wrong answer or doesn't know and one indicated correct answer. With total scores of 21 score (equal 100%) theses scores were summed-up and converted into percent score, then categorized as follow:

- Correct practices ≥ 70% of the total score (≥ 15 score).
- Incorrect practices < 70% of the total score (< 15 score).

Tool IV: A Disease-Specific Version of the Euro Quality of life-5 Dimensions-5 Level (EQ-5D-5L) ***(Appendix IV)***: it was adopted from ***(EuroQol Group Association, 2005)*:** This scale was used to assess physical, mental and social functioning, it consist of five dimensions: mobility, self-care, usual activities, pain/discomfort and anxiety/depression. Each dimension has 5 levels: no problems, slight problems, moderate problems, severe problems and extreme problems.

Scoring system:

-The EQ-5D-5L describes five dimensions. Each dimension describes five levels of severity: no problem (1 score), mild problem (2 scores), moderate problem (3 scores), sever problem (4 scores) and unable/ extreme problem (5 scores).

-Total score of the tool: 1 score in each 5 dimensions indicates complete health status and 5 scores in each 5 dimensions indicates worst health status.

The educational program about psoriasis *(appendix V)*. It was designed by the researcher through a reviewing of recent related literatures, scientific references as ***(Nakamura et al., 2018)*, *(Kircik & Pariser, 2019), (Mayo Foundation for Medical Education, 2019) and (National Institute for Health and Care Excellence, 2019).***

This program was planned to cover knowledge and self-care practices related to psoriasis.

Administrative design

An official permission to carry out the study was obtained by submission an official letter from the dean of Faculty of Nursing at Benha University to the director of Benha University Hospital and Dermatology Hospital. This letter explained and clarified the aim and objectives of the study to obtain permission to conduct the study. The agreement and the aim of the study were explained to each subject.

Ethical consideration

The ethical research considerations include the following:

- The research approval was obtained from the administrator of each study setting
- Verbal approval was obtained from the patients before inclusion in the study.
- The aim of this study was explained to all patients and they were reassured that all information was confidential and it was used only for their benefit and for research purpose.
- The study subjects' consent to participate in the study was obtained and patients' right to withdraw from the study was respected.

Content validity

Content validity was conducted to determine wheatear the tools cover the aim, the tools was reviewed by a panel of five experts; four from medical surgical department faculty of nursing Benha University and one from dermatological department faculty of medicine Benha University to test the relevance and clarity of content and necessary modification will be done accordingly.

Reliability:

Reliability of knowledge questionnaire was determined using Cronbach's alpha coefficient which was 0.96. For the second tool self-care practice, reliability was 0.70. This only proves that this tool is an instrument with good reliability.

Pilot study:

A pilot study was conducted on 10 percent from the total sample (5patients) in order to evaluate the applicability of the study and to estimate time required for data collection. The tools were modified according to results of pilot study. Patients who participated in the pilot study were excluded from the main study sample and replaced by others. This pilot study was done in two weeks before starting the study.

Field work:

Sampling and data collection were started and completed during the period of 12 months from the beginning of August (2020) to the end of July (2021).

Data collection passes through out four phases as the following:

1- Assessment phase.

2- Planning phase.

3- Implementation phase.

4- Evaluation phase.

1- Assessment phase:

-The researcher was obtained patients' personal data and medical data used (tool I) pre-program.

-The interview was carried out in the patient's room and maintained privacy, the questions were in a simple Arabic language, covered aim of the study and the answers were record immediacy in pre-test.

-Patients were interviewed individually to assessed level of knowledge, self-care practice and functional status regarding the disease used (tool II, III& IV) pre-program implementation

2-Planning phase:

Based on the information obtained from pilot study, in addition to the recent related literature, the researcher designed an educational program and putted general and main objective for this program and chapters' contents. Teaching methods and teaching aids were determined. It divided as the following;

Designing educational program:

The general objective of the program:

The purpose of this educational program is to evaluate the effectiveness of it on self-care practices and functional status among patients with psoriasis.

The main objectives of the program:

At the end of this program, a psoriatic patient should:

- Identify the anatomy of immune system and skin
- Understand the concept of psoriasis disease.
- Know the causes and risk factors that cause the disease.
- Determine the signs and symptoms of the disease.
- Recognize types of psoriasis.
- Identify methods of diagnosing the disease.
- Recognize the complications that occur as a result of the disease.
- Know the healthy and limited food that benefits the patients.
- Know methods of treatment and realize the importance of taking it regularly.
- Use non-pharmacological methods to maintain self-care and functional status.

Teaching methods:

Which included the following

 Lectures

 Group discussion

 Brain storming

Media used:

Suitable teaching aids were specially prepared for the intervention as booklets, pictures, Posters and power point presentation and educational videos; it was developed by the researcher based on patient's needs assessments.

3- Implementation phase: ***(Appendix VII):***

The implementation phase was achieved through educational session' schedule. Each session started by a summary of the previous session, and objectives of the new one. Taking into consideration, the use of Arabic language that suits the patients' educational level. Motivation and reinforcement during session were used in order to enhance motivation for the sharing in this study.

Patients were divided into 10 groups each group included 4-5 patients. It was carried out into four sessions. The duration of each session was 30 -45 minutes. The researcher was available 3 days per week in the morning (9-12 A.M) in dermatology department and outpatient at Benha University Hospital and Dermatology Hospital. The researcher continued to reinforce the gained information, answered any raised questions and gave feedback.

The final form of the educational booklet was developed and given to each patient.

Theoretical sessions: were carried out into four sessions. That included the following:

Session (1): At the beginning of this first session, the researcher introduced her-self, gave introduction on educational program and its importance and explained the objectives of the educational program. It covered items related to knowledge about anatomy of immune system and skin in the human body, meaning of psoriasis, causes and risk factors. Time of this session took about of 30 minutes.

Session (2): It covered items related to knowledge about signs and symptoms, types, methods of diagnoses and complications that occur as a result of the disease. Time of this session took about of 30 minutes.

Session (3): It contained items related to knowledge about treatment, and diet for psoriasis, effect of psoriasis on self-care and how to improve it. Time of this session took about of 45 minutes.

Session (4): It comprised items related to knowledge about effect of psoriasis on functional status and general advices to psoriatic patients. Time of this session took about of 30 minutes.

At the end of these sessions, the researcher informed the patients that they will be evaluated by the researcher after one and three months from sessions.

4-The evaluation phase:

- Each patient was interviewed individually after implementing educational program for post-test using the same pre-test tools, it was done after one and three month later following implementing the program (utilizing tool II, III and IV).

- Comparison between patient's pre-test and post-test finding were done to determine the effect of educational program on knowledge level, self-care practices and functional status for patients with psoriasis.

Statistical analysis

The collected data were tabulated and statistically analyzed using an IBM computer and the statistical package for social science (SPSS) advanced statistics, version 20 (SPSS Inc., Chicago, IL). Numerical data were expressed as mean and standard deviation. Qualitative data were expressed as frequency and percentage. for comparing categorical variables, Fisher's exact test was applied on smaller sample sizes, alternative to the chi-square test, when the frequency count is < 5 for more than 20% of cells, Wilcoxon signed ranks test to compare between two periods, Friedman test to compare between more than two periods or stages. For quantitative data, comparison between two groups was done using Mann-Whitney test (non-parametric t-test). Comparison between more than two groups was done using Kruskal-Wallis test (non-parametric ANOVA). Spearman-rho method was used to test correlation between numerical variables. A p-value < 0.05 was considered significant, and <0.001 was considered highly significant.

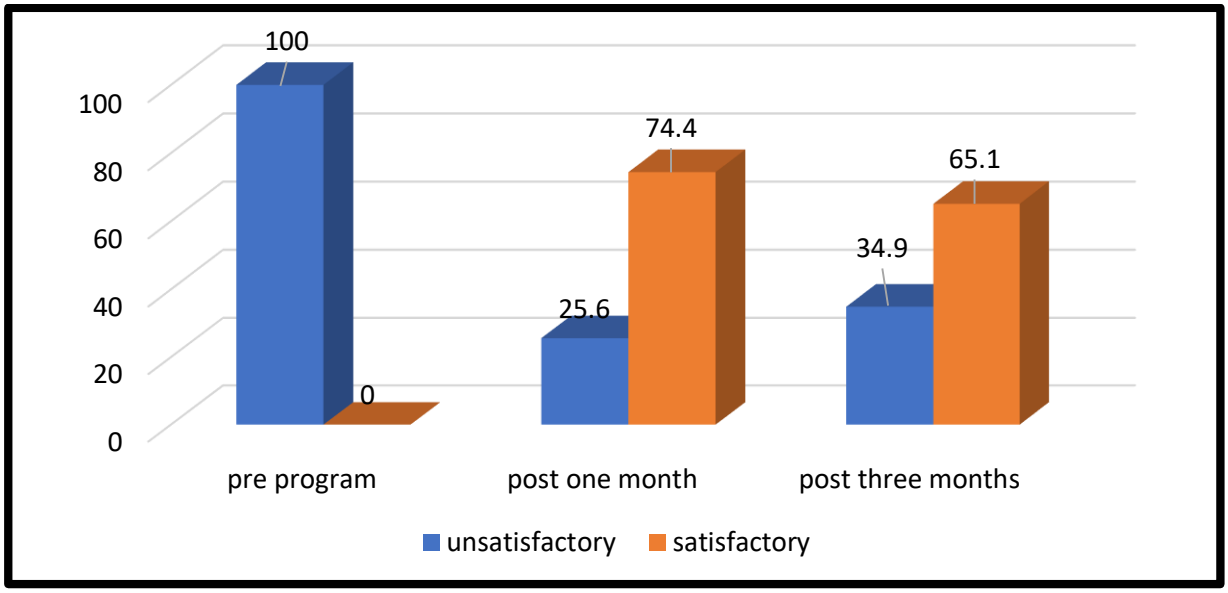
Results:

Table (1): Percentage distribution of the studied patients according to their personal data (n = 43)

Patients' personal data		No.	%
Age	20- < 30	9	20.9
	30 - < 40	13	30.2
	40 - < 50	11	25.6
	50 - 60	10	23.3
	Mean ± SD	37.49 ± 10.99	
Sex	Male	20	46.5
	Female	23	53.5
Marital status	Not married	15	34.9
	Married	28	65.1
Residence	Urban	9	20.9
	Rural	34	79.1
Educational level	Illiterate	15	34.9
	Read and write	4	9.3
	Intermediate education	17	39.5
	University education	7	16.3
Occupation	Not working	10	23.3
	Manual work	9	20.9
	Employee	15	34.9
	Student	9	20.9
Monthly income	Enough for treatment expenses	33	76.7
	Not enough	10	23.3
Height (cm)		**Mean ± SD**	
		161.63 ± 8.07	
Weight (kg)		71.12 ± 11.11	
BMI (kg/cm2)		27.34 ± 4.05	

This table shows that; 30.2% of the studied patients were in the age category 30 - < 40 years old, with mean age 37.49 ± 10.99. Females were more prevalent and constituted 53.5 % of the studied patients and 65.1% & 79.1% of them were married and live in rural areas respectively. Regarding their educational level, 39.5% of the studied patients had intermediate education and 34.9% were employees, while 76.7% of them had a monthly income enough for treatment expenses, the mean score of the studied patients' BMI was 27.34 ± 4.05.

Fig (1): Distribution of total knowledge levels by psoriasis patients through the program phases



This figure shows that; none of the studied patients had satisfactory level of knowledge at pre-program implementation, while post one month of program 74.4% of them had satisfactory knowledge and post three months of program decreased to 65.1%.

Fig (2): Distribution of total levels of self-care practice by psoriasis patients through the program phases

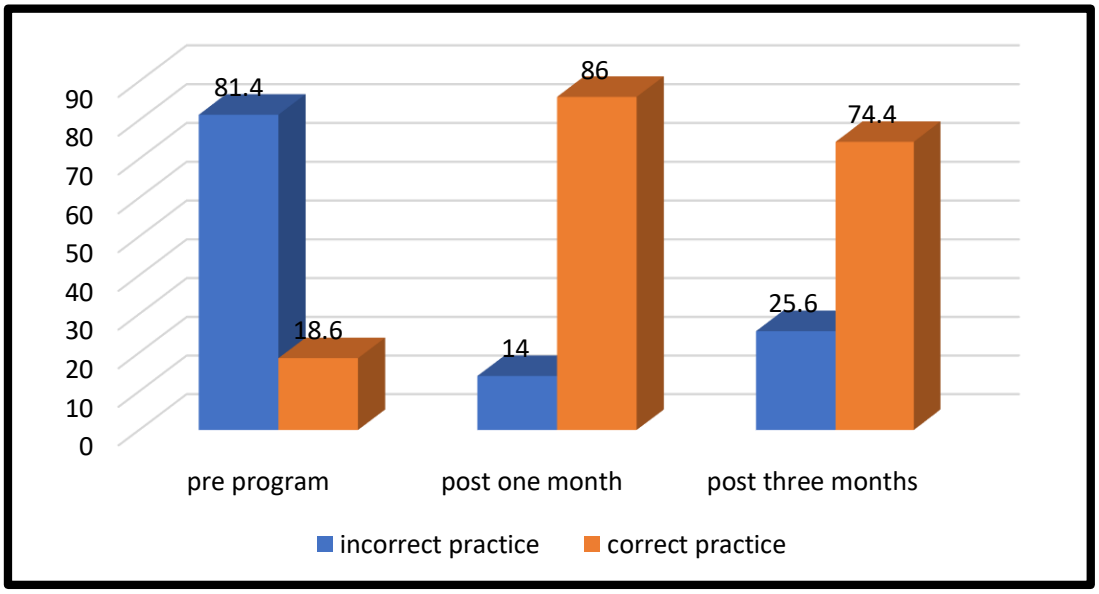


Figure (2) shows that 8.6% of studied patients had correct self-care practices pre-program implementation while as post program improved to 86.0% but after three months declined to 74.4%.

Table (2) Comparison between the mean functional status scores and standard deviation of studied patients through program phases (n = 43)

EQ-5D Dimensions	Pre program	Post program		t-Test (P1 Value)	t-Test (P2 Value)	Fr- Test P3 Value
		After one month	After three months			
Mobility	2.05 ± 0.69	1.30 ± 0.46	1.21 ± 0.41	-4.137 <0.001**	-4.436 <0.001**	32.057 <0.001**
Self-care	2.67 ± 0.47	1.81 ± 0.45	1.56 ± 0.50	-5.665 <0.001**	-5.200 <0.001**	64.085 <0.001**
Usual activities	2.53 ± 0.50	1.84 ± 0.57	1.51 ±0.51	-6.345 <0.001**	-5.303 <0.001**	66.157 <0.001**
Pain/ discomfort	3.00 ± 0.85	1.88 ± 0.45	1.79 ± 0.51	-5.589 <0.001**	-5.355 <0.001**	70.035 <0.001**
Anxiety/ depression	3.65 ± 0.87	2.33 ± 0.75	2.30 ± 0.71	-5.975 <0.001**	-5.894 <0.001**	80.809 <0.001**
Total	13.91 ± 1.84	9.05 ± 1.34	8.49 ± 1.49	-5.782 <0.001**	-5.752 <0.001**	72.239 <0.001**

t: Wilcoxon signed rank test **Fr**: **Friedman test**, Sig. bet. Periods

P_1: p value for comparing between **Pre program** and one month post program
P2: p value for comparing between **Pre program** and three months post program
P3: p value for overall differences throughout study periods

**: Highly statistically significant at $p \leq 0.001$

Table (2) shows that there was a highly significant statistical difference regarding all functional status dimensions scores throughout different study periods in term of improvement where there was a highly significant difference between pre and each of post one month and three months of educational program implementation p= < 0.001 , with the most common health problem reported after three months of program, was anxiety and depression with a mean of 2.30 ± 0.71, whereas the least common health problem was mobility with a mean of 1.21 ± 0.41.

Table (3): Correlation between total studied patients' knowledge, self-care practice and functional status through program phases (n=43)

rs\ p values	Study periods	Knowledge		Selfcare Practice	
		r-test	P-value	r-test	P-value
Functional status	**Pre**	-0.359	0.018*	-0.377	0.013*
Knowledge		-	-	0.584	<0.001**
Functional status	**Post one month**	-0.464	0.002*	-0.354	0.020*
Knowledge		-	-	0.371	0.014*
Functional status	**Post three months**	-0.435	0.004*	-0.375	0.013*
Knowledge		-	-	0.323	0.035*

rs: Spearman coefficient *: Statistically significant at $p \leq 0.05$ **: Highly statistically significant at $p \leq 0.001$

This table represents that, there is a negative correlation with statistical significance difference between functional status and total knowledge, total self-care practice at $p \leq 0.05$, while there is appositive correlation with statistical significance difference between total knowledge and total self-care practice at $p \leq 0.05$.

Discussion:

Psoriasis is a chronic, stigmatizing systemic inflammatory condition, primarily localized to the skin and joints. It is one of the most common dermatologic disorders, affecting approximately 2% of the population worldwide. Patients suffer from life-long disease, characterized by a relapsing and remitting course of illness. Living with a chronic disease such as psoriasis poses problem for the individual concerned with functioning and daily living activities. It is linked with social stigmatization, pain, discomfort, physical disability and psychological stress, also with physical symptoms. The physical appearance of psoriasis lesions has a negative impact on patients' self-esteem and compromising their quality of life **(Bulat et al.,2019)**.

Pertaining to personal data of studied patients, the present study results revealed that, less than one third of the studied patients were in the age category 30 - < 40 years old, with mean age 37.49 ± 10.99. This result supported by ***Sawicka et al.,(2021)*** in their study about evaluation of knowledge in the field of proper skin care and exacerbating factors in patients with psoriasis, who conducted that, two fifth of

subjects included individuals aged 31–51 years, while less than one fifth of subjects included individuals aged 51–70 years.

The current study results indicated that, females were more prevalent and constituted about half of the studied patients. This finding supported by ***Karimipour et al., (2017)*** in their study on the effects of a self-care program on promoting self-care behaviors in patients with psoriasis, who reported that more than half of subjects were females.

Concerning patients' marital status in our study; about two thirds of studied patients were married, this finding supported by ***Karimipour et al.,(2017),*** who mentioned that about three quarters of patients were married. Also this result agree with ***Daglioglu et al, (2020)*** in their study about effects of disease severity on quality of life in patients with psoriasis and found that; about two thirds of the patients were married.

The results of the current study revealed that; more than three quarters of studied patients reside in rural areas, this result supported by ***Nabawy et al.,(2021)*** in their study about knowledge and self-care practices among psoriatic patients in Benha City, who was seen that about two third (63.3%) of patients lived in rural areas. Also the previous result was disagree by ***Sawicka et al.,(2021***), who conducted a study about evaluation of knowledge in the field of proper skin care and exacerbating factors in patients with psoriasis, who mentioned that about one fourth of patients living in rural regions.

Regarding educational level; the results of the current study showed that about two fifths of the studied patients had intermediate education. The finding was agree with ***Nabawy et al.,(2021***) who found that nearly one third of the studied patients had intermediate education. This result was disagree with ***Mohamed et al.,(2013)*** who conducted a study about effect of self-care instructional guidelines on quality of life of patients with psoriasis, who reported that nearly one third of the studied subjects were highly educated.

Regarding occupation; the results of the current study revealed that, about one third of studied patients were employees. This result was agree with ***Bulat et al., (2020)*** in their study about study on the impact of psoriasis on quality of life

psychological, social and financial implications, who mentioned that nearly half of studied patients were employees. Also this result was supported by ***Zhong et al.,(2021),*** in their study about impact of moderate-to-severe psoriasis on quality of life in china: a qualitative study, who found that about one fourth of patients were employee.

The current results revealed that, nearly three quarters of studied patient had a monthly income enough for treatment expenses. This result was supported by ***Nabawy et al., (2021),*** who mentioned that about three quarters of studied patients had a family monthly income enough. Related to Body-Mass-Index, the current results showed that; there was, the mean score of the studied patients' BMI was 27.34 ± 4.05, this finding was agree with ***Bubak et al., (2018)*** in their study about analyzing the value of an educational program for psoriasis patients: a prospective controlled pilot study, who found that, the mean Body-Mass-Index (BMI) 29.1 kg/m2.

Pertaining to distribution of total knowledge levels; the results of the study showed that; none of the studied patients had satisfactory level of knowledge at pre-program implementation, while post one month of program about three quarters of patients had satisfactory knowledge and post three months of program. This result competence with ***Mohamed et al., (2013)*** who stated that, majority of patient's level of knowledge score was unsatisfactory before self-care instruction implementation. This finding is in the same line with ***Nabawy et al., (2021***) who found that more than half of psoriatic patients had poor total knowledge score about psoriasis and more than one fifth of them had good total knowledge score about psoriasis.

Regarding distribution of total levels of self-care practice; the current results of the study showed that 18.6% of studied patients had correct self-care practices pre-program implementation while as post program improved but after three months slight declined. This findings supported by ***Soliman, (2020)*** in his study about acceptance of illness and need for education to support dermatology self-care in psoriasis patients: a cross-sectional study, who stated that arabic psoriatic patients showed moderate acceptance of illness and required some education to support dermatology self-care. Greater clinical attention with focus on patient education. This finding accordance also with ***Nabawy et al., (2021)*** who mentioned that about three

quarters of studied patients had total unsatisfactory self-care practices score toward psoriasis.

Regarding comparison between the mean functional status scores and standard deviation of studied patients; the results of our study shows that there was a highly significant statistical difference regarding all functional status dimensions scores throughout different study periods in term of improvement, with the most common health problem reported after three months of program, was anxiety and depression, whereas the least common health problem was mobility. This result supported by ***Mahmoud, (2017)*** in their study about effect of self- care management program on quality of life and disease severity among patients with psoriasis and exposed that no statistically significance difference between the study and control groups before implementation of self- care management program in quality of life, while statistical significant difference were found between both groups after implementation of self-care management program at three times of assessment at 4th weeks, 8th weeks and 12th weeks.

Regarding correlation between total studied patients' knowledge, self-care practice and functional status through program; the current results of the study represented that, there is a negative correlation with statistical significance difference between functional status and total knowledge, total self-care practice at $p \leq 0.05$, while there is appositive correlation with statistical significance difference between total knowledge and total self-care practice at $p \leq 0.05$. This result supported by ***Mohamed et al.,(2013)*** who stated that highly statistically significant relation between them both phases of the study subject's work ($P < 0.001$). Also this finding agree with ***Nabawy et al.,(2021)*** who illustrated that; there was a positive correlation between the studied patients' total knowledge score and their total self-care practices score toward psoriasis. Also this results supported by ***Ismail et al.,(2021***) **in** their study about Self-practice among patients with psoriasis: University hospital experience, who mentioned that patients' level of self-care was positively associated with the level of the knowledge of their disease.

Based on the results of the current study, the following can be concluded:

Most common of subjects of the current study were female, married, living in rural areas, educated and working. The knowledge and practice scores were higher among psoriatic patients who receive educational program.

Functional status among the subjects was improved after implementation of program. There was a negative correlation with statistical significance difference between functional status and total knowledge, total self-care practice and positive correlation between total knowledge and total practices pre and post program among the patients.

Recommendations:

Based upon the finding of the present study, the following has been recommended:

- Replication of the study on large probability sample from different geographic regions in Egypt for generalization of results.
- Conduct educational program to be launched through mass media for public awareness about psoriasis and how to prevent and manage it.

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