
■ **Basic Research**

Effect of Self -Management Nursing Intervention on Quality of Sleep and Daily Living Activities among Patients with Psoriasis

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Abstract

Introduction: Psoriasis is a chronic multisystem inflammatory disease linked with psychological stress, discomfort and physical disability which also affects sleep quality and disease severity. The holistic psoriatic patient's management accelerates the health care provider's urge for self-management nursing intervention implementation. **Aim:** Evaluate the effect of self-management nursing intervention on quality of sleep and daily living activities among patients with psoriasis. **Research design:** A quasi-experimental (one group pre-post intervention) design was employed. **Setting:** The study was conducted at the Dermatology, Venereology and Andrology Outpatient Clinic of Main University Hospital, Alexandria, Egypt. **Subjects:** A purposive sample of 100 adult psoriatic patients was comprised in the current study. **Tools:** Two tools' Arabic versions were used: (I) Pittsburgh Sleep Quality Index (PSQI) and (II) The Katz Index of Independence in Activities of Daily Living, In addition to Patient's Socio-demographic and Clinical Data Structured Interview Schedule. **Results:** There were statistically significant differences in sleep quality, independence activities of daily living functions' global mean scores before and after the self-management nursing intervention implementation ($p < 0.001$). Also, there were statistically significant differences in the total ADL and the overall sleep quality scores at $p < 0.0001$. So; self-management nursing intervention education is effective moving the studied psoriatic patients toward approaching independence in activities and better quality of sleep. **Recommendation:** Implementation of self-management nursing intervention to equip psoriatic patients with essential knowledge empowering them to assume self-care, improve sleep quality and dependency in daily living activities.

Keywords: Self-Management, Nursing Intervention, Quality of Sleep, Daily Living Activities, Psoriasis.

1. Introduction

Psoriasis is a chronic autoimmune non-communicable inflammatory skin disease, characterized by red, inflamed plaques, silvery scales and macules **(Griffiths, et al., 2021)**. The highly inflamed lesions appear as a result of defective signals by the immune system to increase proliferation and keratin mitosis rate; producing epidermal cells by tenfold. External and internal triggers responsible for psoriasis provocation including: mild trauma, sunburn, infections, obesity, smoking, excessive alcohol consumption, hormonal changes, systemic drugs and stress **(The National Psoriasis Foundation, 2021)**.

The estimated global psoriasis prevalence varies between 0.09% - 11.43%, with at least 135 million annual rate **(International Federation of Psoriasis Association (IFPA), 2018)**. It commonly occurs in the early life stages (30-39 years) and progress slowly with no clear cause or cure, affecting both men and women **(Hawkes, et al., 2017)**. However, 81% of the world's countries are lacking epidemiological surveys about the psoriasis; including Egypt; however the reported psoriasis prevalence in 2018 ranged 0.19-3%. **(CAPMAS, 2018; El-Komy et al., 2020)**

Psoriasis types depend on the affected tissues such as: scalp, the extensor surface of the elbows and knees, the lower part of the back and genitalia as well as the nails. Moreover, patients with psoriasis experience significant physical discomfort, including itching and burning pain; which can interfere with their basic functions such as self-care and caring for family members **(Samotij et al., 2020)**.

Sleep is essential for maintaining tissues wear and tear, energy conservation, rest and smooth organs functioning. Thus; sleep disturbance have a direct impact on the skin composition and integrity. Nevertheless, sleep disturbance has an impact on the immune system, which increases glucocorticoid production, affecting the integrity of both the epidermal lamellar bodies and the skin collagen fibers **(Wong, et al., 2017)**. Factors as

depression, anxiety, body image disturbance, as well as working environment, food, and the amount of daytime work; may influence psoriatic patient's sleep quality (**Luca, et al., 2020**). This in turn is reflected on work productivity, impairs the activity of daily living (ADL), disrupting their quality of life (QOL) (**Hawro, et al., 2020**).

Innovative insights have been currently directed toward the comprehensive psoriasis treatment planning through; early diagnosis, monitoring in addition to disease management. Thus, healthcare practitioners should offer tailored information and continuous support to psoriatic patients; in order to use prescribed treatments safely, minimizing potential side effect risks; employing new initiative educational strategies aimed at motivating psoriatic individuals' self-management. Where, self-management is defined within nursing science as "An active and dynamic learning process; aimed to explore the boundaries created by illness, and fluctuates awarding new life challenges (**Ritchlin & Scher, 2019; National Institute for Health Care and Clinical Excellence (NICE) guidance, 2022**).

Psoriatic patients' self-management education is the cornerstone of the tailored disease management; which is applied across treatment modalities from conventional topical therapies to home-based phototherapy. This poses significant challenges to psoriasis patients where their knowledge is limited, treatment is ineffective or psychosocial support is inadequate. This may in turn predispose to medication non-adherence, poor sleep quality, decrease ADLs and disengagement to the healthcare appointments (**Heng, 2022**).

The role of dermatology nurse in self-management health education is very important, intended to correct any misconceptions regarding the disease and its management. Accordingly, the psoriatic patients' self-management behaviors education is designed to achieve better awareness to the disease and its severity, increases motivation to make behavioral changes alleviating pain and suffering. Conversely, self-care behaviors training for psoriasis patients have major effects on improving the clinical outcomes and QoL.

Moreover, it increases the patients' feeling of control over the disease; resulting in better treatment adherence (Feldman et al., 2017; Omar & Ramadan, 2021).

2. Significance of the study:

Psoriasis is considered one of the costly chronic skin diseases predisposing to potential sleep disorders and ADLs impairments; altering the patients' physical and psychological health. Hence the global psoriatic adults' self-management related researches remains poorly investigated with lacking of evidence in the diverse clinical nursing practice discipline.

Thus the researchers found that, it is imperative to evaluate the self-management nursing intervention effect on both; sleep quality and the ADL in patients with psoriasis; hoping to anticipate in the nursing evidence-based practice frame.

3. Aim of the Study:

3.1- Evaluate the effect of self-management nursing intervention on quality of sleep among patients with psoriasis.

3.2. Determine the effect of self-management nursing intervention on daily living activities among patients with psoriasis.

4 .Research Hypotheses:

H₁: Patients with psoriasis who follow the self-management nursing intervention, exhibit improvement in their quality of sleep, than before.

H₂: Patients with psoriasis who follow the self-management nursing intervention, display better daily living activities, than before.

5. Operational Definition:

Self-management nursing interventions; are the set of nursing practices involving knowledge and skills to be followed discretely by each patient enrolled in the current study; empowering them in taking active role managing their quality of sleep and daily living activities.

6. Subjects and Method:

6.1. Research design: A quasi-experimental (one group pre-post intervention) research design was utilized to attain the present study aim.

6.2. Setting: The study was conducted at Dermatology, Venereology and Andrology Outpatient Clinic of Main University Hospital, Alexandria, Egypt. The setting was composed of five clinics namely: dermatology clinic, hair clinic, phototherapy clinic, systemic treatment clinic and waiting area. The clinic's weekly schedule time for patient's diagnosis and follow up; was 2 days (Tuesday and Wednesday). The working hours of the clinic were from 8 am to 2 pm.

6.3 Subjects: A purposive sample of 100 adults (20-60 years) psoriatic patients who attended the pre-mentioned setting at the time of the study, and met the following criteria; were included:

- Had a confirmed and documented dermatologist diagnosis of mild or moderate psoriasis in his/her medical record.
- Have no history of other dermatological disease
- Has no or controlled associated comorbidities e.g. hypertension, heart diseases.... etc.

Sample Size Calculation: Epi info -7 programs was used utilizing the following parameters. Population size=140, Expected frequency=50%, Acceptable error= 5%, Confidence coefficient=95 %, thus minimum sample size= 100 patients.

6.4. Tools of this study:

6.4.1. Tool I: Pittsburgh Sleep Quality Index (PSQI):

It is an effective tool used to measure the quality and patterns of sleep over the last month; its Arabic reliable version was adopted by the researchers from **Sueliman et al, 2010**. It consists of "19" self-rated questions in addition to "5" questions rated by the bed

partner or roommate. However; only the self-rated questions were included; the questions were then grouped to form seven "Sleep Domains" namely: subjective sleep quality, sleep latency, sleep duration, habitual sleep efficiency, sleep disturbances, use of sleep medication, and daytime dysfunction.

Scoring system:

Each response was measured through three points Likert Scale ranging from "0" to "3"; where "0" score indicates "No difficulty", and "3" "score reflects" Severe difficulty". However, to measure overall sleep quality; the seven domains scores were summed to provide one "global" score ranging from "0-21"; where lower scores denote a healthier sleep quality. However, the total score **16-21** indicates "Poor quality of sleep" in all domains, **11-15** "Mild quality", **6-10** "Moderate quality", and ≤ 5 "Good quality of sleep".

In addition, "**Patient's Socio-demographic and Clinical Data Structured Interview Schedule**" was attached to tool I and consisted of two parts:

Part I: This part comprised questions related to the studied patient's socio demographic data as: age, gender, level of education, occupation, marital status, and residence.

Part II: It incorporated questions related to patients' clinical data as: family history, disease onset, duration of illness, prescribed treatment, comorbidity and psoriasis severity.

6.4.2. Tool II: The Katz Index of Independence in Activities of Daily Living:

This tool's Arabic version was adopted from **Sarsak, 2021** in order to assess the studied psoriatic patients' independency level on performing their basic ADL. Where, the Index ranked the adequacy of patients' performance in "six functions" namely: bathing, dressing, toileting, grooming, feeding and physical ambulation.

Scoring system:

Patients' functional performances were scored on dichotomous response scale representing either "Yes" or "No" responses for ADL independence in each of the six functions. Each activity was given response points score; "1" means the person is

“Independent” & ”0”=“The person requires supervision, assistance or total care”. Thus, the total estimated score was ranging from “0-6”. Where; a score of $6 > 4$ indicates “Full function” or “Independent”, $4 > 2$ indicates “Moderate impairment” or “Almost Dependent”, and ≤ 2 indicates “Severe functional impairment” or “Dependent”.

6.5. Method

- The study was conducted after obtaining approval from the Research Ethics Committee, Faculty of Nursing, Alexandria University; as well as the permission from the Dermatology Department Head after explanation of the study purpose.
- Tool I & II Arabic versions were adopted from **Sueliman et al, 2010, and Sarsak, 2021**; where $r = (0.65, 0.827)$; respectively.
- A pilot study was carried out involving 10% of the studied patients who were not included in the study; to test clarity, feasibility, the estimated time for answering as well as the applicability of the study tools. However, the tools were verified to be clear and no modifications were required.
- Data were collected over a period of 6 months, starting from the beginning of December 2021 to the End of May 2022.
- **To fulfill the study aims; the self-management nursing intervention was carried out through four phases:**

Assessment Phase:

- Initial assessment was carried out individually for every studied psoriatic patient with careful history and data documentation. Additional assessment was carried out in order to identify patient’s limitations and needs as regard to their quality of sleep and ADL.
- The assessment sessions took about 45-60 minutes each; using tool I and II.

Planning phase

- In this phase the individualized self-management nursing intervention expected outcomes were customized to prioritize required self-management contents developed by the researchers according to the each patient's needs and limitations.

The self-management nursing intervention goals and expected outcomes were:

- Improve quality of sleep.
- Improve level of independency in performing ADL.
- At this phase also an illustrated colored instructional booklet was developed by the researchers in simple Arabic language; aimed to provide self-management practices for psoriasis patients; which included information about the disease causes and prognosis, sleep hygiene practices that improve sleep quality; importance of adherence to prescribed therapeutic management, the recommended daily exercise to improve ADL, in addition to the importance of attending at the scheduled follow-up time.

Implementation phase:

- The self-management nursing intervention was carried out in Dermatology, Venereology and Andrology Outpatient Clinic. Where, the researchers' sessions were conducted at a separate room next to the outpatients' examination room.
- The researchers implemented the self-management nursing intervention in form of theoretical and practical sessions; using lecture, interactive discussion, demonstration, and re-demonstration.
- In addition the illustrated Arabic booklet was distributed as a learning aid during session's implementation and as guiding source for participants' home motivation.
- Patients in the studied group were divided into twenty groups. Each group included 4-5 patients. Each group received 3 educational sessions; scheduled as 1 session per week, for three consecutive weeks duration.

- The three educational sessions were carried out to provide the selected psoriasis patients with new knowledge and skills; for attaining the study aims. The duration of each session lasted approximately from 45 to 60 minutes, depending on each patient's cognitive ability and needs.

The self-management nursing intervention educational content was introduced to the studied psoriatic patients in three sessions:

- **The first session:** It included the necessary theoretical information about: psoriasis definition, causes, types, symptoms & signs, different management, the importance of adherence medication and the importance of follow up. The content was delivered through face to face lecture, using audiovisual booklet and online videos.
- In addition, during the first session each patient received a simple teaching colored booklet that contained the content of the educational program as an illustrative guide for more clarification. Patients were asked to bring one of the family members to attend the health education sessions for home reinforcement of the prescribed instructions.
- **The second session:** In which patients received emphasized teaching information and practices that aimed to improve their quality of sleep and ADL as: **The importance of sleep practices;** which comprised topics related to the importance of: adequate sleep, the importance of healthy eating habits. It additionally enclosed **physical hygiene practices** as: put on loose fitting outfits, prefer cotton clothes, change garments every day, wash clothes daily and dry them in the sun, rinse the clothes thoroughly after washing and never use perfume sprays for the clothing. Also environmental settings required to enhance sleep as: noise free environment, place well ventilated surroundings, avoid unnecessary smoke and perfume in the sleeping area, take necessary steps to evade sleep disturbances, apply bedtime rituals as: go to bed early at the same time, avoid smoking and alcohol.

- The third session: It highlighted the importance of regular exercise, practices to improve ADL, the importance and examples of **regular daily exercises**: deep breathing exercise, bear hug exercise, neck stretches exercise, Kneeling stretch exercise, Legs up the wall pose exercise, butterfly exercise, crop exercise, child's pose exercise and walking. Where, each exercise was performed by the researchers who then encouraged patients' re-demonstration. However, patients were instructed to carry out exercises 3-4 times per day.
- At the end of the sessions patients' questions were clarified by the researchers. Also, the patients were instructed to attend at the clinic after four weeks for re-assessment and follow-up.
- However, patients' contact numbers were obtained for researchers' motivation and reinforcement to both sleep hygiene and ADL self-management intervention practices throughout the one month period, and to remind them about the clinic's follow up date due to COVID pandemic fear by some participants.

Evaluation phase:

- Patients were re-assessed one month after the implementation of the researchers' self-management nursing intervention; to evaluate patients' quality of sleep and ADL progress.

6.6. Ethical Considerations:

- Informed written consent for patients' voluntary participation in the study was obtained after explaining the study aim. As for illiterate patients; verbal explanation of the study purpose and patients' oral witness consents were secured. All patients were informed about their right of withdrawal from the study at any time. Subject's privacy and anonymity and data confidentiality were ascertained.

6.7 Statistical analysis of the data:

- Data were fed to the computer and analyzed using IBM SPSS software package version 20.0. (Armonk, NY: IBM Corp) Qualitative data were described using number and percent. Quantitative data were described using mean and standard deviation. Significance was judged at $p \leq 0.5\%$ level.

7. Results:

Table (1) illustrates frequency distribution of the studied patients according to socio-demographic characteristics. In terms of gender, more than two thirds (67.0%) of them were female. Concerning, their age, the studied patients mean age was 36.87 ± 9.40 years. It can be noticed that, nearly half (45.0%) of them can't read and write; however, the lowest patients' percentage (14.0%) holds high education. Also, three-quarters of them (77.0%) were married; more than two thirds (67.0%) were housewives and almost three quarters of them (74.0%) live in rural area.

Table (2) shows frequency distribution of the studied patients according to clinical data, where; Plaque psoriasis was present in the majority (88%) of the studied patients; where more than two thirds (68.0%) had psoriasis duration from 1 to less than 5 years, and the majority (90%) had no family history of psoriasis. Furthermore, 85% of them currently complained from red spots on the surface of the skin covered with thick silvery areas, moreover 63.0% suffered from psychological problems as embarrassment, anxiety and stress (25%), in addition to depression and low self-esteem (6%); respectively. Noticeably, all (100%) the studied patients were receiving topical therapy; where additionally 31% of them were on systemic treatments.

Table (3) shows comparison between PSQI subscales mean score among studied patient's pre and post self-management nursing intervention implementation; where significant

differences at p value $<0.001^*$ of all PSQI domains between the pre and one month post self-management nursing intervention; were declared.

Table (4) displays percentage distribution of the studied patients regarding their global PSQI score pre and post researchers' self-management nursing intervention. However, a noticeable progress among their global PSQI score before and after the self-management nursing intervention was identified where, almost three-quarters (73%) of them had poor sleep quality pre the implementing the intervention, while more than two thirds (68.0%) of them reported good sleep quality; one month thereafter. This table also clarifies a statistical significant difference between the pre and post the self-management nursing intervention global PSQI scores; at ($P=< 0.001^*$) ($Z= 8.693^*$).

As for **table (5)**; on comparing the total mean score of ADL functions among studied psoriasis patients at pre and post the self-management nursing intervention, it was evident that; the total ADL functions mean percent scores; namely bathing, dressing, toileting, feeding and physical ambulation were enhanced after the self-management nursing intervention implementation rather than pre intervention from 66.60, 59.60, 66.0, 64.80, and 73.20 to 84.40, 80.60, 81.0, 78.40 and 82.20 one month thereafter; respectively. Additionally, statistically significant differences between the two studied periods were evident except for; grooming at $p \leq 0.05$.

Table (6) depicts that almost one third (34%) of the studied psoriatic patients' were completely dependent, 7% were almost dependent pre the researchers intervention. Whereas; post implementing the self-management nursing intervention less than one quarter (23%) of them were almost dependent and more than two third (71%) were independent. These findings were representing statistically significant difference of the studied patients' total ADL level of independency at pre and post self-management nursing intervention; at $p <0.001^*$.

Table (7) reveals statistically significant difference in the total ADL and the overall sleep quality mean percent scores at $p < 0.0001$; where the studied psoriasis patients' the global PSQI sleep quality and total ADL mean percent scores after one month of the researchers' intervention were improved from 78.71, 66.13 to 23.76, 79.40; respectively.

Table (1): Distribution of the studied patients regarding their socio-demographic characteristics (n = 100).

Socio-demographic data	No.	%
Age (years)		
▪ 20 <35	38	38.0
▪ 35 < 45	38	38.0
▪ 45 ≥60	24	24.0
Mean ± SD.	36.87 ± 9.40	
Gender		
▪ Male	33	33.0
▪ Female	67	67.0
Marital status		
▪ Single	14	14.0
▪ Married	77	77.0
▪ Divorced	2	2.0
▪ Widow	7	7.0
Occupation		
▪ Housewife	67	67.0
▪ Manual	19	19.0
▪ Employee	5	5.0
▪ Not working	9	9.0
Level of education		
▪ Can't read and write	45	45.0
▪ Primary & Preparatory	13	13.0
▪ Secondary	28	28.0
▪ University education	14	14.0
Area of residence		
▪ Urban	26	26.0
▪ Rural	74	74.0

SD: Standard deviation

Table (2): Distribution of the studied patients regarding to their clinical data (n = 100)

Clinical data	No.	%
Type psoriasis		
▪ Plaque psoriasis	88	88.0
▪ Inverse psoriasis	12	12.0
When you began to complain of psoriasis		
▪ <12 month	6	6.0
▪ 1<5 years	68	68.0
▪ 5 <10 years	14	14.0
▪ >10 years	12	12.0
Positive family history of psoriasis		
▪ No	90	90.0
▪ Yes	10	10.0
Suffering from psychological problems due to psoriasis		
▪ Embarrassment	63	63.0
▪ Anxiety and psychological stress	25	25.0
▪ Depression	6	6.0
▪ Low self-esteem	6	6.0
Symptoms #		
▪ Red spots on the surface of the skin covered with thick silvery areas	85	85.0
▪ Itching	80	80.0
▪ Dryness, cracks or bleeding in the affected area	59	59.0
▪ Thicken or wrinkled nails	35	35.0
▪ Fatigue	29	29.0
▪ Joint pain	16	16.0
▪ Small spots covered with scales	10	10.0
Treatment #		
▪ Topical therapy	100	100.0
▪ Systemic therapy	31	31.0
▪ Phototherapy	14	14.0

#: More than one answer

Table (3): Comparison between mean score of PSQI domains among studied psoriasis patient's pre and post the self-management nursing intervention (n= 100).

PSQI domains	Pre intervention	Post intervention	T test	P Value	Effect size of intervention
	Mean ± SD.	Mean ± SD.			
▪ Subjective sleep quality	2.51 ±0.64	0.72 ±0.65	8.451*	<0.001*	93%
▪ Sleep latency	2.77 ± 0.42	1.41 ± 0.65	8.335*	<0.001*	92%
▪ Sleep duration	2.63 ± 0.80	0.44 ± 0.67	8.495*	<0.001*	93%
▪ Sleep efficiency	2.47 ± 1.03	0.44 ± 0.83	8.104*	<0.001*	88%
▪ Sleep disturbances	2.02 ± 0.14	0.80 ± 0.40	9.252*	<0.001*	96%
▪ Sleep medication use	1.83 ± 1.0	0.30 ± 0.56	7.839*	<0.001*	87%
▪ Day time dysfunctions	2.30 ± 0.67	0.88 ± 0.64	8.179*	<0.001*	90%

Z: Wilcoxon signed ranks test

p: p value for comparing between the pre and post intervention *: Statistically significant at $p \leq 0.05$

Table (4): Percentage distribution of the studied psoriasis patients regarding their global PSQI score pre and post the self-management nursing intervention (100).

The global PSQI score	Pre intervention		Post intervention		Z	P	Effect size of intervention
	No.	%	No.	%			
▪ Poor sleep quality (6 to 21)	73	73.0	0	0.0	8.693*	<0.001*	92%
▪ Mild sleep quality (11-15)	23	23.0	1	1.0			
▪ Moderate sleep quality (6-10)	4	4.0	31	31.0			
▪ Good sleep quality (0 to 5)	0	0.0	68	68.0			
Min. – Max.	7.0 – 20.0		1.0 – 12.0				
Median	17.0		5.0				

Z: Wilcoxon signed ranks test

*: Statistically significant at $p \leq 0.05$

p: p value for comparing between the pre and post self-management nursing intervention

Table (5): Comparison between total mean score of ADL independency functions among studied psoriasis patients pre and post the self-management nursing intervention (n= 100).

ADL functions	Pre intervention		Post intervention		Z	p
	Total mean Score	Total mean % Score	Total mean Score	Total mean % Score		
▪ Bathing	3.33 ± 2.35	66.60 ± 47.06	4.22 ± 1.36	84.40 ± 27.20	4.910*	<0.001*
▪ Dressing	2.98 ± 2.37	59.60 ± 47.48	4.03 ± 1.59	80.60 ± 31.71	4.60*	<0.001*
▪ Toileting	3.30 ± 2.33	66.0 ± 46.67	4.05 ± 1.47	81.0 ± 29.32	4.639*	<0.001*
▪ Grooming	3.33 ± 1.91	66.60 ± 38.25	3.49 ± 1.77	69.80 ± 35.45	1.132	0.258
▪ Feeding	3.24 ± 2.25	64.80 ± 44.96	3.92 ± 1.64	78.40 ± 32.74	4.753*	<0.001*
▪ Physical ambulation	3.66 ± 2.10	73.20 ± 42.09	4.11 ± 1.61	82.20 ± 32.27	2.975*	0.003*

SD: Standard deviation Z: Wilcoxon signed ranks test *: Statistically significant at $p \leq 0.05$

p: p value for comparing between the pre and post self-management nursing intervention

Table: (6) Percentage distribution of the studied patients' total ADL level of independency pre and post self-management nursing intervention (100).

Total ADL level of independency	Pre intervention		Post intervention		MH	P
	No.	%	No.	%		
▪ Dependent	34	34.0	6	6.0	67.0*	<0.001*
▪ Almost Dependent	7	7.0	23	23.0		
▪ Independent	59	59.0	71	71.0		

MH: Marginal Homogeneity Test *: Statistically significant at $p \leq 0.05$

p: p value for comparing between the pre and post self-management nursing intervention

Table (7): Effectiveness of the self-management nursing intervention over a period of one month on sleep quality and ADL among studied psoriasis patients (n = 100)

Effectiveness of self-management nursing intervention on sleep quality, and ADL	Pre intervention	Post intervention	Z	P
Global sleep quality				
Mean Score	16.53 ± 2.73	4.99 ± 2.08	8.693*	<0.001*
Mean % Score	78.71 ± 12.99	23.76 ± 9.91		
Total ADL				
Mean Score	19.84 ± 11.33	23.82 ± 7.49	5.354*	<0.001*
Mean % Score	66.13 ± 37.78	79.40 ± 24.96		

SD: Standard deviation **Z: Wilcoxon signed ranks test** *: Statistically significant at $p \leq 0.05$

p: p value for comparing between the pre and post self-management nursing intervention

8. Discussion

Psoriasis is one of the most common chronic skin disorders with a prevalence rate of 0.1–1.5% of the worldwide population (**Griffiths et al., 2021**). However, the disease frequent relapses, absence of permanent cure, and cosmetic disfigurement have negative impact on sleep quality and ADL causing physical and psychological stress. **Ujji et al., (2022)** Therefore the aim of current study was to evaluate the effectiveness of self-management nursing intervention on quality of sleep and daily living activities among patients with psoriasis.

In respect of demographic aspects, the present study displayed that the mean studied patients' age was 36.87 ± 9.40 and the majority of them were female; this finding from the researchers' point of view may be attributed to the higher exposure of female to physical and psychological stress. In this regard **Ghezalje et al., (2018)** illustrated that the majority of their studied patients mean age was in the range of 39 ± 387 years; while the incidence of females was twice than males. This finding is not in accordance with **Nabawy et al., (2021)** results who found that, more than one third of the studied subjects were aged 50 years or more, mentioning that prevalence was higher among men than in women.

According to the current study's findings, nearly half of the patients were illiterate, one third had high levels of education and nearly three-quarters were not working and housewives. The findings matched with **Mohammed and Abd El-Naby (2021)**, who found that a high percentage the studied patients were illiterate and the majority was unemployed. However, this result was inconsistent with **Elzehiri, Srour and Salime, (2022)** who mentioned that, half of their sample had either secondary or higher education.

As regards the type of psoriasis, more than two-thirds of the studied patient had plaque type; which was supported by **Alhammad et al., (2021)** who declared that, psoriasis Vulgaris (plaque) is the most apparent type in around 90% of cases. In the same context

Rendon and Schäkel (2019) clarified that; plaque psoriasis is the most prevalent type affecting 80% to 90% of psoriatic patients.

Concerning the disease duration, the current study results revealed that, more than two thirds patients had been suffering from the disease for 1 to less than 5 years. This finding was corresponded with **Sharaf & Ibrahim (2017)** found that almost half of the patients had been suffering from the disease for more than 1 years. This finding is also in-agreement with **Nayak et al., (2018)** who found that almost a quarter of the patients had been suffering from the disease for more than 5 years. This result from the researchers' clinical experience is asserting the urgent need for those patients to constant follow-up; as along disease duration and numerous disease complications appear throughout their lives.

In term of psoriasis signs and symptoms, more than one sign and symptom were described; where the majority of the studied patients reported red spots on the skin surface covered with thick silvery areas followed by itching and dryness in the affected area. However the researchers' interpretation is that; these are in line with the classical plaque psoriasis symptoms; where its typical manifestations are red, thick, scaly, raised-up areas on the skin that are itchy, painful, which may flake and bleed. These findings were in agreement with a recent study conducted by **Alhammad et al., (2021)** and **Nabawy et al., (2021)** who confirmed that, classical plaque's clinical manifestations are sharply demarcated raised lesions covered in silvery skin scales, itching, erythema and fatigue.

Also these finding was supported by the **Committee of Psoriasis (2020)** study of "Guidelines for the Diagnosis and Treatment of Psoriasis in China" which declared that, signs and symptoms of plaque psoriasis are dark red plaques with infiltrating erythema covered by white and silver-white scales; wax spot phenomenon and skin rashes that might be accompanied with itching.

The present study demonstrated significant differences between the global sleep quality as well as all sleep quality domains pre/post self-management nursing intervention

implementation. These results were supporting the research hypothesis (**H1**) which indicated that; patients with psoriasis who follow the self-management nursing intervention, exhibit improvement in their quality of sleep, than pre self-management nursing intervention. According to researchers' point of view; improvement post self-management nursing intervention is ought to the effectiveness of the nursing interventions which was implemented individually to each patient using tailored teaching strategies based on their level of education and understanding, along with the researchers' regular phone contacts for motivating patients' consistency in the self-management interventions implementation.

However, in this respect **Podder, Mondal, and Kroumpouzou (2021)** have emphasized the importance of assessing sleep quality and adopting appropriate measures to highlight psoriasis patients' sleep improvement. These results were also in accordance with **Nowowiejska et al., (2021)** in a study aimed to assess sleep quality and its association with psoriasis disease severity who found that, most studied patients had impaired sleep quality before providing any intervention. In the same direction **Revathi, Anandan and Samson, (2014)** in a study entitled "Effectiveness of sleep hygiene practices on quality of sleep, psoriasis severity and activities of daily living among patients with psoriasis" found that, neither the study nor the control group reported significant improvement of sleep quality before sleep hygiene practices implementation, while a statistically significant was noted in the study than the control group post researchers' implementation.

Also, **Lou, (2016)** declared that, psoriasis group who received targeted nursing interventions, including dietary intervention, health guidance, emotional care, and herbal fumigation had effectively reported improved disease condition and sleep quality compared with control group compelling to routine hospital care.

Moreover the current study portrayed that, the total ADL functions mean percent scores were improved one month after the self-management nursing intervention with

statistically significant differences in the total ADL level of independency at pre and post self-management nursing intervention. However, these results are supporting the research hypothesis (**H2**) which declared that, psoriatic patients who follow the self-management nursing intervention, exhibit better ADL. In agreement to our results **Li et al., (2020)** reported that; psoriasis patients who received individualized intervention had reported improved total scores in relation to sleep quality, self-respect, learning, ADL and interpersonal relationships following researchers' interventions.

Also **Zhong et al., (2021)** in their study entitled "Impact of moderate-to-severe psoriasis on quality of life in China" stated that, psoriasis associated symptoms has negative effects on psoriasis patients; causing great difficulty in various ADLs aspects namely: mobility comprising: walking, carrying, climbing and clothing which must be changed or washed frequently, due to presence of skin flakes that also requires bathing more often.

Further studies have supported the researchers' perspective regarding the value of implementing self-care management nursing interventions for improving psoriatic patients' ADL; namely **Soliman, (2020)** and **Bayomy et al., (2022)** who illustrated that; Arabic psoriatic patients' chronicity and social stigma of the disease impaired their quality of life and its accompanied ADL; stressing the importance of implementing specialized self-care programs. Moreover, these findings are consistent with **Karimipour et al., (2017)** & **Cobo-Ibáñez et al., (2016)** study who confirmed the efficacy of multidisciplinary individualized self-care management consultation on psoriatic patient's overall ADL improvement; showing higher score for their patients' self-care outcome in terms of clothing, bathing, toileting, and feeding.

As well results clearly portrayed that; the currently provided researchers' self-management nursing intervention had significantly improved the studied psoriatic patients toward approaching independency in ADL, clarifying the patients' need for self-management health education to increase their disease awareness, reduce the risk of diseases

stigma, improve independence of activities and increase their confidence and skills in disease management. Where, **Elzehiri, Srour and Salime, (2022)** have reported highly statistically significant difference between their study and control groups in overall psoriasis reported ADL self-care practices with an evident decrease in the level of psoriasis disability.

As well it was clearly portrayed that; the currently provided researcher's self-management nursing intervention education was effectively influencing the studied psoriatic patients toward approaching independence in ADL, in addition to better quality of sleep. This result is supported by **Revathi, Anandan and Samson, (2014) & Gaikwad, (2020)** who identified that; the majority of their studied patients had improved sleep which was significantly associated with the degree of ADL after implementing specific sleep hygiene practices. Emphasizing the importance of psoriatic patients' education to assist them developing knowledge, ability and confidence in self-management; in order to improve their adherence to the treatments, improve their sleep, ADL and quality of life. As well **Nabhan, Mohammed and Abd El-Naby (2021) & Karimipour et al., (2017)** have highlighted the positive effect of delivering a tailored self-care based educational nursing intervention on psoriasis patients' self-care daily life activities total scores; and their subsequent improvement on their QoL.

Also the current study results evidently portrayed after one month of the researchers' self-management nursing intervention that; the studied psoriatic patients' quality of sleep and ADL overall scores were moved toward better sleep quality and independence in activities, yielding its effectiveness and efficaciousness. These results are in accordance with **Elzehiri, Srour and Salime (2022)**; who stated that it is of a profound importance for patients to participate in self-management education, with expansion of innovative professional interventions; which can alter their self-care behaviors playing a significant effect on preventing the disease impairments.

Also **Soliman, (2020) and Bayomy et al., (2022)** emphasizes on the clinical attention on Arabic patient's self-care education and counseling, which is highly recommended for better quality of life, ADL functioning, in order to enhance patients' everyday life abilities.

8. Conclusion

The current study findings concluded, statistical significant differences between the pre and post self-management nursing intervention global PSQI mean percent scores. In addition, the majority of psoriasis patients' independence ADL functions total mean percent scores were improved after the implemented self-management nursing intervention, with statistically significant difference in the total ADL and the overall sleep quality scores at $p < 0.0001$. So; self-management nursing intervention education is effective moving the studied psoriatic patients toward approaching independence in activities and better quality of sleep.

9. The study recommended that:

- Integrate interdisciplinary care approach in the targeted regular self-care practices educational programs for patients with psoriasis.
- Engage the self-management nursing intervention in psoriatic patients' treatment plan side by the traditional treatment, to equip them with the knowledge essential for empowering self-care abilities, improve sleep quality and achieve long lasting disease remission.
- Replication of this study on a larger sample to attain more generalization.

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الملخص العربي

تأثير التدخل التمريضي الذاتي على جودة النوم وأنشطة الحياة اليومية بين مرضى الصدفية

المقدمة: يعتبر مرض الصدفية أحد أمراض المناعة الذاتية المزمنة والتي تحدث نتيجة التفاعلات بين العوامل الوراثية والمناعية والبيئية، يتزامن مع المرض عبئاً نفسياً، وحسبياً مما يؤثر على جودة النوم وأنشطة الحياة اليومية. ولهذا فان مبدأ العلاج المبكر و الرعاية الذاتية يساعد كثيراً في التحكم بالمرض وتقليل شدة الاعراض ومعاونة المرضى.

الهدف من الدراسة: تقييم تأثير التدخل التمريضي الذاتي على جودة النوم وأنشطة الحياة اليومية بين مرضى الصدفية.

منهجية البحث: تم استخدام تصميم بحثي تجريبي لاجراء هذه الدراسة على 100 مريضاً يعانون من مرض الصدفية في العيادة الخارجية للأمراض الجلدية والتناسلية وأمراض الذكور في المستشفى الجامعي الرئيسي، الإسكندرية ، مصر.

أدوات البحث: تم استخدام اداتين باللغة العربية لجمع البيانات في هذه الدراسة.

الأداة الاولى : مؤشر جودة النوم بيتسبرغ (PSQI)

الاداة الثانية : مؤشر كاتز للاستقلال في أنشطة الحياة اليومية (The Katz Index of Independence in

Activities of Daily Living) بالإضافة الى استمارة المقابلة الشخصية الخاصة بالبيانات الاجتماعية

والديموغرافية والاكلينيكية للمريض.

النتائج: لقد اسفرت نتائج البحث عن الاتي: : كان هناك فروق ذات دلالة إحصائية في جودة النوم و الاستقلالية في أنشطة الحياة اليومية في مجموع متوسط الدرجات قبل وبعد تنفيذ التدخل التمريضي الذاتي. لذا؛ يعد تعليم التدخل التمريضي الذاتي فعالاً في حث مرضى الصدفية نحو الاقتراب من العناية الذاتيه، تحسين جودة النوم و المحافظة على الاستقلالية في أنشطة الحياة اليومية.

التوصيات: تطبيق التدخل التمريضي الذاتي لجميع مرضى الصدفية لتزويدهم بالمعلومات الاساسيه اللازمه لتمكينهم من تولي الرعاية الذاتية، تحسين جودة النوم و المحافظة على أنشطة الحياة اليومية.