Effect of Psychiatric Nursing Interventions on Climate Change Worry for Psoriasis Patients

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Abstract

Background: Psoriasis is a skin condition that typically affects the knees, elbows, trunk, and scalp. It has a seasonal component that peaks in winter and early spring and decreases in late summer. A prevalent component of psoriasis is psychological discomfort, which has a detrimental impact on life and the severity of the condition. This study aimed to assess the effect of psychiatric nursing intervention on climate change worry. **Research design:** A quasi-experimental (pre/post-test) research design was used. **Setting:** The study was carried out at outpatient dermatology clinics at Assiut University hospital, Egypt. **Sample:** A purposive sample of 100 patients, their ages ranged from (18-65) years diagnosed only with psoriasis and not having other skin diseases. **Study tools:** Including personal and clinical data sheet and climate change worry scale. **Results:** At pre- test, 70% of the experimental groups have high level of worry about climate change. While post-test 68% of experimental group have low level of worry about climate change. **Conclusions:** Implementing Psychiatric Nursing intervention improved coping strategies to climate change worry among studied patients. **Recommendations:** Integrating Psychiatric Nursing intervention into the treatment plans for patients with psoriasis and providing patients with educational materials and counseling sessions.

Keywords: Climate Change Worry & Psoriasis

Introduction

Psoriasis is a widespread, incurable, chronic illness that lasts a long time. In addition to being uncomfortable, it can disrupt sleep and make it difficult to focus. The illness usually flares up for a few weeks or months, then goes into remission for a while. For those who have a hereditary propensity to psoriasis, common triggers include climatic change associated factors, infections, burns, or wounds, as well as some drugs **(Elzehiri et al., 2022).**

Psoriasis is a condition that can affect anyone at any age; cases have been documented in newborns and elderly individuals. Psoriasis studies usually rely on the patient's recollection of the onset of lesions or use the doctor's diagnosis from the initial visit to estimate the onset age, which makes it difficult to determine the age of onset accurately **(Visser et al., 2021).**

Psoriasis's etiology is not entirely understood. Different forms of psoriasis have been linked to genetics, seasonal variations, climatic change, skin damage, immunocompromised states, certain infections, and the use of certain drugs **(Joshi et al., 2023).**

Psoriasis patients have a lower quality of life similar to or worse than those with other chronic illnesses like diabetes and ischemic heart disease, the fact that psoriasis sufferers perceive their condition as stigmatizing is widely known. This makes daily functioning difficult, which puts more than 5% of patients at risk for depression and suicide thoughts **(Meneguin et al., 2020).**

Psoriasis is a chronic disease, the prevalence of which shows geographic variations, suggesting that it might be influenced by climatic factors such as sun exposure and humidity **(Chen et al., 2022).**

Chronic psoriasis patients deal with a variety of psychological issues, including worry and sadness **(Pavlova et al., 2021).** Psychological distress is frequently associated with psoriasis and has a negative impact on life and the severity of the condition. For many years, it has been postulated that stress is a major factor in the onset and aggravation of psoriasis **(Jensen et al., 2022).**

Significance of the Study:

Psoriasis is reported to be prevalent in between 0.09% and 11.4% of countries **(Alzeer & Aleisa, 2022).** In Egypt, the prevalence is around 3% **(Abdelsamed et al., 2021).** Numerous studies have shown that psoriasis can have a significant negative influence on life, even when it only affects a small portion of the body (BSA) **(Yeh et al.,2022).** So, this study is important to assess the effect of climate change on Psoriasis patients and assess the effect of psychiatric nursing intervention on climate change worry.

Aim of the study:
To assess the effect of psychiatric nursing interventions on climate change worry for psoriasis patients.

Research hypothesis:
H1: Patients with psoriasis who received psychiatric nursing intervention had lower level of climate change worry than who didn't receive it.

Subjects and Method:

Research design:
A quasi-experimental (pre-posttest) control research design two group control and experimental (pre-posttest) was used in this study.

Setting:
The study was carried out at outpatient dermatology clinics at Assiut University hospital.

Sample:
A purposive sample of 100 patients, their ages ranged from (18- 65) years diagnosed only with psoriasis and not having other skin diseases.

Sample size:
Sample size was calculated by **Open Epi Info version (3)** according to previous study conducted by **Nagarajan et al., (2018),** using the following equation

$$n = \frac{N \times p(1-p)}{\left[\left[N - 1 \times \left(d^2 \div z^2\right)\right] + p(1-p)\right]}$$

to detect an effect size of one group (pre/ post-test). After considering the exclusion criteria, the final sample size was (100). Where N = total patient population size. The Z= confidence level is 0.95 and is equal to 1.96, D= the error ratio is = 0.05 P= the property availability ratio and neutral = 0. 50.

Study tools:

Tool (I): Personal and clinical data sheet:
This tool was developed by the researcher to collect the information about the personal data such as(age, gender, education level, residence, occupation and marital status and clinical data such as(patient's diagnosis, history of psychiatric disorder and the influence of environmental factors.

Tool (2): Climate Change Worry Scale (CCWS):
It was created by (**Stewart, 2021**), It contained (10 items) designed to measure the extent of rumination and worry specifically about climate change. On a five-point Likert scale, where 1 never, 2 = seldom, 3 = sometimes, 4 = often, and 5 = always, the items were scored. Three categories are identified based on the overall scores on the CCWS: high (30–40), moderate (19–29) and low (8–18) representing the spectrum of climate change worry. It has been validated and shown to be a reliable measurement ($\alpha = .95$).

Booklet:
The researcher developed booklet based on the patient assessment needs and a literature review as well as opinions of psychiatric and dermatology experts. It had both theoretical and practical components and was written in basic Arabic with the use of photo illustrations and colored drawings to make it appropriate for all patients, regardless of their educational background.

The theoretical section covers general information on psoriasis, including the definition of psoriasis, its causes, types, symptoms, treatment and its management, strategies to cope with climate change worry, On the other hand, the practical part focuses on relaxation techniques (deep- breathing exercise, progressive muscle relaxation and meditation)

Content validity:
The tools' validity and reliability were examined before the start of the investigation. To verify the content validity, a team of five experts, three from psychiatric nursing and two from psychiatric medicine, reviewed the study tools. The panel's assessment of the phrases' clarity and suitability for the material was taken into consideration while making the modifications.

Pilot study:
Following the design and refining of the research instruments, a pilot study was conducted on 10% (10) of patients in December 2022 to assess the practicality and clarity of the items & also to estimating the amount of time required to gather data. Following a pilot study, no changes were made to the instruments; hence the pilot research's sample was added to the overall sample

Ethical considerations:
The Research Ethics Committee of Assiut University Faculty of Nursing granted ethical approval for this study with an approved number (1120240465) on October 27/2022. The study followed common ethical principles in clinical research. There were no risks for patients during application of the research. Oral consent was obtained from patients or guidance that is willing to participate in the study after explaining the nature and purpose of the study. Patients have the right to refuse to participate or withdraw from the study without any rational. patient's privacy was considered during collection of data. Confidentiality and anonymity were assured.

Procedure:
The following stages were involved in the proposed Nursing intervention:

Phase 1 (Assessment): To get the required data, each patient was interviewed during this phase, which was designed to evaluate the investigated sample. The researcher prepared tools and media based on the assessment phase in the form of teaching methods such as lectures and discussion which were reviewed by supervisors. Media that was used booklet, pictures.

Phase 2 (Preparation): The strategies time, number of sessions, teaching methods, media used were all included in the planning phase. Additionally, the suitability of facilities and the teaching location were examined. There were four sessions total, with one session held each week; the duration of each session ranged from 30-60 minutes. Sessions included; (introduction about psoriasis, general view about treatment of psoriasis and its management, strategies to cope with climate change worry. A variety of teaching methods was included lectures, group discussion, and sharing experience of the studied sample.

The content of nursing intervention as the following
Session 1: The researcher gave an introduction about the program, its goals, place and schedule of sessions, and pretest questionnaire

Session 2: Introduction about psoriasis, definition of psoriasis, types of psoriasis, etiology of psoriasis, sign and symptoms of psoriasis, and management of psoriasis.

Session 3: Strategies to cope with climate change worry: training about three types of relaxation techniques (deep breathing exercise, progressive relaxation technique and meditation).

Phase 3 (Implementation):
During this phase, the patients who were included in the study were divided into five subgroups, each one containing ten participants. The booklet covered the

theoretical part about psoriasis, definition of psoriasis, types of psoriasis, etiology of psoriasis, sign and symptoms of psoriasis, and management of psoriasis. Also, it included several practical sessions in which different types of relaxation techniques. After each session the researcher spent a brief period reviewing the content of session as well as obtaining patient's feedback.

Phase 3 (Evaluation):
Evaluation of both studied and control groups was done using the same study tools firstly, (pre-test) and secondly, four weeks after implementation of the intervention (post-test).

Statistical design:
Data management was done by coding entering responses into the computer. The researcher checked all data to avoid any discrepancies; data were examined for coding and entry error. Subject's records were stored in SPSS software (Statistical Package for the Social Science version 26). In the descriptive analysis, the quantitative variables were described using mean ± standard deviation (SD), frequency, and percentages, while the qualitative variables were described using frequency and percentages. The method used was the Pearson correlation coefficient. Less than 0.05 for probability (P-value) was deemed significant, and less than 0.001 for highly significant results.

Results:

Table (1): Distribution of personal data among experimental and control groups (n=100)

Variables	Experimental n= 50		Control n= 50		P-value
	No.	%	No.	%	
Age: (Mean ± SD)	34.70±11.41		36.70±10.41		0.362
<30 years	17	34.0	16	32.0	
30 – 40 years	19	38.0	15	30.0	0.533
> 40 years	14	28.0	19	38.0	
Gender:					
Male	33	66.0	25	50.0	0.105
Female	17	34.0	25	50.0	
Marital status					
Single	17	34.0	14	28.0	0.517
Married	33	66.0	36	72.0	
Residence:					
Rural	23	46.0	20	40.0	0.545
Urban	27	54.0	30	60.0	
Level of education					
Read and write	10	20	20	40	
Preparatory	7	14	5	10	0.257
Secondary	20	40	15	30	
University education	13	26	10	20	
Occupation					
Not work	13	26	18	36	0.313
Work	37	74	32	64	

statistically significant difference (p<0.05)

Table (2): Distribution of clinical data among experimental and control groups (n=100)

Variables	Experimental n= 50		Control n= 50		P-value
	No.	%	No.	%	
History of starting illness (Mean ± SD):	11.52±5.48		11.46±5.52		0.957
< 10 years	20	40.0	20	40.0	
10 – 20 years	24	48.0	25	50.0	0.946
> 20 years	6	12.0	5	10.0	
#**Factors that trigger symptoms:**					
Season change	46	55.4	50	60.2	
Smoking	12	14.5	12	14.5	0.186
Life stresses	25	30.1	21	25.3	

#More than answer   *statistically significant difference (p<0.05)*

Table (3): Distribution levels of climate change worry among experimental and control groups at pre and post intervention (n=100)

Levels of Climate Change Worry	Experimental n= 50		Control n= 50		P-value1
	No.	%	No.	%	
Pre intervention					
Low	5	10%	10	20%	
Moderate	10	20%	15	30%	0.625
High	35	70%	25	50%	
Mean ± SD	16.22±4.59		14.52±5.49		0.096
Post intervention					
Low	34	68%	10	20%	
Moderate	8	16%	15	30%	**0.012***
High	8	16%	25	50%	
Mean ± SD	12.74±4.05		14.52±5.49		**<0.001***
P-value²	**<0.001***		0.299		

P-value¹: comparing between studied and control groups at pre and and post intervention
P-value²: comparing between pre and and post intervention in each group
statistically significant difference (p<0.05)

Table (4): Relationship between personal data and total of Climate Change Worry among experimental and control groups at pre and post intervention (n=100)

Variables	Experimental n= 50		Control n= 50	
	Pre Mean±SD	Post Mean±SD	Pre Mean±SD	Post Mean±SD
Age: (years)				
< 30	33.65±11.60	12.12±2.09	16.13±6.01	16.50±6.72
30 – 40	30.74±13.79	11.47±1.90	14.47±6.12	14.33±6.18
> 40	36.21±11.67	11.64±2.21	17.47±3.99	18.16±4.14
P. value	0.462	0.632	0.278	0.162
Sex:				
Male	35.39±11.67	12.03±2.08	15.84±5.60	16.00±6.30
Female	29.12±13.21	11.18±1.85	16.44±5.29	16.96±5.33
P. value	0.091	0.161	0.699	0.563
Marital status				
Single	35.41±9.94	11.82±2.01	16.93±5.89	17.36±6.66
Married	32.15±13.57	11.70±2.07	15.83±5.25	16.14±5.48
P. value	0.386	0.837	0.525	0.510
Residence:				
Rural	36.65±12.79	12.35±2.06	15.20±4.84	15.05±4.87
Urban	30.37±11.61	11.22±1.89	16.77±5.73	17.43±6.23
P. value	0.075	**0.049***	0.320	0.156
Level of education				
Read and write	37.53±10.40	12.00±2.24	15.21±4.95	16.25±5.67
Preparatory	22.20±12.30	10.40±0.89	18.00±6.54	18.23±6.61
Secondary	32.46±13.58	12.17±2.06	16.33±4.77	14.67±4.77
University	35.00±7.95	10.50±1.22		
P. value	0.112	**0.025***	0.311	0.355
Occupation				
Not work	33.94±13.25	11.48±1.93	16.29±5.50	16.71±5.96
Work	32.16±11.27	12.16±2.17	15.44±5.17	15.44±5.17
P. value	0.629	0.258	0.674	0.559

Statistically significant difference (p<0.05)

Table (5): Relationship between clinical data and total of climate change worry among experimental and control groups at pre and post intervention (n=100)

Variables		Experimental n= 50		Control n= 50	
		Pre Mean±SD	Post Mean±SD	Pre Mean±SD	Post Mean±SD
History of starting illness:					
< 10 years		35.85±9.80	12.40±1.93	16.30±5.67	16.35±5.97
10 – 20 years		30.21±13.82	11.38±2.10	16.44±5.29	16.72±5.74
> 20 years		36.83±13.72	11.00±1.67	14.00±5.48	15.80±6.57
P. value		0.251	0.159	0.653	0.943
Factors that trigger symptoms :					
Season change		32.70±12.43	11.80±2.04	16.14±5.40	16.48±5.79
Smoking		35.42±9.90	11.92±2.11	14.83±5.06	15.17±5.54
Life stresses		32.28±12.79	11.32±1.77	17.67±3.84	17.67±4.51
P. value		0.748	0.557	0.271	0.441
The influence of environmental factors					
The Sun	Increase	33.65±10.83	11.62±1.96	16.40±5.41	16.73±5.80
	No effect	32.15±16.70	12.08±2.25	13.80±5.22	14.20±5.85
P. value		0.714	0.492	0.312	0.359
The Sun/Sea	Increase	34.06±8.07	11.82±1.98	16.50±5.25	16.71±5.88
	No effect	32.85±14.29	11.70±2.08	15.68±5.67	16.18±5.80
P. value		0.704	0.837	0.600	0.751

Table (1): Illustrates personal data of experimental and control group. As regards age, the mean age of the study group is 34.70±11.41, while that of control group is 36.70±10.

Regarding gender 66% of the experimental group and 50% of control group are male, while 34% of experimental group and 50% of control group are female.

In relation to marital status, 34% of the experimental group and 28 % of control group are single, while 66% of study group and 72% of control group are married. Regarding residence, 46% of the experimental group and 40% of control group are from rural areas, while 54% of experimental group and 60% of control group are from urban area.

Regarding occupation 74% of the experimental group and 64% of control group are workers. Concerning level of education, the table shows that 40% of the experimental group and 30% of control group graduated from secondary school. There are no significant differences between study and control group regarding personal data.

Table (2): Show that 48% of the experimental group and 50% of control group have a history of starting illness from (10-20) years. Regarding factors that trigger symptoms, 55.4% of experimental group and 60.2% of control group are affected by Season change. There are no significant differences between experimental and control group regarding Clinical data.

Table (3): Shows that 70% of experimental group have high level of climate change worry pre-test, while post-test 68% of experimental group have low level of climate change. Regarding levels of climate change worry there

are highly statistically significant differences in experimental group between pretest and posttest (<0.001*).

Table (4) There are statistically significant differences in experimental group regarding personal data (residence & level of education) and total climate change worry at pretest and posttest (p<0.049 & 0.025) respectively.

Table (5) There are no statistically significant differences between clinical data and total of climate change worry in experimental and control group at pre and post-test

Discussion:

Psoriasis is a debilitating, disfiguring and non-communicable disease. The prevalence of which shows geographic variations, suggesting that it might be influenced by climatic factors such as sun exposure and humidity and with great negative impact on patients' quality of life **(Mahapatra & Shrikrishna, 2023).** There is a significant social, emotional, and physical toll from psoriasis. Frequently, (QoL) is severely compromised. People suffering from psoriasis frequently face disfigurement and incapacity. **(Elbaramony & Ibrahim, 2021).**

Psychiatric nursing intervention increases the chances of long-term recovery in many ways, provides valuable information that helps alleviate worry and provides an opportunity for patients to ask questions even if the subject is difficult or embarrassing **(Graham et al, 2020).**

Relaxation techniques aim to promote or maintain physical fitness. The most common relaxation techniques include progressive muscles relaxation and deep breathing exercises. Relaxation techniques have been recognized as a potential add-on

improvement of climate change worry among psoriasis patients **(Bringmann et al, 2021).**

This study aimed to assess the effectiveness of Psychiatric nursing intervention on climate change worry.

In relation to factors that trigger symptoms, the present study indicated that more than half of psoriasis patients were affected by season change, these results could be attributed to psoriasis had seasonal component as the symptoms increase in winter and fall in summer and springer. These findings are in agreement with **Liang et al,** (**2023)** who evaluate Impact Of Season and Other Factors on Initiation, Discontinuation, and Switching of Systemic Drug Therapy in Patients with Psoriasis and found that more than half of psoriasis patients were affected by Season change .But they are contradicted to study conducted by **El-Komy et al, (2023)** who study Prevalence and Characteristics of Psoriasis among a sample of preparatory school students in rural Egypt and reported that half of psoriasis patients were affected by Season change .

According to the current study, over two thirds of the experimental group experienced extreme levels of worry about climate change pre-test. While, post- test, slightly over half of the control group experienced severe climate change worry, whereas over one-third of the experimental group experienced minimal levels of worry. This could be explained by the fact that, worry is frequently linked to climate change, but when psoriasis patients received intervention, they learned about the effects of climate change and how to relax and reduce worry about climate change, this finding was similar to **Houghton et al, (2021)** who study Correlation between change in psoriasis area and severity index and dermatology life quality index in patients with psoriasis and reported that, more than two thirds of the experimental had severe level of climate change worry pre-program intervention. Regarding post-program intervention, **Linke et al, (2020)** who study Psoriasis and seasonal variation and stated that, more than one third of the experimental group had minimal level of climate change worry while, slightly more than half of control group had severe level of worry , this finding was incongruent with **Horigian et al, (2020)** who evaluate Psychological Therapies and Mind–Body Techniques in the Management of Dermatologic Diseases and reported that, more than half of the experimental and control groups had severe level of climate change worry pre- test. As regard post-program intervention, **Giorgi et al, (2020)** who study Development of a behavior change tool to improve the care and lives of people with psoriasis illustrated that, less than one quarter of the experimental group had minimal level of climate change worry while, more than one third of

control group had severe level of climate change worry.

Regarding to levels of climate change worry, this study reveals that there were statistically significant differences between pretest and posttest in experimental group, this result could be attributed to knowledge from intervention that patients obtained regarding effect of climate change on the symptom and learned how to cope with climate variation. This finding was consistent with **Sun et al (2023),** who study the association between apparent temperature and psoriasis outpatient visits and stated that there were statistically significant differences between levels of climate change worry.

In this study, there were statistically significant differences in experimental group as regard personal data (level of education & residence) and total climate change worry at pre and post - test. This finding could be explained by higher education patients were more knowledgeable about climate change and its effect on psoriasis and living in urban areas increase climate change worry due to high population density and traffic congestion in these areas.

This finding was consistent with **Nicolescu et al (2022),** who assess Prevalence and characteristics of psoriasis and found that statistically significant differences in experimental group related to personal data and total climate change worry. On the other hand, **Moselhy& Abdallah (2022)** who study The Effectiveness of an Educational Program on the Severity and Disability of People with Psoriasis reported that there were no statistically significant differences in experimental group related to personal data and total climate change worry.

In this study, there were no statistically significant differences in experimental group as regard clinical data and total climate change worry at pretest and posttest. This finding was coincided with **Czarnecka et al, (2024)** who assess Clinical and Genetic Factors of Psoriasis and reported that there were no statistically significant differences in experimental group as related to clinical data and total climate change worry. In contrast to **Maddock et al, (2019)** who evaluated mindfulness-based cognitive therapy with psoriasis patients reported that there were statistically significant differences in experimental group related to clinical data and total climate change worry.

Conclusions:

Implementing Psychiatric Nursing intervention improved coping strategies to climate change worry among studied patients.

Recommendations:

Integrating Psychiatric Nursing intervention into the treatment plans for patients with psoriasis and

providing patients with educational materials and counseling sessions to promote patient engagement

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