

The Efficacy of Implementing Nursing guidelines on Chronic Pruritus among Elderly Patients

Noura Mahmoud Mohamed¹, Shima Hassan Abd elfatah², Saieda AbdELhamed Abd ELA ziz³ & Ramadan Saleh⁴

¹ Clinical Demonstrator in the Department of Geriatric Nursing, Sohag University, Egypt

² Lecturer of Geriatric Nursing Faculty of Nursing, Sohag University, Egypt

³ Assistant Professor of Gerontological Nursing, Faculty of Nursing, Assiut University, Egypt.

⁴ Professor of Dermatology, Venereology and Andrology, Faculty of Medicine, Sohag University, Egypt.

Abstract

Background: Chronic pruritus is a common complaint among elderly patients. **Aim:** The study aimed to evaluate the efficacy of implementing nursing guidelines on chronic pruritus among elderly patients. **Methods: Design:** Quasi-experimental research Design was used for this study. **Setting:** The study was carried out at the outpatient clinics of the department of Dermatology, Venereology and Andrology at Sohag University Hospital and outpatient clinics of dermatology at Sohag General Hospital. **Sample:** The study included purposive sample of 80 elderly patients with chronic pruritus during six months (42 experimental & 38 control). **Tools:** Two tools were used to collect data, the first tool was:- Interview questionnaire for personal characteristics & the second tool was:- the 5-D itch scale for assessing severity of pruritus among elderly patients. **Results:** Half of the studied elderly patients were females; the majority of the studied sample had unsatisfactory knowledge, pre-implementation of nursing guidelines. After applying the nursing guidelines, there were statistically significant higher level of knowledge score & the total score of 5 D itching scale in the experimental group as compared to the control groups. **Conclusion:** Nursing guidelines have significant positive impact on improving patient's knowledge and reducing severity of chronic pruritus among elderly patients. **Recommendations:** Elderly patients have to be educated about pruritus, risk factors and methods of prevention.

Keywords: *Chronic pruritus, Elderly & Nursing guidelines*

Introduction

The proportion of people ≥ 60 years old is increasing rapidly worldwide. This may be related to longer life expectancy. According to the World Health Organization, the global population of people aged more than or equal to 60 years old will reach two billions in 2050. In Egypt, there has been gradual increase in the absolute and relative numbers of elderly population over the past few decades. The percentage was 6.9% in 2015 and is expected to reach 20.8% in 2050. Approximately, 20 million Egyptians will be categorized as elderly people by that time (WHO., 2018).

Pruritus is the most common dermatologic problem among older adults. Chronic pruritus can be idiopathic or may be caused by various specific causes, not only from xerosis and dermatologic diseases but also from several systemic disorders. Pruritus can be precipitated by diabetes, arteriosclerosis, hyperthyroidism, uremia, liver disease, cancer, pernicious anemia, and certain psychiatric problems (Chung et al., 2021).

Chronic pruritus can cause deleterious effects including irritation, sleep impairment, disturbances of mood and concentration, altered body image, eating

habits and sexual function, and accompanying disorders such as anxiety, depression and insomnia (Lipman et al., 2021). The Global Burden of Disease project listed pruritus as one of the 50 most common interdisciplinary symptoms leading to high burden levels (Lee et al., 2017).

The nursing guidelines for pruritus consist of nutrition for healthy skin, fundamental of standardized skin care which help in prevention and managing skin dryness and pruritus. Skin care includes skin cleaning with a brief shower or bath for less than 10 minutes with cold or warm water (Kottner et al., 2020). General measures to decrease pruritus through rubbing the skin with pure olive oil help to reduce severity of pruritus among elderly patients. Olive oil is known as "liquid gold." Its use improves health, and pruritus can be treated with molecules found naturally in olive oil which has antioxidant and anti-inflammatory effects (Badiu & Rajendram., 2021).

Nurses are able to offer adequate nursing counseling and intensive education. Educational interventions are applied as a regular portion of the nursing work. The nurse should also look for skin disorders such as rashes, vesicles, scaling, and erythema. The nurse

should inquire about any patterns of behavior that precipitate itching (e.g., anxiety, environmental exposures and friction (Meiner, 2019).

Significance of the study:-

With ageing, the prevalence of pruritus increases from 12.3% in adult people to 20.3% in elderly patients through a working population survey in Germany (Ständer et al., 2010). In the USA, pruritus was found in one-third of elderly people in nursing homes and in 40.6% of elderly African-Americans in the general population (Abeldahab et al., 2021). Pruritus has a great impact on patients' mood. Agitation as consequence of pruritus was reported by 35% of patients with psoriasis (Reich & Szepletowski., 2016).

Aim of the study:

The aim of the study is to evaluate the efficacy of implementing nursing guidelines on chronic pruritus among elderly patients.

Patients and Methods:

Study hypothesis:

Alternative hypothesis: elderly patients who will attend nursing guidelines expected to have decreasing chronic pruritus.

Research design:-

Quasi-experimental research design was used.

Setting:-

The study was conducted at the outpatient clinics of the department of Dermatology, Venereology and Andrology at Sohag University Hospital it's clinics work only 3 days a week. and the outpatient clinics of Sohag General Hospital, that clinics works six days a week. There were two clinics, one for males and the other for females. Every Saturday, Wednesday and Thursday for 6 months, the researcher collected data from out patient clinics of both hospital .

Study sample:

Purposive sample of elderly patients with chronic pruritus who attended the previous mentioned setting for six months, was 98 elderly patients. The patients are divided into two equal groups (experimental and control groups) 49 for each group. Drop out occurred during data collection period. Only 42 experimental & 38 control) continued the study. The control group received the usual hospital routine care only, while the experimental group received the usual hospital routine care and a nursing guidelines.

Inclusion criteria

The patients aged 60 years and above from both sexes had chronic pruritus.

Exclusion criteria:

- Patients with cognitive impairment.
- Patient diagnosed with scabies.

Tools of the study:

Two tools were used for collecting data for this study:

The first tool: structured Interview questionnaire.

It was created by researcher after extensive literature review, written in simple Arabic language and consisted of three parts:-

Part 1: Personal data of participants such as gender, place of **residence**, marital status, level of education and job before retirement.

Part 2: clinical data:-

- Past history of medical diseases such as hypertension, diabetes, cardiovascular disease, liver disease, renal disease, dermatological diseases or allergy from any types of foods or medication.
- Present history of dermatological problems such as infection of skin, inflammation of skin, dryness of skin and pruritus. The duration, severity and factors that decrease or increase patient's pruritus were assessed in all participants.

Part 3: assessment of knowledge of the elderly regarding pruritus It included 13 MCQ questions as following:

what is the skin and its layers this question consist of three items if the elderly patients answers the three items correct. he will take score three from three, what are the functions of skin this question consist of six items, what are the physiological changes that occur in skin among elderly which consist of three items, what is chronic itching and what are the symptoms of chronic itching each question consists of one item, what is the causes of chronic itching among elderly and what is the diagnosis of itching both questions consist of three items, what is the treatment of chronic pruritus and what are the side effect of medication used to treat pruritus the both questions consist of one item, how can we take care of skin among elderly and what is healthy nutrition for healthy skin each questions consist of five items, what are the methods of taking care of skin among elderly this question consist of four items and final question is what is daily skin care that consist of seven items. The total score of knowledge is 43 score.

Scoring system regarding knowledge

Each correct answer by the patient was scored one grade, while no answer or incorrect one was scored zero. The scores obtained of all questions were summed up and then converted into percent score (satisfactory score 50% or more and unsatisfactory less than 50%).

The second tool: The 5-D itch scale

The 5-D itch scale is a reliable, multidimensional measure of itching that has been validated in patients with chronic pruritus to detect changes over time (Lai et al., 2017). It consisted of five dimensions: degree, duration, direction, disability and distribution. Response to each question is rated from 1 to 5 point for duration, degree and direction. For disability, the highest score for each subsection (sleep, leisure/social

activities, housework/errands and work/school) is used. For the distribution of itching, a total of 0-2 site of itchiness equal to 1 point, 3-5 to 2 points, 6-10 sites to 3 points, 11-13 sites to 4 points or 14-16 sites to 5 points (Elman et al., 2011).

Scoring system of 5-D itch scale

The scores of each of the five domains are achieved separately, and then summed up together to obtain a total 5-D score (Lai et al., 2017).

No	Degree	Severity
1	(≤ 8)	No
2	(9-11)	Mild
3	(12-17)	Moderate
4	(18-21)	Severe
5	(≥ 22)	Very severe

Methods

Tools Validity:

The content validity of the tool was done by 2 staff members of gerontological nursing and one consultant dermatologist to examine the content and documentation, validity of the tool, completeness, and clarity of the items of questions. Comments and suggestions were considered.

Tools Reliability: -

Alpha 'Cronbach's test was used to assess the internal consistency of tool, and it was (Cronbach's $\alpha = 0.760$ and, for the 5D itching scale.

Pilot study:

Pilot study was carried out before starting data collection on 10% of elderly patients in a selected setting to examine the applicability, the feasibility and clarity of the developed tools, and to estimate the time needed. The data obtained from the pilot study were analyzed. No modifications were done, so patients who were involved in the pilot study were included in the final analysis.

Field of work

The study was conducted through four phases (assessment, planning, implementation and evaluation phase). The study started on the first of August 2020 and ended at the end of April 2021; assessment & interviewing, planning and implementation phases took 6 months plus the evaluation phase for 3 months.

Assessment & interviewing phase:-

- Elderly patients with chronic pruritus who fulfilled the inclusion criteria were interviewed individually by the principle researcher in the outpatient clinic of Dermatology. The researcher explained the purpose of the study.
- The interview took around 30 -40 minutes.
- The assessment was done in all the study sample 98 patients (experimental group and control group) using study tools (Pre-test) to obtain base line data concerning their demographics, health status, knowledge about pruritus and severity of pruritus.

- 18 patients dropped out during data collection leaving 80 elderly patients (42 experimental & 38 control).

- The phone numbers of all elderly patients who accepted to participate were taken to arrange for nursing guideline session.

Planning phase:-

- The arrangement of conducting the nursing guidelines was done during this phase. The sessions and time of the guideline were decided.
- **Teaching time:** the time of teaching was decided according to the coordination between the researcher and each elderly patient individually. The total time for each patient was nearly about 3-4 hours.
- **Teaching place:** the clinics provide special place to apply guidelines which was calm and comfortable for patients.
- **Teaching methods and materials:** The researcher prepared an educational brochure, pictures on the computer and demonstrations.

Phase II: Implementation phase.

- The researcher collected data three days per week, 3 hours each day from 9 am to 12 pm, and the number which was interviewed was 1-2 elderly patients per day.
- Patients in the experimental group received routine skin care and nursing guidelines. The patients were given a brochure & olive oil and informed to rub their skin with olive oil twice a day for 3 months and then they were reassessed.
- The control group received routine care of medication for only 3 months and then they were reassessed.
- The nursing guidelines were given in 7 sessions (Knowledge , practical and follow up). The length of session in every visit ranged from 15 to 20 minute depending upon their understanding and response. The total time of sessions ranged from 3 to 4 hours.

Phase III: Evaluation phase.

- Immediate post-test was done after applying the nursing guidelines to evaluate knowledge and practice through using the study tool (post-test).
- Follow up post-test was done after every month for 3 months to determine the effect of nursing guidelines on severity of pruritus in both the experimental and control groups.
- The drop out during data collection period included 7 /49 in experimental group (4 patients died & 3 patients due to loss of contact) and 1149 / of the control group (6 patients died & 5 patients due to loss of contact).

Ethical Consideration

Research proposal was approved by Ethical Committee at the Faculty of Nursing, Assiut University. An official access was obtained for the departments of Dermatology at Sohag University Hospital and Head of Sohag General Hospital. Patients were informed that their participation is voluntary and they have the right to withdraw from the study at any time. There was no risk for study subjects during the application of the research. Patients were told of their right to withdraw from the study at any point. Confidentiality and anonymity were assured. Patients coded for data entry so that

their names could not be identified. Informed consents were obtained from all patients after explaining of the study purpose.

Statistical analysis: Data entry and data analysis were done using Excel 2016 program and SPSS version 22 (Statistical Package for Social Science) respectively. Qualitative variables were presented as frequencies and percentages and compared by using chi-square test and fisher exact test. Quantitative variables were presented as means \pm standard deviation (SD) and were compared by independent student t- test & Anova test. Pvalue was considered statistically significant at $P < 0.05$.

Result:**Table (1): Personal data of the studied elderly patients (N= 80)**

Personal data	Control group (n= 38)		Experimental group (n= 42)		P-value
	No.	%	No.	%	
Gender:					
Male	16	42.1	18	42.9	0.946
Female	22	57.9	24	57.1	
Age: (years)					
60 < 65	24	63.2	20	47.6	0.163
≥ 65	14	36.8	22	52.4	
Mean \pm SD	64.24 \pm 3.98		65.57 \pm 4.33		0.156
Place of residence:					
Rural	32	84.2	37	88.1	0.614
Urban	6	15.8	5	11.9	
Marital status:					
Married	23	60.5	17	40.5	0.222
unmarried	15	39.5	24	57.2	
Level of education:					
Illiterate	24	63.2	30	71.4	0.419
Basic education	10	26.4	7	16.7	
High school	4	10.5	3	7.1	
University	0	0.0	2	4.8	
Job before retirement:					
Employee	4	10.5	1	2.4	0.294
Farmer	10	26.4	11	26.2	
Free business	3	7.9	5	11.9	
Housewives	21	55.2	25	59.5	

*Chi-square test**Independent samples t-test*

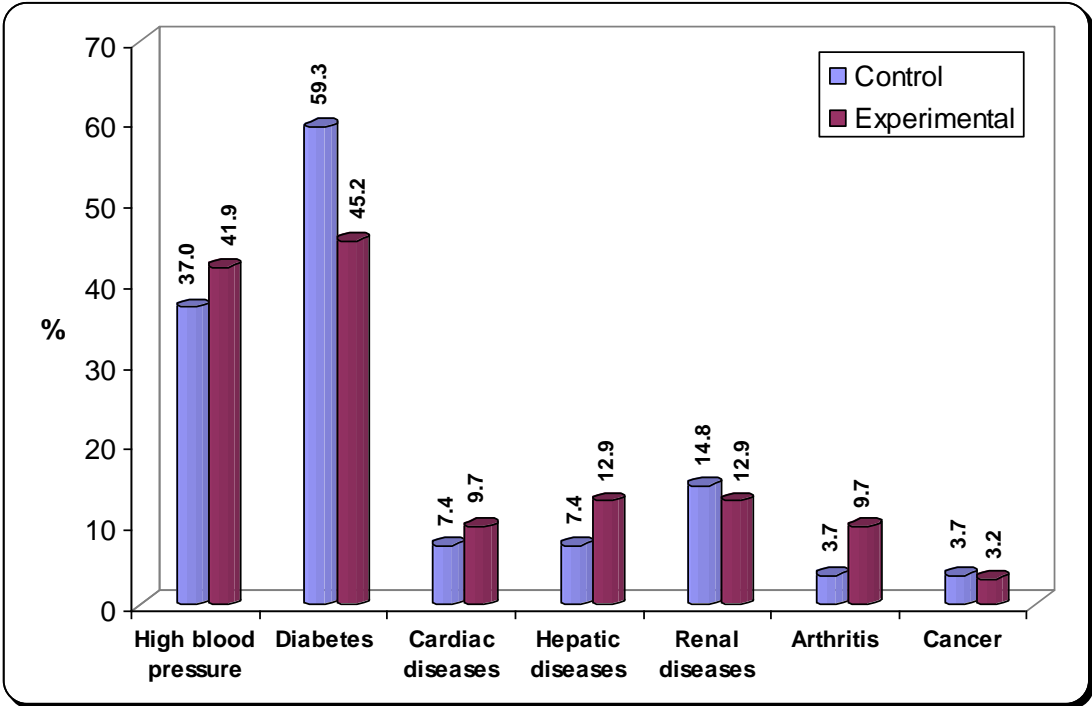


Figure (1): Chronic diseases among the studied elderly patients

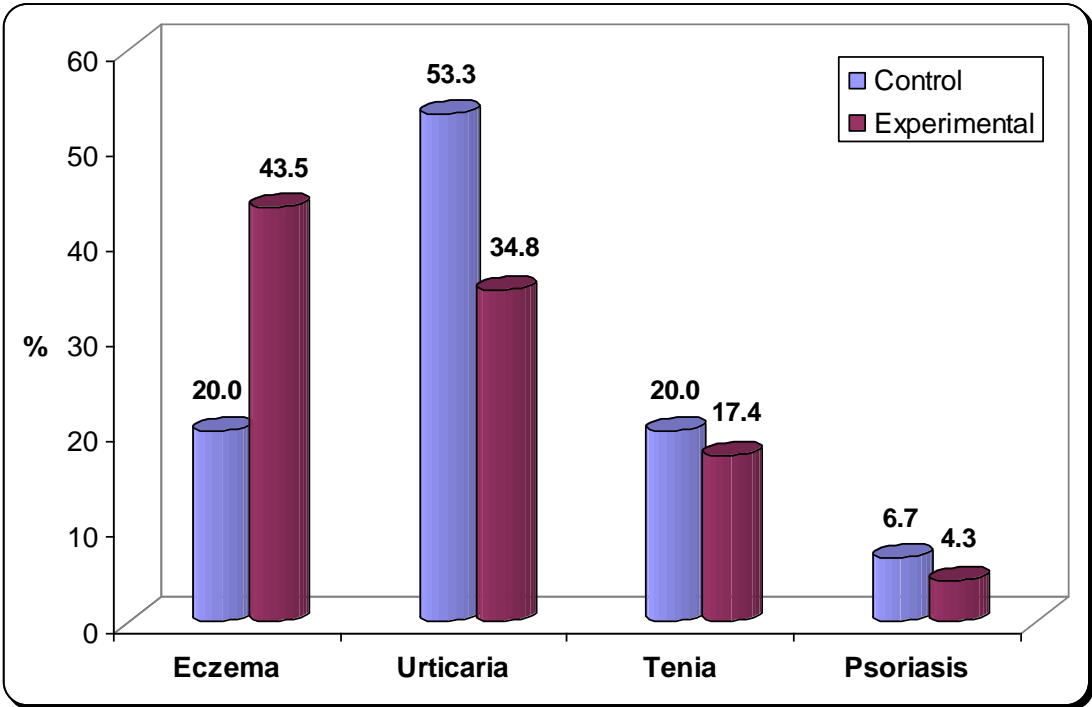


Figure (2): Types of dermatological diseases among studied elderly patients

Table (2): Level of knowledge about skin pruritus among studied elderly patients n=80

Knowledge level	Control group(n= 38)				P-value	Experimental group(n= 42)				P-value
	Pre-test		Post-test			Pre-test		Post-test		
	No.	%	No.	%		No.	%	No.	%	
Unsatisfactory	38	100.0	38	100.0	1.000	41	97.6	12	28.6	0.000*
Satisfactory	0	0.0	0	0.0		1	2.4	30	71.4	
Mean \pm SD	3.18 \pm 1.12		3.04 \pm 0.96		0.762	3.45 \pm 1.60		21.93 \pm 4.19		0.000*

Fisher Exact test

*p value < 0.05 is significant

Table (3): Total score of itching among studied elderly patients n=80

Total score of itching	Control group (n= 38)	Experimental group (n= 42)	P-value ¹
	Mean \pm SD	Mean \pm SD	
Pre-test	17.84 \pm 1.76	18.31 \pm 1.85	0.253
After 1 month	15.89 \pm 1.98	14.57 \pm 2.13	0.005*
After 2 months	13.76 \pm 1.88	11.48 \pm 1.78	0.000*
After 3 months	11.97 \pm 1.95	7.52 \pm 1.64	0.000*
P2	0.000*	0.000*	
P3	0.000*	0.000*	
P4	0.000*	0.000*	

Independent samples t-test

Paired samples t-test

P1: Comparison between groups

P2: Comparison between pre-test and after 1 month

P3: Comparison between pre-test and after 2 months

P4: Comparison between pre-test and after 3 months

*p value < 0.05 is significant

Table (4): Comparison between pre and post nursing guidelines regarding the degree of 5-D itch scale of the studied elderly patients n=80

5-D itch scale	Total score of itching	Control group (n= 38)		Experimental group (n= 42)		P-value
		No.	%	No.	%	
Pre-guideline	No (\leq 8)	0	0.0	0	0.0	0.108
	Mild (9-11)	0	0.0	0	0.0	
	Moderate (12-17)	16	42.1	11	26.2	
	Severe (18-21)	22	57.9	28	66.7	
	Very severe (\geq 22)	0	0.0	3	7.1	
After 1 month From implementing guidelines	No (\leq 8)	0	0.0	0	0.0	0.125
	Mild (9-11)	2	5.3	6	14.3	
	Moderate (12-17)	27	71.1	32	76.2	
	Severe (18-21)	9	23.7	4	9.5	
	Very severe (\geq 22)	0	0.0	0	0.0	
After 2 months from guidelines	No (\leq 8)	1	2.6	1	2.4	0.000*
	Mild (9-11)	3	7.9	21	50.0	
	Moderate (12-17)	34	89.5	20	47.6	
	Severe (18-21)	0	0.0	0	0.0	
	Very severe (\geq 22)	0	0.0	0	0.0	
After 3 months from guidelines	No (\leq 8)	2	5.3	32	76.2	0.000*
	Mild (9-11)	12	31.6	10	23.8	
	Moderate (12-17)	24	63.2	0	0.0	
	Severe (18-21)	0	0.0	0	0.0	
	Very severe (\geq 22)	0	0.0	0	0.0	

Chi-square test

*p value < 0.05 is significant

Table (5): Distribution of score of knowledge after nursing guidelines according to the personal data of the studied elderly patients (n=80)

Personal data	Knowledge score	
	Control group (n=38)	Experimental group (n=42)
	Mean ± SD	Mean ± SD
Age: (years)		
< 65	3.21 ± 2.34	3.85 ± 4.25
≥ 65	3.14 ± 1.75	3.09 ± 2.96
P-value	0.928	0.502
Gender:		
Male	4.19 ± 2.64	4.39 ± 5.03
Female	2.45 ± 1.26	2.75 ± 1.80
P-value	0.011*	0.147
Place of residence:		
Rural	3.09 ± 2.02	3.46 ± 3.78
Urban	3.67 ± 2.73	3.40 ± 2.07
P-value	0.550	0.973
Marital status:		
Married	3.09 ± 1.95	4.53 ± 4.53
Unmarried	3.23 ± 2.18	14.76 ± 10.06
P-value	0.792	0.000*
Level of education:		
Illiterate	2.46 ± 1.38	2.33 ± 1.27
Basic education	3.50 ± 1.65	3.43 ± 2.15
High school	6.75 ± 3.30	5.67 ± 3.21
University	--	17.00 ± 4.24
P-value	0.000*	0.000*
Job before retirement:		
Employee	6.75 ± 3.30	14.00 ± 0.00
Worker	2.60 ± 1.71	2.91 ± 2.21
Free business	4.67 ± 2.31	5.80 ± 7.98
Housewives	2.57 ± 1.16	2.80 ± 1.78
P-value	0.000*	0.005*

Independent samples t-test

ANOVA test

*p value < 0.05 is significant

Table (6): Distribution of total score of itching after nursing guidelines according to the personal data of studied elderly patients (n=80)

Personal data	Total score of itching	
	Control group (n=38)	Experimental group (n=42)
	Mean ± SD	Mean ± SD
Age: (years)		
< 65	17.54 ± 1.50	17.70 ± 2.05
≥ 65	18.36 ± 2.10	18.86 ± 1.49
P value	0.172	0.041*
Gender:		
Male	17.63 ± 2.16	18.28 ± 1.36
Female	18.00 ± 1.45	18.33 ± 2.18
P value	0.525	0.925
Place of residence:		
Rural	17.88 ± 1.72	18.14 ± 1.69
Urban	17.67 ± 2.16	19.60 ± 2.70
P value	0.795	0.098
Marital status:		
Married	18.09 ± 1.76	18.12 ± 2.39
Unmarried	14.29 ± 2.69	12.39 ± 4.18
P value	0.000*	0.000*

Personal data	Total score of itching	
	Control group (n=38)	Experimental group (n=42)
	Mean \pm SD	Mean \pm SD
Level of education:		
Illiterate	18.04 \pm 1.71	18.40 \pm 1.65
Basic education	17.90 \pm 1.85	17.29 \pm 1.98
Secondary	16.50 \pm 1.73	20.67 \pm 2.08
University	--	17.00 \pm 1.41
P value	0.274	0.038*
Job before retirement:		
Employee	16.50 \pm 1.73	18.00 \pm 0.00
Worker	18.40 \pm 2.17	18.45 \pm 1.44
Free business	17.33 \pm 2.52	18.00 \pm 1.58
Housewives	17.90 \pm 1.41	18.32 \pm 2.14
P value	0.318	0.974

Independent samples t-test

ANOVA test

*p value < 0.05 is significant

Table (7): Distribution of total score of itching after nursing guidelines according to the medical history of the studied elderly patients (n=80)

Medical history	Total score of itching	
	Control group (n=38)	Experimental group (n=42)
	Mean \pm SD	Mean \pm SD
Chronic diseases:		
Yes	17.70 \pm 1.98	18.35 \pm 1.45
No	18.18 \pm 1.08	18.18 \pm 2.79
P value	0.456	0.794
Dermatological diseases:		
Yes	18.53 \pm 1.19	18.13 \pm 2.36
No	17.39 \pm 1.95	18.53 \pm .96
P value	0.050	0.498
Medications:		
Yes	17.68 \pm 1.94	18.35 \pm 1.45
No	18.30 \pm 1.06	18.18 \pm 2.79
P value	0.346	0.794
Allergy from any types of foods or medication:		
Yes	17.80 \pm 1.90	18.22 \pm 1.76
No	17.87 \pm 1.71	18.42 \pm 2.01
P value	0.907	0.728
Number of medications:		
One	18.00 \pm 1.73	18.75 \pm 2.12
Two	17.79 \pm 1.80	18.21 \pm 1.81
P value	0.763	0.462

Independent samples t-test

*p value < 0.05 is significant

Table (1): Shows that the age of studied elderly patients ranged from 60 years to more with mean \pm SD (64.24 \pm 3.98 & 65.57 \pm 4.33) for the control and the experimental groups respectively, more than half of them (57.9% & 57.1%) are females, the majority of studied elderly patients in both groups have lived in rural areas. Regarding marital status (60.5% & 42.9%) of control and experimental groups respectively have married. Regarding the level of

education (63.2% & 71.4%) of control and experimental groups respectively are illiterate. More than one quarter of them are farmers.

Figure (1): Represents that the most common disease among studied elderly patients is diabetes, followed by hypertension, while only (3.7% & 3.2%) of them in the control and the experimental groups respectively has cancer.

Figure (2): Reveals that more than half (53.3%) of studied patients in the control group have urticaria. Nearly, one third of the studied patients in the experimental group have urticaria and less than half (43.5%) of the studied patients in the experimental group have eczema.

Table (2): Illustrates that there is no significant statistical difference in the control group, pre and post nursing guidelines ($P = 1.000$). There is highly significant difference in the experimental group ($p=0.000$).

Table (3): Shows that there are no significant statistical differences before nursing guidelines ($P=0.25$) of total score of 5-D itch scale and after implementing nursing guidelines, there is highly significant difference after nursing guidelines after the first, the second and third month ($=P 0.005, 0.000, 0.000$ respectively) in the experimental group.

Table (4): Clarifies that there are no significant statistical differences between both groups ($P = 0.108$ & 0.125) pre-guideline & after the first month, respectively. After implementing nursing guidelines, there is highly significant difference after the second and the third month ($P= 0.000, 0.000$ respectively).

Table (5): Shows that there is statistically significant difference between knowledge, level of education, job before retirement of control and experimental group ($P = 0.000, 0.000, \& 0.000, 0.005$ respectively). Whereas in control group there is statistically significant difference between gender and the total score of knowledge ($P = 0.011$). In the experimental group, there is statistical significant relationship between marital status and total score of knowledge ($P=0.000$). There is no statistical significant difference between age and place of residence of both groups.

Table (6): Illustrates that there is statistically significant difference between marital status and total score of itching of control and experimental groups ($p= 0.000$ & 0.000 respectively). There is statistically significant difference between age and the level of education and the total score of itching of experimental group ($p= 0.041$ & 0.038 respectively). There is no statistically significant difference between total score of itching and gender, place of residence and job before retirement among the studied elderly patients.

Table (7): Shows that there is no statistically significant difference between the score of itching and all items of medical history.

Discussion

Pruritus is considered the most common skin disorder in the geriatric population (Clerc & Misery., 2017). Chronic pruritus lasting longer than 6 weeks, affects almost one fifth of the general population, and more

than half of the adults (65 years of age and older) leading to great impairment of quality life (Huet & Misery., 2020).

In the present study, the percentage of elderly females was higher than male. From the researcher's point of view, this finding may be due to the elderly females being more exposed to aggravating factors at home such as use of soap, hygiene products and detergents. This result is similar to the study by Gazerani & Petersen., (2019) that investigated senile pruritus among Danish elderly living in nursing homes and reported that more than two thirds of the studied sample were females. On the other hand, this result differs from Nuzulsari et al., (2016-2018) a study conducted in Indonesia and reported that more than three fifths of the studied sample were males.

The current study explained that the majority of studied elderly patients lived in rural areas. This may be because most areas in Sohag were rural and the elderly are farmers that may affect their skin and lead to pruritus. This finding is in accordance with El-Hamd et al., (2020), who studied skin disorders among 808 elderly patients.

Regarding marital status, it was observed that the majority of the studied patients were married. This result matches with the result of Yong et al., (2020) who studied generalised pruritus among community-dwelling older adults in Malaysia and found that more than three fifths of the studied elderly people were married.

Concerning the level of education, the majority of the studied patients were illiterate. Garbaccio et al., (2016) who conducted study about self-skincare knowledge and practice described by elderly persons in the mid-west of Minas Gerais Juliana, and found that more than three quarters of the study sample had primary education.

Regarding chronic diseases, the current study found that the highest percentage of the studied patients had diabetes mellitus. This may be because pruritus was a sign associated with diabetes mellitus. This finding was similar to a study done by El-Hamd et al., (2020) who found that the most common comorbidity to be diabetes mellitus in elderly patients. An institution-based cross-sectional study in Taiwan concluded that generalized pruritus is considered as a sign of diabetes (Tseng et al., 2015). Another study was done by Jacob et al., (2016) on prevalence of chronic diseases among older patients in German general practices and found diabetes mellitus as the most common disease among pruritic patients.

Concerning patient's total score of knowledge about pruritus, the present study revealed that the majority of the studied sample had unsatisfactory knowledge before implementing guidelines while after

implementing nursing guidelines they had satisfactory knowledge in the experimental group. From the researcher's point of view, this result might be due to the effectiveness of nursing guidelines to improve patient's knowledge. This finding was in accordance with **Al-Kotb & Abdel-Aziz., (2017)**. Who conducted a study on the effect of standardized skin care guidelines on skin dryness among elderly people at Ismailia City, and revealed that total knowledge score was significantly following implementation of standardized skin care guidelines.

Regarding baseline 5 D- itch score, the current study reported that for degree, 13.2% of patients had moderate pruritus, while for direction nearly half of the studied patients reported unchanged pruritus. Concerning disability, about one third of patients frequently had delayed falling asleep, whereas the majority of studied patients were rarely affected leisure/social activities. For distribution majority of the patients reported thighs, legs, forearms, arms and abdomen as the most common sites of pruritus. **Takahashi et al., (2018)** used the Japanese version of the 5-D itch scale for rating pruritus experienced by patients undergoing hemodialysis and found that 13.7% of patients reported moderate degree. For direction, slightly more than two fifth of the studied patients reported unchanged pruritus. Half of the patients reported back, followed by head/scalp, abdomen, and lower legs. There was statistically significant difference in improvements of pruritus in the experimental group compared to control group after 3 months of implementing nursing guidelines.

The current study found that there was significant positive correlation between total score of itching and level of education of the studied elderly patients. From the researcher's point of view, this may because the level of education affect the awareness of methods that decrease pruritus. This finding is in accordance with **Altinok Ersoy & Akyar., (2019)** who mentioned that there was significant relation in their study between total score of itching and the educational level of study sample.

Conclusion:

Based on the study findings, it is concluded that the knowledge and practice regarding chronic pruritus among elderly patients before implementing the nursing guidelines were unsatisfactory. After applying of nursing guidelines for elderly patients with chronic pruritus they have positive effect on improving knowledge and reducing the severity of pruritus among elderly.

Recommendations:

Based on the result of the present study, the following recommendations are suggested:

- Continuous educational programs for patients with chronic pruritus should be applied periodically to improve knowledge and decrease severity of pruritus for those patients.
- Home visits and telephone follow up are very essential to manage chronic pruritus among elderly patients.
- Further research in application of nursing guidelines should be incorporated into wide health services to reduce skin diseases among elderly patients.

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