



The Impact of Xerosis Cutis Severity on Quality of Life of Elderly

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ABSTRACT

Background: Xerosis cutis occurs more frequently in elderly. This disease is associated with reduced quality of life. This study aimed to determine the impact of xerosis cutis severity on elderly patients' quality of life. **Methods:** The goal of this cross-sectional observational analytical study was to analyze the impact of xerosis cutis severity on the quality of life of elderly patients. The study was conducted at the outpatient unit clinic of Dermatovenereology Department, Dr. Soetomo General Hospital, Surabaya, Indonesia. This study included a total of 36 elderly patients. We assessed the severity of Xerosis cutis using the Xerosimeter score, and evaluated the quality of life using the Dermatology Life Quality Index (DLQI). **Result:** The majority of elderly patients with xerosis cutis had moderate severity with 22 patients (61.10%) and reported a moderate impact on quality of life with 17 patients (47.20%). The severity of xerosis cutis was also significantly correlated with quality of life ($P < 0.000$). **Conclusion:** There is a significant, directly proportional relationship between the severity of xerosis cutis and quality of life, with the severity having a greater impact on quality of life.

Keywords: Xerosis cutis, elderly, severity, human and disease.

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BACKGROUND

One of the most prevalent skin disorders that can affect the elderly is xerosis cutis. This condition is considered to be part of the skin's physiological aging process.¹ Aging increases its incidence and severity.² It is a common condition that could affect approximately 75% of the elderly population.³

Xerosis cutis could cause cosmetic problems and affect the patient's quality of life. Xerosis cutis may cause complaints such as itching, stinging sensation, and a feeling of tightness of the skin. This is also the most common cause of generalized pruritus in the elderly population. Some diseases, such as chronic kidney failure, diabetes mellitus, and hypothyroidism, or other chronic diseases, can also cause xerosis cutis. Changes in skin conditions in older people with complaints of xerosis cutis tend to develop with age. These changes can be associated with chronological aging and sun damage (photoaging).^{2,4,5}

Because of the pain and skin excoriation caused by scratching, which impacts social function and sleep patterns, xerosis cutis intensity and pruritus are believed to damage the quality of life of patients. Previous research has shown a strong correlation between pruritus, xerosis cutis, and patients' quality of life.⁶ However, studies on patients with xerosis cutis and their severity level are scarce, particularly in elderly patients. This study was to determine how the severity of xerosis cutis affected the quality of life of older patients.

METHODS

Study design a cross-sectional investigation was conducted. Examining how severe xerosis cutis affects the quality of life of older people was the goal of this observational analytical study. The research took place at Dr. Soetomo General Hospital's outpatient unit clinic

in Surabaya, Indonesia, in the Dermatovenereology Department.

The study population and sample consisted of elderly patients with xerosis cutis. The study sample consisted of elderly patients with xerosis cutis who met the inclusion criteria. Patients were considered for inclusion in this study if they met the following criteria: they had to be between the ages of 60 and 74, suffer from pruritus or itching, dry or tight skin, scaling, fissures, or erythema from other underlying diseases; they also had to be free of mental status disorders or intellectual function; and finally, they had to be willing to participate in the study and sign an informed consent document. This study excluded individuals with inflammatory skin illnesses that could affect the pH level measurement region in widespread dermatoses, as well as those who had used corticosteroid therapy in the previous two weeks.

The study presedure researcher briefed the patient or guardian on the study's goals and methodology. If they agreed to be a study subject, the patient/guardian was required to fill out and sign an informed consent. We recorded basic data, took a history, conducted a physical examination, and assessed the severity of xerosis cutis using a xerosimeter score. The patient also filled out the Dermatology Life Quality Index (DLQI) sheet.

We use a xerosimeter score to assess the severity of xerosis cutis. The xerosimeter allows clinicians to determine treatment based on individual symptoms and assess disease progression in a structured manner. It is a symptom-based and evidence-based approach that encompasses a diagnostic and therapeutic map of xerosis cutis and aims to raise awareness of prevention and early treatment of this condition.^{5,7} Some of the visible symptoms may include redness, fissures or hemorrhages, and scaling. Each study subject's skin would undergo measurements based on two specific regions: the volar area and the lower extremity area. Before conducting the measurement, we cleaned the skin area by moistening gauze with normal saline and leaving it to dry. Subjective symptoms include complaints of itching on the patient's skin. The patient received score ranging from 0 to 4 (0: normal, 1: mild, 2: moderate, 3: severe, and 4: very severe).

The Dermatology Life Quality Index (DLQI) is a questionnaire comprising of 10 questions that assess the influence of the disease on fundamental aspects of the patient's life. It is used in adults aged over 16 years and has the advantage of being easy to understand, quick, and simple for patients.⁸ The DLQI divides these questions into six categories: symptoms and emotions

(questions 1 and 2), daily activities (3 and 4), leisure time (5 and 6), work and studies (7), personal relationships (8 and 9), and medication (10). The DLQI also provides an overall score that reflects the patient's overall quality of life. Each question in the DLQI questionnaire falls into one of four response categories ("not at all," "a little," "a lot," and "very much"), and its evaluation is based on a Likert scale that spans from 0 to 3. The DLQI (Dermatology Life Quality Index) is a comprehensive measure that assesses the impact of skin conditions on an individual's quality of life. We calculate it by summing the scores of all the questions, yielding a range from 0 to 30. Higher scores on the DLQI indicate a more negative impact on the individual's quality of life. The scoring system ranges from 0 to 30, with different ranges indicating varying levels of effect: 0–1 (no effect), 2–5 (little effect), 6–10 (moderate effect), 11–20 (big effect), and 21–30 (very large effect).

Data analysis we entered the data into the computer using Microsoft Excel 2010, then processed it using SPSS version 26. All data were statistically examined using the chi-square test and provided in table form. Our criteria for determining the significance of the results is a p-value < 0.05.

RESULT

Patient's demography in this study, the total number of patients included was 36. Most of the patients were female and now work as housewives. Table 1 shows that 36 patients were part of this investigation. Females were the predominant gender in 28 cases, or 77.80% of the total. The study included patients ranging in age from 61 to 74 years, with an average age of 68.56 ± 4.35 years.

Table 1. Demography of elderly xerosis cutis patients

Sex	Total (n)	Percentage (%)
Male	8	22.20
Female	28	77.80

Severity of disease and quality of life in this study most of the patients had moderate severity of xerosis cutis, with 22 patients (61.10%). There were no patients diagnosed with severe or very severe of xerosis cutis (Table 2). Most patients reported a moderate effect on quality of life, with 17 patients (47.20%). No patient reported a large or very large effect on quality of life (Table 3).

When asked about the relationship between severity and quality of life (QoL), 11 patients (78.60%) who had modest severity claimed that it had no impact on their quality of life (Table 4). Most patients with moderate severity of xerosis cutis reported a moderate effect on quality of life with 17 patients (47.20%). Statistical tests using the chi-square test found that xerosis cutis severity was significantly related to quality of life ($p < 0.000$), and the greater the severity, the greater the effect on quality of life.

Table 2. The severity of xerosis cutis among elderly patients

Severity Degree	Total (n)	Percentage (%)
Mild	14	38.90
Moderate	22	61.10
Severe	0	0.00
Very severe	0	0.00

Table 3. Quality of life of elderly xerosis cutis patients

DLQI	Total (n)	Percentage (%)
No effect	13	36.10
Small effect	6	16.70
Moderate effect	17	47.20
Large effect	0	0.00
Very large effect	0	0.00

DLQI : Dermatology Life Quality Index

Table 4. The impact of severity on the quality of life of elderly xerosis cutis patients

		DLQI			Total	P Value
		No Effect	Small Effect	Moderate Effect		
Xerosis Cutis Severity	Mild	11(78.6%)	3(21.4%)	0(0.0%)	14(100.0%)	<0.000*
	Moderate	2(9.1%)	3(13.6%)	17(77.3%)	22(100.0%)	
Total		13(36.1%)	6(16.7%)	17(47.2%)	36(100.0%)	

Note *: significant, DLQI : Dermatology Life Quality Index

DISCUSSION

In this study, most of patients had moderate severity of xerosis cutis, with 22 patients (61.10%). A random sampling of 10 long-term care institutions in Berlin was consistent with these findings. Nearly all of the 223 residents (99.1%) had some kind of skin infection. We used the Overall Dry Skin (ODS) score, a five-point scale from '0' (no dryness of the skin) to '4'

(skin roughness, big scales, inflammation and cracking), to assess skin dryness. They reported a mean forearm ODS of 1.7 ± 0.8 in women and 1.8 ± 0.9 in men. The mean ODS for lower limb was 2.1 ± 1.0 in women and 2.1 ± 1.0 in men.⁹ The difference in results was due to the fact that the current study used a Xerosimeter to evaluate objective and subjective symptoms, so the reported results may be different.

Most patients reported a moderate effect on quality of life, with 17 patients (47.20%) in the current study. This one found comparable outcomes to a French prospective observational study that ran from 2017 to 2018. A total of 126 dermatologists working out of private practices participated in this study. The researchers discovered a moderate impact on the subjects' quality of life, with an average DLQI score of 5.3.¹⁰ Xerosis cutis might cause cosmetic problems and could affect the patient's quality of life. Xerosis cutis may cause itching, a stinging sensation, and a feeling of tightness on the skin. This is also the most common or highest cause of generalized pruritus in elderly people.^{2,11}

An association between the severity of xerosis cutis and quality of life was discovered in the present study ($p < 0.000$), with a stronger relationship observed for more severe cases. In xerosis cutis, experts think the ODS score should take into account the possibility of a decline in quality of life. Neither the total score involving several symptoms (SRRC or Günther et al.) nor the evaluation of the afflicted body surface area (BSA) provide a reliable method for determining the overall severity of xerosis cutis or selecting individual treatments, according to experts. The BSA and total score do not take into account factors that may significantly impact quality of life, such as extremely dry skin on the face, hands, and feet.⁷ This study used a Xerosimeter, which included objective and subjective components such as the presence of scaling, fissures, erythema, pruritus, BSA, use of fingertip units per application, and monthly moisturizer requirements. Increasing the weight of these components will have an impact on reducing the patient's quality of life.^{12,13}

There were a number of restrictions on this study. Firstly, the cross-sectional nature of this study precluded consideration of the long-term impact of xerosis cutis on quality of life. Future research could be conducted to ascertain long-term effects of xerosis cutis using cohort studies. Second, the current study did not evaluate other factors such as transepidermal water loss (TEWL) and stratum corneum (SC) capacitance values, leaving their influence on xerosis cutis in elderly patients unknown. As aging occurs, the

dermis experiences an increase in TEWL. Decreased water retention capacity of the SC in the epidermis is also another cause of xerosis cutis.¹⁴

The conclusion in this study found that most elderly patients with xerosis cutis had a moderate level of severity and had a moderate impact on their quality of life. There is a strong association between the severity of xerosis cutis and its impact on quality of life. As the severity increases, so does the negative impact on quality of life.

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