Journal of Advanced Zoology

*ISSN: 0253-7214*

*Volume **44** Issue **S-2 Year 2023** Page **509:518***

# PRURITIC DERMATOSES AMONG THE ELDERLY: IMPACT ON QUALITY OF LIFE AND IMPLICATIONS FOR GERIATRIC DERMATOLOGY

**Dr Balkrishna Nikam**

Associate Professor, Department of dermatology, Krishna Institute of Medical Sciences, Krishna Vishwa Vidyapeeth, Karad , Email ID- mangeshnikam@yahoo.com

**Dr Neha Prahlad Deokar**

Resident, Department of dermatology, Krishna Institute of Medical Sciences, Krishna Vishwa Vidyapeeth, Karad , Email ID- n.deokar1412@gmail.com

**Dr Jamale Varsha**

Associate Professor, Department of dermatology, Krishna Institute of Medical Sciences Krishna Vishwa Vidyapeeth, Karad , Email ID- jamalevarsha@gmail.com

**Article History**
Received: 24 Aug 2023
Revised: 26 Sept 2023
Accepted: 05 Oct 2023



**ABSTRACT –**

**Background:** Itching, or pruritus, is a frequent problem in the elderly that has a big impact on their everyday lives. The frequency, trends, and effects of pruritic illnesses on the quality of life in older people are examined in this study, highlighting the many difficulties this population faces.

**Materials and Methods:** 200 individuals 60 years of age and older who complained of pruritus participated in the study, which was conducted between February 2021 and July 2022 at Krishna Hospital in Karad. Clinical evaluations that were in-depth were carried out, including histories, skin checks, and medical histories. The effect of pruritus on quality of life was assessed using the Dermatology Life Quality Index (DLQI) questionnaire.

**Results:** 10.10% of the 1980 senior citizens who visited the outpatient department had pruritus. 55% of individuals reported having chronic pruritus. The quality of life was considerably damaged by dermatological problems (IFSI category 1), with 57% reporting a moderate impact. In 13 individuals, chronic pruritus was associated with significant impairment, highlighting the serious consequences.

**Conclusion:** The study shows that elderly people had a 10.10% prevalence of pruritic dermatoses. The most prevalent conditions, which adversely impacted patients in IFSI category 1, were fungus infections and scabies. Chronic itch significantly reduced quality of life. The importance of treating pruritic illnesses for improving elderly people's quality of life highlights the demand for specialized geriatric clinics and gerontodermatology as a specialty.

**Keywords:** Chronic pruritus, geriatric dermatology, DLQI, IFSI classification, specialized geriatric clinics, pruritic dermatoses, elderly.

**INTRODUCTION –**

Pruritus, medically known as itching, is an uncomfortable skin sensation often accompanied by the urge to scratch. It can be acute, lasting briefly, or chronic, persisting for six weeks or more, as defined by the International Forum for the Study of Itch (IFSI). Among older adults, chronic pruritus is widespread and significantly hampers their ability to work, sleep, and carry out daily tasks. As the elderly population grows, so does the prevalence of pruritus, necessitating customized management strategies ***(Valdes-Rodriguez et al., 2015).***

In the context of aging, pruritus is connected to various factors, including skin conditions, systemic diseases, neurological problems, psychological factors, and adverse reactions to medications. A complicated biological process called aging involves long-term, progressive molecular degradation. The skin acts as an early warning sign of these alterations since it is visible ***(Yalcin et al., 2006).*** The geriatric population is defined by the World Health Organization (WHO) as those 60 and older. An organism's structure and function gradually deteriorate with age, which affects how well it can communicate with and react to its surroundings. Both intrinsic (genetic) and extrinsic (environmental) aging processes make the skin of the elderly more vulnerable to various skin issues ***(Valdes-Rodriguez et al., 2015).***

Importantly, pruritus is not limited by age and can affect individuals of all ages, especially the elderly, regardless of the presence of visible skin abnormalities. Research studies have shown a wide range in the prevalence of pruritus among elderly patients, from 11% to 78%. This condition significantly disrupts sleep patterns and overall quality of life, affecting not only physical health but also mental well-being ***(Grundmann & Ständer, 2011).*** Skin disorders, extending beyond their immediate physical impact, have a substantial influence on mental health, social interactions, daily routines, and the overall quality of life of those affected ***(Erturk,, 2012, Gurel et al., 2005).***

The main objective of the present study is to thoroughly examine the complex patterns of pruritic disorders among elderly individuals visiting dermatology outpatient departments. By comprehensively understanding these patterns and their multifaceted impact on the quality of life of the elderly, researchers and healthcare professionals can create specific and focused interventions. These interventions might take a wholistic approach, taking into account the psychological and social elements of pruritus in addition to the physical symptoms. Such a complete strategy might incorporate dermatological care, counselling, and specially created support networks to cater to the special requirements of the elderly and ultimately improve their general wellbeing.

**MATERIALS AND METHODOLOGY –**

Two hundred participants who satisfied the following criteria were included in the study: they were 60 years of age or older and reported having pruritus between February 2021 and July 2022 at Krishna Hospital in Karad. In order to take part, patients had to provide written consent and follow all study guidelines. Extremely anxious people and those with neurological or cognitive problems were not included.

Patients in the study got a complete physical examination that included a thorough history of their itching, taking into account its severity and cyclical patterns. This evaluation included a thorough examination of their skin and overall health, past drug and medical history, social situation, ancestry, and any addictive tendencies. Each patient responded to a tailored survey made in their locale to determine how pruritus affected their quality of life. Their replies were

used to calculate the Dermatology Life Quality Index (DLQI) score, which ranged from 0 to 30. Higher ratings suggested a more detrimental impact on the patient's quality of life.

The DLQI questionnaire only required a few minutes to do and was intended for individuals over the age of 16. It consisted of 10 questions that assessed the patient's skin condition's impact on various aspects of their life. Each question was given a score ranging from 0 to 3, with 3 denoting a significant effect. Adding the results from each of the ten questions yielded the overall DLQI score, with higher totals indicating a greater negative impact on the patient's quality of life.

**Table 1: DLQI Score and its effect on Quality of Life**

| SCORE | EFFECT ON QUALITY OF LIFE |
|---|---|
| 0–1 | No Effect At All On Patient's Life |
| 2–5 | Small Effect On Patient's Life |
| 6–10 | Moderate Effect On Patient's Life |
| 11–20 | Very Large Effect On Patient's Life |
| 21–30 | Extremely Large Effect On Patient's |

By employing the DLQI questionnaire and conducting in-depth clinical assessments, researchers aimed to understand the extent of pruritus-related impairments in the daily lives of participants. The outcomes of this study could potentially assist healthcare professionals in devising specific interventions to enhance the quality of life for elderly individuals dealing with pruritus.

**RESULTS -**

During the study period from February 2021 to July 2022, a total of 1980 elderly patients visited the Outpatient Department (OPD), out of which 200 patients complained primarily of pruritus, indicating a prevalence of 10.10% in the geriatric age group. The participants' mean age was 67.5 years, ranging from 60 to 86 years. Among these patients, 69.5% were in the 60 to 70 years age group, 25.5% were between 70 and 80 years, and only 5% were above 80 years old. The study observed a slightly higher female prevalence, constituting 52% of the patients, indicating a female preponderance.

In terms of occupation, the majority of the patients were farmers (34.5%), followed closely by retirees (32.5%) and housewives (28.5%). This observation could be attributed to the rural area where the study was conducted.

In this research, the majority of patients were diagnosed with tinea (22%), various forms of eczema (21%), and psychocutaneous disorders (19%). Scabies accounted for 11.5% of cases, followed by senile xerosis and bullous disorders, each at 8.5%, and drug-induced pruritis at 4%. The higher incidence of fungal infections observed in the study area could be linked to the rural setting and the subpar living conditions regarding hygiene. Furthermore, a notable number of patients suffered from photodermatitis and contact dermatitis due to exposure to chemicals commonly used in farming activities. This can be attributed to the prevalence of

farmers within the study population. Table 2 depicts the values in detail along with percentage.

**Table 2: Pattern of distribution of pruritic dermatoses**

| Diagnosis | Frequency | Percentage |
|---|---|---|
| **Atopic Dermatitis** | 5 | 2.5 |
| **Bullous pemphigoid** | 13 | 6.5 |
| **Diabetic pruritus** | 2 | 1 |
| **Drug induced pruritus** | 7 | 3.5 |
| **Eczema** | 12 | 6 |
| **Functional itch disorder** | 11 | 5.5 |
| **Hypertrophic LP** | 5 | 2.5 |
| **Keloid** | 2 | 1 |
| **Lichen planus** | 4 | 2 |
| **Lichen amyloidosis** | 4 | 2 |
| **Linear IgA dermatoses** | 4 | 2 |
| **LSC** | 4 | 2 |
| **Neurodermatitis** | 1 | 0.5 |
| **Photodermatitis** | 11 | 5.5 |
| **Prurigo nodularis** | 3 | 1.5 |
| **Psoriasiform eczema** | 4 | 2. |
| **Psoriasis** | 11 | 5.5 |
| **Scabies** | 22 | 11 |
| **Seborrheic dermatitis** | 4 | 2 |
| **Senile Xerosis** | 17 | 8.6 |
| **Tinea** | 43 | 21.5 |
| **Tinea & scabies** | 5 | 2.5 |
| **Uremic Pruritus** | 3 | 1.5 |
| **Urticaria** | 3 | 1.5 |

Concerning the International Forum for the Study of Itch (IFSI) classification, 89.5% of patients fell into category 1, denoting dermatological disorders. No patients were classified under categories 5 and 6, which represent mixed overlying diseases and undetermined origins, respectively. The Dermatology Life Quality Index (DLQI) scores, as shown in table 3, indicated that 53% of patients experienced a moderate impact on their quality of life, scoring between 6 and 10. Another 37.5% had a small effect (DLQI score between 2 and 5),

while 8% experienced a very large impact (DLQI score between 11 and 20), and 0.5% had an extremely large impact (DLQI score between 21 and 30).

**Table 3: DLQI scores interpretation:**

| DLQI Score | Frequency | Percentage |
|---|---|---|
| **0-1** | 2 | 1 |
| **2-5** | 75 | 37.5 |
| **6-10** | 106 | 53 |
| **11-20** | 16 | 8 |
| **21-30** | 1 | 0.5 |
| **Total** | 200 | 100 |

The study also established a significant association between DLQI and IFSI, as shown in table 4, emphasizing the impact of dermatological disorders (IFSI category 1) on the quality of life in elderly patients dealing with pruritus. Additionally, several of the patients had a history of drug usage, mostly antihypertensive drugs like ACE inhibitors, suggesting a possible connection between these drugs and pruritic symptoms.

**Table 4: Association between DLQI score and IFSI category**

| DLQI Score | 1 | 2 | 3 | 4 | Frequency | Percentage |
|---|---|---|---|---|---|---|
| **0-1** | 2 | 0 | 0 | 0 | 2 | 1 |
| **2-5** | 69 | 1 | 4 | 1 | 75 | 37.5 |
| **6-10** | 94 | 4 | 0 | 8 | 106 | 53 |
| **11-20** | 13 | 3 | 0 | 0 | 16 | 8 |
| **21-30** | 1 | 00 | 0 | 0 | 1 | 0.5 |
| **Total** | 179 | 8 | 4 | 9 | 200 | 100 |

Complete blood count (CBC), liver function test (LFT), and renal function test (RFT) results in aberrant findings in 46 instances, 53 cases, and 55 cases, respectively, according to laboratory studies. The prevalence of underlying kidney problems in this cohort was demonstrated by the substantial percentage of patients (55%) who had abnormal renal function. In addition, 37% of patients had comorbid conditions, with diabetes occurring in 19.5% of cases and hypertension in 17.5%.

The intricate interactions between dermatological diseases, environmental variables, comorbidities, and medication histories in older patients with pruritus are thus clarified by this study. It emphasizes the need for comprehensive and tailored healthcare interventions to address not only the skin disorders but also the broader impacts on their quality of life.

**DISCUSSION –**

The aim of this research was to investigate the prevalence and patterns of pruritic disorders in elderly patients, analyzing their impact on quality of life in a hospital setting. Over the study

period, 1980 elderly individuals visited the outpatient department (OPD), with 200 among them primarily complaining of pruritus, forming the basis of this study.

The average age of participants was 67.5 years, ranging from 60 to 86 years. A notable 69.5% belonged to the 60 to 70 years age bracket, while 25.5% were between 70 to 80 years, and merely 5% were over 80 years old. Regarding gender distribution, 52% were females, indicating a slight female predominance. Occupation-wise, the majority (34.5%) were farmers, followed by retirees (32.5%), housewives (28.5%), and businessmen (4.5%).

These demographic findings mirrored those of earlier studies. For example, a study by Irem Eren Erturk et al. in 2012 displayed a similar trend with a higher representation of females in their pruritic patient sample, indicating consistency in gender distribution across ***studies (Eren et al., 2012).*** Additionally, variations in the prevalence of pruritic disorders across different age groups have been observed in various studies, emphasizing the importance of age as a determining factor for the occurrence of these disorders ***(Thappa et al., 2012).***

Out of the 1980 geriatric patients visiting the OPD, 200 presented complaints of pruritus, signifying a prevalence rate of 10.10%. Comparable rates have been substantiated by previous studies. For instance, a study conducted by Rashmi Jindal et al. in 2016 reported a similar prevalence of pruritic disorders in the geriatric population of tertiary care hospitals in Uttarakhand ***(Jindal et al., 2020).*** Furthermore, studies such as the one by Cohen KR et al. in 2012 have validated the prevalence rates witnessed in this study, adding credibility to the consistency of these findings ***(Cohen et al., 2012).***

Notably, the age group of 60 to 70 years constituted the majority in this study, aligning with the findings of other research, where specific age groups, especially those between 60 and 70 years, exhibited higher prevalence rates. However, due to the limited sample size in certain age groups, this study couldn't establish a direct correlation between prevalence and specific age categories.

The prevalence of erythematous-squamous disorders, which involve skin inflammation marked by redness and scaling, varies notably among different studies. In this study, a relatively high prevalence of 44.5% was observed, whereas Goyal et al. (14.1%) and Ghosh A et al. (14.6%) reported lower percentages in their respective studies (Goyal et al., 2017).

Infections and infestations, referring to skin infections caused by parasites, show significant variation in prevalence across studies. Kandwal et al. (33.3%) and Agarwal et al. (91.8%) reported high percentages, indicating a substantial burden of infectious skin conditions in their study. Benign neoplasms, non-cancerous skin growths, generally have a low prevalence across studies ***(Jindal et al., 2020, Agarwal et al., 2019).*** However, Pavithra et al. reported a notably high prevalence (80%) in this category, suggesting a particular focus on benign growths in their study ***(Pavithra et al., 2010).***

Precancerous and cancerous lesions, potentially malignant or malignant skin growths, vary in prevalence across studies. Talukdar et al. (3.1%) and Agarwal et al. (2.4%) reported relatively low percentages, while Raveendra et al. (100%) and Ghosh A et al. (7.6%) reported higher figures, indicating diverse findings in this category ***(Talukdar & Mitra, 2016, Agarwal et al., 2019, Raveendra, 2014).*** Pruritus, characterized by itching and common in various skin conditions, displays considerable variability in prevalence across studies. Ghosh A et al. reported an exceptionally high prevalence of 64%, whereas the present study (10.10%) and

Ali et al. (9.5%) reported moderate percentages, suggesting differences in underlying causes or patient populations ***(Khan et al., 2017).***

In the present study, the categorization of patients according to the International Forum for the Study of Itch (IFSI) revealed significant insights into the impact of dermatological disorders on the quality of life among the elderly population. Notably, 89.5% of the participants fell into category 1 of IFSI, indicating the prevalence of dermatological disorders. The statistical analysis, employing the chi-square test, demonstrated a significant association between Dermatology Life Quality Index (DLQI) scores and IFSI categories, specifically highlighting the substantial impact of dermatological disorders (category 1) on the patients' quality of life. The lack of dermatological problems in groups 5 and 6, which indicate diverse underlying conditions and unknown sources, highlights how narrowly the impact analysis on pruritic disorders was focused in this study.

The analysis of the DLQI scores produced interesting results. 37.5% of participants indicated a little effect, whereas 57% of participants said pruritic conditions had a moderate impact on their quality of life. Additionally, just 1% of individuals had no change in their quality of life, whereas 8% experienced a significant change. This contrasts with earlier research that examined numerous illnesses in the senior age range, such as that done by Kandwal M et al. in 2020 ***(Jindal et al., 2020).*** The wide range of outcomes emphasizes how much pruritic illnesses, which were especially examined in this study, affect older people's general quality of life. This customized approach highlights the particular difficulties experienced by people who experience pruritus, providing insightful information for targeted therapies and improved patient care.

Significant trends were found in the study's distinction between chronic and acute pruritus, with 55% of individuals reporting chronic and 45% reporting acute pruritus. These findings are in line with earlier studies that have highlighted the frequency of chronic pruritus in the elderly, particularly among women, such as the study by ***Cohen KR et al.*** Similarly, the study by Yalcin B et al. also noted a higher occurrence of chronic pruritus in the elderly, aligning with our study's observations ***(Yalcin et al., 2006).*** Noteworthy from our analysis is the higher prevalence of chronic pruritus among those aged 60 to 70 years, suggesting a potential link between age and the duration of pruritic symptoms. Discrepancies with prior studies may arise from differences in the age compositions of the study groups, emphasizing the significance of age-specific analyses in understanding pruritic disorders in older adults.

Assessing the impact of pruritus on quality of life revealed a compelling correlation between the duration of pruritic symptoms and Dermatology Life Quality Index (DLQI) scores. Among those with chronic pruritus, 56 individuals experienced moderate impairment, and 13 patients faced severe impairment in their quality of life. Acute pruritus, however, led to severe impairment in 3 individuals and moderate impairment in 50 patients. This highlights a strong association between chronic pruritus and a higher degree of impairment in quality of life. Similar findings were observed in studies by ***Seema Kini et al. in 2011*** and Astrid ***Stumpf et al. in 2018,*** both emphasizing the substantial impact of chronic pruritus on overall quality of life. Additionally, research by Sánchez-Pérez et al. in 2013 highlighted the detrimental influence of atopic pruritus on quality of life, emphasizing the broader implications of pruritic disorders on patients' well-being ***(Sánchez-Pérez et al., 2013).*** These

collective results emphasize the urgent need for targeted interventions to alleviate the effects of chronic pruritus and enhance the overall quality of life for affected individuals.

The study excels in identifying crucial factors impacting the elderly's quality of life due to pruritic disorders, offering insights for targeted interventions. These findings not only deepen our understanding of pruritic conditions but also aid in developing specific strategies to improve affected individuals' overall well-being. In the realm of healthcare, the study's insights into diverse pruritic disorders enable efficient patient prioritization and tailored care, optimizing time management. However, acknowledging its limitations is vital. The small sample size may restrict the findings' applicability, emphasizing the need for broader, varied samples. Moreover, the study's brief duration might limit the depth of insights; long-term research could provide a nuanced understanding of how pruritic disorders evolve, enriching our comprehension and guiding future interventions.

**CONCLUSION –**

In summary, this study found a pruritic dermatoses prevalence of 10.10% among the elderly, with fungal infections being the most common at 22%, followed by scabies (11.5%), senile xerosis (8.5%), eczema (6.5%), bullous pemphigoid (6%), drug-induced pruritis (4%), and psychocutaneous disorders (6%). Patients in IFSI category 1 experienced significant declines in their quality of life, emphasizing the significant impact of pruritic disorders. Therefore, addressing pruritus is crucial for enhancing life quality. As the elderly population grows, specialized geriatric clinics are essential, and dermatologists can improve aging skin health by promoting standardized skin care guidelines. Furthermore, gerontodermatology has the potential to become a specialized field, encouraging dermatologists to consider it as a valuable career path.

**REFERENCES –**

***Agarwal, R., Sharma, L., Chopra, A., Mitra, D., & Saraswat, N. (2019). A cross-sectional observational study of geriatric dermatoses in a Tertiary Care Hospital of Northern India. Indian Dermatology Online Journal, 10(5), 524. https://doi.org/10.4103/idoj.idoj_282_18***

***Astrid Stumpf1, Bettina Pfleiderer2, Fleur Fritz3, Nadi Osada4, Suephy C. Chen5,6 and Sonja Ständer4 Departments of 1Psychosomatics and Psychotherapy, 4Dermatology, Center for Chronic Pruritus, 2Clinical Radiology, 3Institute for Medical Informatics, University Hospital of Münster, Von-Esmarchstrasse 58, DE-48149 Mu?nster, Germany, 5Department of Dermatology, Emory University School of Medicine, Atlanta, and 6Atlanta VA Medical Center, Decatur, GA, USA.***

***Biçer, S., Ulaş, Y., Atasoy, M., Özyurt, K., Ulaş, S., Ertaş, R., & Avcı, A. (2018, December 11). Impact of pruritus on quality of life in patients with tinea. International Physical Medicine & Rehabilitation Journal, 3(6). https://doi.org/10.15406/ipmrj.2018.03.00160***

***Cohen, K. R., Frank, J., Salbu, R. L., & Israel, I. (2012). Pruritus in the elderly: clinical approaches to the improvement of quality of life. Pharmacy and therapeutics, 37(4), 227.***

***Erturk, I. E., Arican, O., Omurlu, I. K., & Sut, N. (2012). Effect of the pruritus on the quality of life: a preliminary study. Annals of dermatology, 24(4), 406-412.***

***Goyal, A., Balai, M., Mittal, A., Khare, A. K., & Gupta, L. K. (2017, July 3). Pattern of geriatric dermatoses at a Tertiary Care Teaching Hospital of South Rajasthan, India. Our Dermatology Online, 8(3), 237–241. https://doi.org/10.7241/ourd.20173.71***

***Grundmann, S., & Ständer, S. (2011). Chronic Pruritus: Clinics and Treatment. Annals of Dermatology, 23(1), 1. https://doi.org/10.5021/ad.2011.23.1.1***

***Gurel, M. S., Yanik, M., Simsek, Z., Kati, M., & Karaman, A. (2005, November). Quality of life instrument for Turkish people with skin diseases. International Journal of Dermatology, 44(11), 933–938. https://doi.org/10.1111/j.1365-4632.2004.02225.x***

*Irem Eren Erturk, Ozer Arican, Imran Kurt Omurlu, Necdet Sut, Effect of the Pruritus on the Quality of Life:A Preliminary Study. Ann Dermatol. 2012; Vol. 24: No. 4.*

*Jaworecka, K., Rzepko, M., Marek-Józefowicz, L., Tamer, F., Stefaniak, A. A., Szczegielniak, M., Chojnacka-Purpurowicz, J., Gulekon, A., Szepietowski, J. C., Narbutt, J., Owczarczyk-Saczonek, A., & Reich, A. (2022, September 22). The Impact of Pruritus on the Quality of Life and Sleep Disturbances in Patients Suffering from Different Clinical Variants of Psoriasis. Journal of Clinical Medicine, 11(19), 5553. https://doi.org/10.3390/jcm11195553*

*Jindal, R. (2016). Skin Disorders Among Geriatric Population at a Tertiary Care Center in Uttarakhand. JOURNAL OF CLINICAL AND DIAGNOSTIC RESEARCH. https://doi.org/10.7860/jcdr/2016/17015.7500*

*Jindal, R., Kandwal, M., Chauhan, P., & Roy, S. (2020). Skin diseases in geriatrics and their effect on the quality of life: A hospital-based observational study. Journal of Family Medicine and Primary Care, 9(3), 1453. https://doi.org/10.4103/jfmpc.jfmpc_1188_19*

*Khan, M. I., Saraswathi, K., Shyamala, R., Azam, I., Salman, M., & Ali, S. S. A. (2017, March 30). Placental Abruption An Obstetricians Nightmare-A Study of Risk Factors and Maternofoetal Outcomes at Two Tertiary Care Teaching Hospitals in South India. Asian Pacific Journal of Health Sciences, 4(1), 220–230. https://doi.org/10.21276/apjhs.2017.4.1.34*

*Kini, S. P. (2011, October 1). The Impact of Pruritus on Quality of Life. Archives of Dermatology, 147(10), 1153. https://doi.org/10.1001/archdermatol.2011.178*

*Kshetrimayum, S., Thokchom, N. S., . V., & Hafi, N. A. B. (2017, November 23). Pattern of geriatric dermatoses at a tertiary care center in North-East India. International Journal of Research in Dermatology, 3(4), 527. https://doi.org/10.18203/issn.2455-4529.intjresdermatol20175377*

*Pavithra, S., Shukla, P., & Pai, G. S. (2010). Cutaneous manifestations in senile skin in coastal Goa. Nepal Journal of Dermatology, Venereology & Leprology, 9(1), 1-6.*

*Raveendra, L. (2014, July 15). A clinical study of geriatric dermatoses. Our Dermatology Online, 5(3), 235–239. https://doi.org/10.7241/ourd.20143.59*

*Sánchez-Pérez, J., Daudén-Tello, E., Mora, A., & Lara Surinyac, N. (2013, January). Impact of Atopic Dermatitis on Health-Related Quality of Life in Spanish Children and Adults: The PSEDA Study. Actas Dermo-Sifiliográficas (English Edition), 104(1), 44–52. https://doi.org/10.1016/j.adengl.2012.11.005*

*Ständer, S., Weisshaar, E., & Luger, T. A. (2008, March). Neurophysiological and neurochemical basis of modern pruritus treatment. Experimental Dermatology, 17(3), 161–169. https://doi.org/10.1111/j.1600-0625.2007.00664.x*

*Talukdar, D. K., & Mitra, D. D. (2016, February 29). A cross sectional observational study to evaluate various cutaneous manifestations in geriatric age group A cross sectional observational study to evaluate various cutaneous manifestations in geriatric age group. International Journal of Medical Research and Review, 4(2), 186–192. https://doi.org/10.17511/ijmrr.2016.i02.011*

*Thappa, D., Durai, P., Kumari, R., & Malathi, M. (2012). Aging in elderly: Chronological versus photoaging. Indian Journal of Dermatology, 57(5), 343. https://doi.org/10.4103/0019-5154.100473*

*Uprety, S., Paudel, S., & Thapa, P. (2021). Pattern of skin diseases in geriatric population: Our year-long experience from Nepal. Indian Dermatology Online Journal, 12(6), 888. https://doi.org/10.4103/idoj.idoj_65_21*

*Valdes-Rodriguez, R., Mollanazar, N., González-Muro, J., Nattkemper, L., Torres-Alvarez, B., López-Esqueda, F., Chan, Y., & Yosipovitch, G. (2015). Itch Prevalence and Characteristics in a Hispanic Geriatric Population: A Comprehensive Study Using a Standardized Itch Questionnaire. Acta Dermato Venereologica, 95(4), 417–421. https://doi.org/10.2340/00015555-1968*

*Valdes-Rodriguez, R., Stull, C., & Yosipovitch, G. (2015, February 19). Chronic Pruritus in the Elderly: Pathophysiology, Diagnosis and Management. Drugs & Aging, 32(3), 201–215. https://doi.org/10.1007/s40266-015-0246-0*

*Verma, D. A. (2017, March). Spectrum Analysis of Cases of Japanese Encephalitis in Jharkhand, India. IOSR Journal of Dental and Medical Sciences, 16(03), 16–19. https://doi.org/10.9790/0853-1603041619*

*Yalcin, B., Tamer, E., Toy, G. G., Oztas, P., Hayran, M., & Alli, N. (2006, June). The prevalence of skin diseases in the elderly: analysis of 4099 geriatric patients. International Journal of Dermatology, 45(6), 672–676. https://doi.org/10.1111/j.1365-4632.2005.02607.x*

***Yalcin, B., Tamer, E., Toy, G. G., Oztas, P., Hayran, M., & Alli, N. (2006, June). The prevalence of skin diseases in the elderly: analysis of 4099 geriatric patients. International Journal of Dermatology, 45(6), 672–676. https://doi.org/10.1111/j.1365-4632.2005.02607.x***