ORIGINAL REPORT

Chronic Pruritus in Geriatric Patients: Prevalence, Associated Factors, and Itch-related Quality of Life

Marlene GÜNTHER[1], Charlotte KOBUS[1], Caroline PERNER[2,3], Aline SCHÖNENBERG[1] and Tino PRELL[1]
[1]Department of Geriatrics, Halle University Hospital, Halle, [2]Institute of Immunology, Hannover Medical School, Hannover, and [3]Hematology, Hemostasis, Oncology and Stem Cell Transplantation, Hannover Medical School (MHH), Hannover, Germany

Chronic pruritus is a common condition that significantly impacts quality of life. However, data on chronic pruritus in geriatric populations remain limited. A prospective observational study was conducted at the Centre for Geriatrics in Southern Saxony-Anhalt (ZASSA), involving 201 geriatric patients (mean age 83.5±5.1 years). Chronic pruritus was found in 23.4% of patients, persisting for an average of 8 years with moderate to severe intensity (mean=6.36 on a 0 to 10 numeric scale). It commonly affected the legs (48.9%) and arms (44.7%) and was linked to depressive symptoms and daily medication use. Chronic pruritus significantly impaired physical functioning, particularly in moderate activities and stair climbing, and increased pain levels. ItchyQoL scores highlighted adverse effects on symptoms, functioning, feelings, and self-perception. Overall, chronic pruritus is prevalent among geriatric patients and substantially reduces quality of life. Addressing both dermatological and psychological factors is essential for effective management and improving quality of life in this population.

Key words: depression; geriatric; quality of life, medication.

Submitted Sep 13, 2025. Accepted after revision Mar 25, 2025

Published Apr 9, 2025. DOI: 10.2340/actadv.v105.42003

Acta Derm Venereol 2025; 105: adv42003.

Corr: Prof. Dr. Tino Prell, Department of Geriatrics, Halle University Hospital, Ernst-Grube-Str. 40, DE-06120 Halle (Saale), Germany. E-mail: Tino.prell@uk-halle.de

SIGNIFICANCE

Chronic pruritus is a persistent itching condition that can severely affect the quality of life. This study found that about 23% of geriatric patients experienced chronic pruritus, which often lasted for years and impacted multiple areas of the body. Chronic pruritus is linked to reduced physical function, increased pain, and depressive symptoms, but less so to social and emotional factors in geriatric patients. Managing chronic pruritus in elderly patients requires addressing both the physical and mental aspects of the condition to improve overall well-being and quality of life in this vulnerable population.

Chronic pruritus (CP), defined as persistent itching lasting more than 6 weeks, is a prevalent and distressing condition among older adults, with prevalence estimates varying widely from 11% to 78% depending on the population studied and the methodologies employed (1). Multiple factors contribute to CP in older patients. It can occur by itself or in association with primary skin disorders (e.g., xerosis, atopic dermatitis), systemic disorders (e.g., chronic renal failure), neurological disorders, psychogenic disorders, adverse drug reactions and polypharmacy, or a combination of these disorders (2–4). In addition, age-related changes in the skin, metabolic imbalances, and immune dysregulation can increase the risk of CP (5–8).

Numerous studies in dermatological cohorts have shown that CP is common in old age. For example, pruritus was one of the most common dermatological conditions among inpatients aged over 65 from a dermatology clinic (9). Also in the study by Gunalan et al. of 300 older outpatients attending Dermatology in tertiary care hospital, pruritus was identified as a common complaint (44%), often associated with xerosis and eczematous dermatitis (10). Pruritus was also frequently noted in 330 dermatological geriatric inpatients, particularly in patients with dermatological conditions such as eczema (11).

However, it is important to note that while those studies involved older patients, they focused on highly specific dermatological cohorts instead of overall geriatric patients. In contrast to older adults, geriatric patients are characterized by considerable vulnerability and functional limitations at various levels (physical, mental, social, etc.). Therefore, they are often systematically excluded from many studies and few data are available on them (12). However, in view of the growing number of geriatric patients, this is a grave oversight. Only 1 study by Valdes-Rodriguez et al. surveyed 302 Hispanic geriatric individuals from both nursing homes and geriatric ambulatory care centres using a standardized itch questionnaire. The prevalence of CP was reported to be 25%, with high perceived itch intensity (13). However, there are no comprehensive empirical data available on how CP is related to functionality or quality of life (QoL) in geriatric patients, both of which serve as a major therapeutic goal in geriatric medicine.

With this study, we aimed to close this gap by assessing prevalence and characteristics of CP as well as itch-related QoL in geriatric patients.

MATERIALS AND METHODS

Study design

This prospective observational study was conducted between April 2023 and October 2023 in the Centre for Geriatrics in Southern Saxony-Anhalt, Germany (Zentrum für Altersmedizin im südlichen Sachsen-Anhalt [ZASSA]). We included geriatric patients who received the geriatric early rehabilitative complex treatment within an acute geriatric unit, documented under the Operations and Procedures Key (OPS) system 8-550. We excluded patients who were not able to provide valid self-report due to severe health problems (e.g., acute respiratory failure), delirium, or severe dementia. As shown in Fig. S2, data from 201 patients were used for analyses.

All patients gave written informed consent. The local ethics committee of Halle University Hospital approved the study (No. 2022-026).

Sample size calculation revealed that approximately 196 participants are required to accurately determine the prevalence of CP with an estimated prevalence of 15% (based on own preliminary data) at a 95% confidence level with a 5% margin of error (14). For the logistic regression, we assumed a lower effect size with a coefficient of determination of $R^2 = 0.10$, a statistical power of 0.9, and a significance level of $\alpha = 0.05$. With 5 predictors, a sample size of $n = 154$ was required for a significant overall model.

Variables of interest

Characteristics of chronic pruritus. CP was defined when pruritus was present for more than 6 weeks (8).

All patients were asked upon hospital admission whether they had CP (yes/no). All participants who reported CP ($n = 47$) provided additional information about CP characteristics:

- average intensity on a numeric rating scale (0 = none to 10 = maximum imaginable intensity);
- duration of pruritus (years);
- body location;
- frequency (constantly/daily/weekly/monthly/< monthly).

Additionally, patients were asked about any medical consultations they had sought for their itching.

A focused clinical examination was also conducted for individuals with CP, inspecting the affected areas for skin abnormalities such as redness, dryness, and rashes.

Itch-related quality of life. In addition, the German version of the Itchy Quality of life questionnaire (ItchyQoL) was employed in those patients with CP (15). It consists of 22 questions covering 4 domains: symptoms, functioning, feelings, and self-perception. Each question is scored on a 5-point scale (1 = never, 2=rarely, 3 = sometimes, 4 = often, and 5 = all the time). Sub-scores for each domain were calculated by using the mean scores of the given responses in this domain. Higher scores correspond to an elevated impact of itching on QoL.

Independent variables (covariates)

The following variables were extracted from medical records and the comprehensive geriatric assessment:

- chronological age, sex;
- medication list (before admission to hospital);
- number of medications a patient takes daily (before admission to hospital) as indicator of multimorbidity;
- medical diagnoses;
- presence of itch-associated disorders: chronic kidney diseases, hepatobiliary diseases, hyper- and hypothyroidism, iron deficiency, diabetes mellitus, neuropathy, depression/anxiety disorders, malignancy, skin diseases;
- level of care (German Pflegegrad) (before admission to hospital): describes need for long-term care and assistance (from 1 = minor impairment of independence or abilities to 5 = most severe impairment with special requirements for nursing care);
- body mass index (BMI);
- Barthel Index to describe functional status and level of dependency (16–18);
- Handgrip strength: measured with Martin-Vigorimeter on the dominant hand as indicator of overall muscle strength and overall health risk (standard value for women = 0.42 bar, for men = 0.64 bar) (19, 20);
- Geriatric Depression Scale (GDS)-15 to quantify depressive symptoms (≤4 points: no evidence of depression) (21);
- Mini-Mental State Examination (MMSE) for cognitive function (22).

The following variables were collected via self-report

- marital state (single, married, in partnership, widowed/separately/divorced; multinominal);
- living situation (alone/with partner or family/nursing home; multinominal);
- physical and mental functioning in daily living derived from the Short-Form 12 (23).

Medication

For each prescribed medication, the individual risk for causing pruritus was extracted from the package insert. The encoding scheme is as follows: 0 = not causing pruritus, 1 = very rarely (< 0.01%), 2 = rarely (> 0.01% – < 0.1%), 3 = occasionally (> 0.1 % – < 1.0%), 4 = frequently (> 1.0% – < 10.0%), 5=very frequently causing pruritus (> 10.0%). From this data, we calculated the median (ItchMed), where higher values indicate that the medications taken cause itching more frequently. We also calculated the frequency of drugs that cause CP frequently or very frequently (allopurinol, edoxaban, rivaroxaban, insulin, opiates).

Statistical analyses

Data were analysed using SPSS version 27 (IBM Corp, Armonk, NY, USA). Descriptive statistics were used to summarize the characteristics of the cohort. The Shapiro–Wilk test was applied to assess the normality of the continuous variables. For group comparisons, a

t-test was utilized for normally distributed continuous data, while the Mann–Whitney *U* test was used for non-normally distributed continuous data. Nominal data were compared using the χ^2 test. Effect sizes for group comparisons were calculated using rank biserial correlation for continuous variables and Cramer's V for nominal variables.

Binomial logistic regression was conducted to identify factors associated with CP. The dependent variable was the presence of CP (yes/no), and the independent variables included age, sex, GDS, number of medications, and handgrip strength. Additionally, multinomial regression was performed to examine the association between CP (independent variable) and various physical functions, such as moderate activities, climbing stairs, and pain interference (dependent variables). The regression model included the same covariates as in the logistic regression to control for potential confounders. The Nagelkerke R^2 value was used to assess the explanatory power of the model. All statistical tests were two-tailed, and a *p*-value <0.05 was considered statistically significant.

RESULTS

Characteristics of chronic pruritus

Table I and Table SI present a comprehensive overview of the cohort's characteristics. The mean age was 83.51 ± 5.13 years (range 67–94). The primary reasons for hospitalization and subsequent admission to the GCP were trauma and cardiovascular diseases (Fig. S1). The prevalence of CP was 23.4%. CP had been persisting for an average of 8 years (M = 8.44, SD = 14.98), with 29.8% having had CP for less and 70.2% for more than 1 year. Patients experienced moderate to severe CP intensity (M = 6.36, SD = 2.07; median = 7, IQR = 3) (**Table II**).

CP occurs with variable frequency, most commonly on a weekly (40.4%) or daily (34.0%) basis. CP typically affects multiple areas of the body (multilocular: 97.9%), with the legs (48.9%), arms (44.7%), and head (31.9%) being the most commonly affected areas (**Fig. 1**).

Factors associated with chronic pruritus

Geriatric patients with and without CP differed in several health and demographic variables, albeit with small effect sizes (Table I). In the logistic regression model, the presence of CP was associated with depressive symptoms and the number of medications per day (**Table III**).

Patients with CP exhibited a higher prevalence of mental disorders (depression or anxiety) and skin diseases ($p<0.001$) (Table SII). The intake of medications that cause itching frequently or very frequently did not differ between patients with CP (M = 1.70, SD = 1.02, 95% CI [1.34, 2.06]) and those without CP (M = 1.57, SD = 0.95, 95% CI [1.37, 1.76]). The ItchMed score, which serves as an overall indicator of the itching potential of prescribed medication, exhibited a slight but non-significant elevation in patients with CP (M = 1.96, SD = 0.49, 95% CI [1.81, 2.10]) in comparison with patients without CP (M = 1.90, SD = 0.62, 95% CI [1.80, 2.00]). The use of medications that frequently cause itching (allopurinol,

Table I. Characteristics of the cohort

Variable	No itch (*n* = 154)	Itch (*n* = 47)	*p*-value	Effect size*	Total (*N* = 201)
Age (years), mean ± SD	83.62 ± 5.08	83.13 ± 5.32	0.41		83.51 ± 5.13
Number of medication per day, mean ± SD	7.89 ± 3.88	9.40 ± 4.42	0.023	−0.22	8.24 ± 4.05
Physician visits per quarter, mean ± SD	1.46 ± 0.89	1.936 ± 1.13	0.005	−0.23	1.58 ± 0.97
Body mass index (kg/m2), mean ± SD	27.16 ± 5.90	29.10 ± 7.51	0.27		27.61 ± 6.35
Mini-Mental State Examination, mean ± SD	26.40 ± 3.59	26.81 ± 3.30	0.51		26.50 ± 3.52
Geriatric Depression Scale, mean ± SD	2.78 ± 2.73	4.043 ± 3.75	0.047	−0.19	3.08 ± 3.04
Barthel index sum score, mean ± SD	36.33 ± 11.12	36.92 ± 12.09	0.83		36.47 ± 11.33
Hand grip strength (bar), mean ± SD	0.36 0.17	0.31 ± 0.18	0.036	0.20	0.35 ± 0.17
Sex, *n* (%)					
Female	102 (66.2)	33 (70.2)	0.61		135 (67.2)
Male	52 (33.8)	14 (29.8)			66 (32.8)
Marital status, *n* (%)					
Single	5 (3.2)	1 (2.1)	0.33		6 (3.0)
Married/partnership	56 (36.4)	12 (25.5)			68 (33.8)
Widowed/separately/divorced	93 (60.4)	34 (72.3)			127 (63.2)
Living situation, *n* (%)					
Alone	83 (53.9)	27 (57.4)	0.36		110 (54.7)
With partner or family	67 (43.5)	17 (36.2)			84 (41.8)
Nursing home	4 (2.6)	3 (6.4)			7 (3.5)
Nursing care, *n* (%)					
No	80 (51.9)	17 (36.2)	0.13		97 (48.3)
Yes	60 (39.0)	26 (55.3)			86 (42.8)
Relatives	14 (9.1)	4 (8.5)			18 (9.0)
Level of care, *n* (%)					
0	68 (44.2)	13 (27.7)	0.031	0.23	81 (40.3)
1	12 (7.8)	2 (4.3)			14 (7.0)
2	52 (33.8)	16 (34.0)			68 (33.8)
3	20 (13.0)	15 (31.9)			35 (17.4)
4	2 (1.3)	1 (2.1)			3 (1.5)

*Effect size metric rank biserial. Cramer-V for nominal values.

Table II. Characteristics of chronic pruritus

Factor	Response	Itch ($N=47$)
Duration, years, mean (SD)		8.44 (14.98)
Intensity 0 (none)–10 (maximal), mean (SD)		6.36 (2.07)
Frequency, *n* (%)	Constantly	6 (12.8)
	Daily	16 (34.0)
	Weekly	19 (40.4)
	Monthly	4 (8.5)
	Less than monthly	2 (4.3)
Received treatment for pruritus, *n* (%)	No	12 (25.5)
	Yes	35 (74.5)
Success of treatment, *n* (%)	Unsuccessful	17 (48.6)
	Successful	18 (51.4)
Localization, *n* (%)	Unilocular	1 (2.1)
	Multilocular	46 (97.9)
Precise localization, *n* (%)	Head	15 (31.9)
	Breast/neckline	14 (29.8)
	Arm	21 (44.7)
	Leg	23 (48.9)
	Hand	7 (14.9)
	Feet	7 (14.9)
	Back/buttock	12 (25.5)
	Abdominal	4 (8.5)
	Genital area	4 (8.5)
	Whole body	3 (6.4)
Skin abnormalities	No	16 (34)
	Yes	31 (66)
Xerosis, *n* (%)	No	13 (27.7)
	Yes	34 (72.3)

edoxaban, rivaroxaban, insulin, opiates) was higher in CP patients, although this did not reach statistical significance (Table SIII).

Chronic pruritus and functioning

Patients with CP reported more limitations in moderate activities, with 34.0% of them being limited a lot compared with 24.7% of those without CP ($p=0.025$, $r=0.191$). In addition, patients with CP reported greater difficulty in ascending multiple flights of stairs, with 38.3% indicating significant limitations compared with 28.6% of those without CP ($p=0.016$, $r=0.202$) (Table SIV). The association between CP and poorer physical function remained significant even after controlling for age, sex, and handgrip strength (Table SV).

Furthermore, pain exhibited a significant disparity between the 2 groups. Patients with CP reported that pain had a greater impact on their daily activities compared with those without CP ($p<0.001$, $r=0.367$). The association between CP and pain remained significant even after controlling for age, sex, GDS, and handgrip strength (Table SVI).

With regard to emotional stability, energy levels, feelings of despondency, and social limitations, no significant differences were observed between the 2 groups ($p>0.05$).

Itch-related quality of life

Table IV presents the values for overall ItchyQoL and its 4 main domains: symptoms, functioning, feelings, and self-perception. The duration of CP did not correlate with any of the QoL domains ($p>0.05$). Itch intensity correlated with ItchyQoL domain symptoms ($r=0.46$, $p=0.003$), function ($r=0.39$, $p=0.006$), feelings ($r=0.48$, $p<0.001$), and the overall QoL ($r=0.48$, $p<0.001$). The GDS correlated with the ItchyQoL domains symptoms ($r=0.042$, $p=0.004$), feelings ($r=0.36$, $p=0.013$), per-

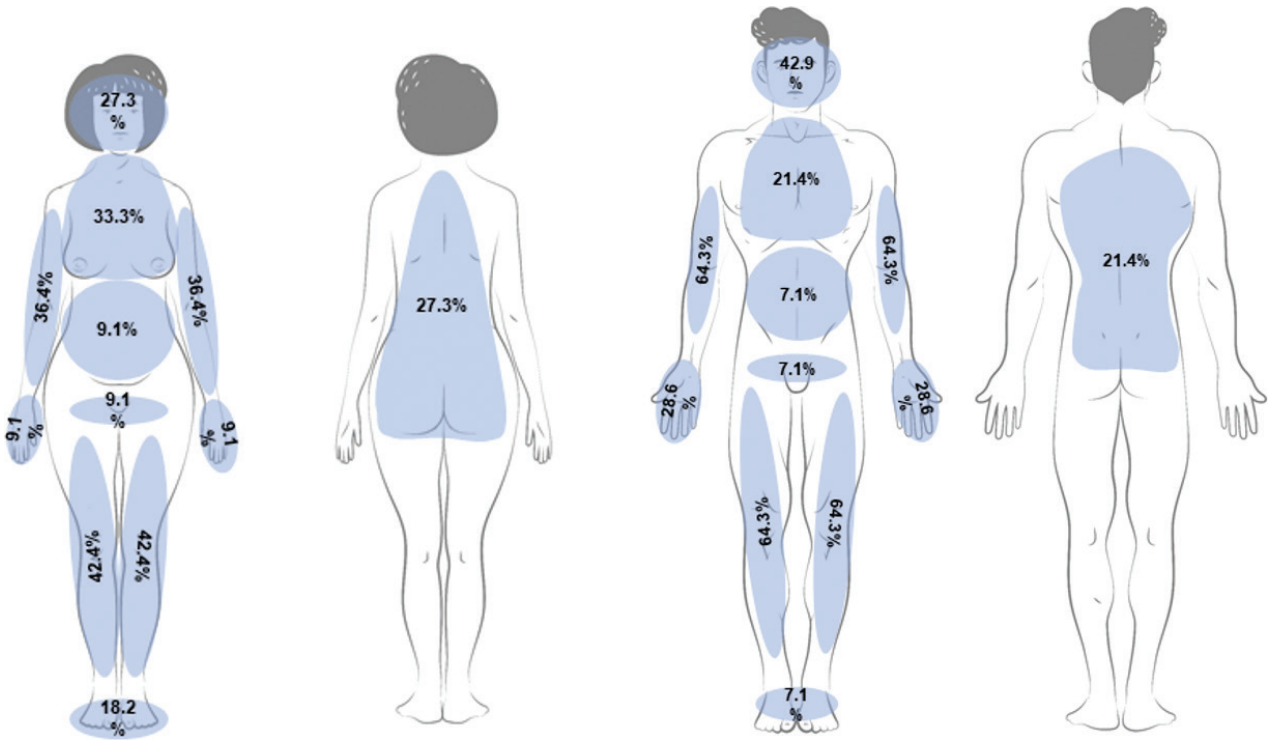

Fig. 1. Localization of chronic pruritus in women and men.

Table III. Factors associated with chronic pruritus

Item		Estimate	SE	*p*-value	Standardized Beta	Nagelkerke's R^2
Model 1*	Geriatric Depression Scale	0.111	0.056	0.050	1.117	0.113
	Number of medications per day	0.093	0.044	0.033	1.098	
	Age	−0.043	0.036	0.235	0.958	
	Sex	−0.242	0.396	0.542	0.785	
	Handgrip strength	−1.768	1.150	0.124	0.171	
	Constant	2.086	3.249	0.521	8.055	
Model 2	Geriatric Depression Scale	0.106	0.056	0.058	1.112	0.111
	Number of medications per day	0.094	0.044	0.031	1.099	
	Age	−0.041	0.036	0.249	0.960	
	Handgrip strength	−1.868	1.133	0.099	0.154	
	Constant	1.706	3.197	0.594	5.506	
Model 3	Geriatric Depression Scale	0.111	0.055	0.045	1.117	0.101
	Number of medications per day	0.099	0.043	0.023	1.104	
	Handgrip strength	−1.467	1.076	0.173	0.231	
	Constant	−1.924	0.600	0.001	0.146	
Model 4	Geriatric Depression Scale	0.127	0.054	0.019	1.135	0.088
	Number of medications per day	0.099	0.043	0.021	1.104	
	Constant	−2.465	0.461	<0.001	0.085	

*Binary logistic regression, backward selection.

ception (r=0.38, p=0.008) as well as with the overall ItchyQoL (r=0.36, p=0.01), but not with ItchyQoL function (p=0.61). The overall ItchyQoL and its domains were not associated with sex, age, or the number of medications taken per day (p>0.05).

CP mainly affects the QoL domains symptoms and functioning; however, most respondents report that their self-esteem and social interactions are not significantly affected by CP (see Table SVII).

DISCUSSION

The overall prevalence of CP in the studied geriatric cohort was 23.4%. This is in line with the 25% prevalence reported by Valdes-Rodriguez et al. in their study of geriatric subjects from nursing homes and geriatric outpatient care centres in Mexico (13). In younger persons without multimorbidity, the prevalence seems to be lower (24). This fits with the observation that CP prevalence increases with age (25–27). The observed CP prevalence did not differ by gender, in accordance with another study in geriatric patients (13), yet in contrast to another study of middle-aged individuals (28).

Our study detailed the characteristics and associated factors of CP in geriatric patients, finding that CP has persisted for an average of 8 years with moderate to severe intensity. It frequently affects multiple areas of the body, particularly the legs, arms, and head. CP was found to be associated with poorer physical functioning, pain, and depressive symptoms. Comparatively, other studies show similar findings regarding the characteristics of CP. For example, Valdes-Rodriguez et al. found that in a geriatric cohort, CP intensity was close to our findings, with a mean score of 6.0 out of 10, similar to our average of 6.36 (13). This study also reported legs as the most common localization (54%), aligning closely with our finding of 48.9% for legs. The study by Stander et al. on a younger cohort reported a mean itch intensity score of 5.8, which is lower than our results in geriatric patients, supporting the notion that itch intensity tends to increase with age (25). The localization of itch is often variable and contingent on the underlying aetiology and concomitant factors, precluding the ability to conclude that chronic itch predominantly afflicts the arms and legs. However, the findings of the present study, as well as those of Stander et al., do underscore the frequent involvement of these regions, thereby suggesting that they may be common, albeit not exclusive, sites of pruritus across diverse age groups and conditions. In terms of skin conditions associated with CP, Valdes-Rodriguez et al. noted a high prevalence of xerosis in 69% of their CP patients, which is consistent with our finding of 72.3%. Whether xerosis and CP are both associated with age-dependent neurodegenerative processes in the peripheral nervous system or whether this similarity suggests that xerosis is a common underlying factor in CP among geriatric patients (6, 7) is elusive so far.

Our findings revealed a correlation between the number of medications taken per day and CP. It is noteworthy that the number of medications was used as an indicator of multimorbidity and overall health status. It is therefore possible that the correlation between the number of medications and CP does not necessarily indicate that CP in geriatric patients is caused by adverse drug reactions. We thus undertook a detailed examination of the potential for the prescribed medication to cause CP. Our study found no significant difference in the intake of itch-triggering medications between patients with and without CP. While other studies have indicated that

Table IV. Itch-related Quality of Life (ItchyQoL)

Factor	M (SD)	Median (IQR)	Sum
Overall ItchyQoL	1.98 (0.48)	1.91 (0.73)	43.55
Subscores:			
ItchyQoL symptoms	2.30 (0.65)	2.33 (1.17)	13.78
ItchyQoL functioning	1.82 (0.50)	1.86 (0.71)	12.77
ItchyQoL feelings	2.31 (0.88)	2.20 (1.20)	11.53
ItchyQoL self-perception	1.37 (0.65)	1.00 (0.50)	5.47

medications may play a significant role in CP (9, 10) they have considered dermatological patients, rather than solely geriatric patients. Additionally, Valdes-Rodriguez et al. reported that the use of medications known to cause itch (e.g., opioids, amlodipine, allopurinol, etc.), did not differ between those with and without CP (13). A number of diseases (e.g., chronic renal failure, psychogenic disorders) have been identified as being associated with an increased risk of CP (1, 7, 29). However, in contrast to Valdes-Rodrigues et al. (13), our analysis revealed an association between CP and depression, as well as skin diseases, but not with diabetes mellitus.

In accordance with previous studies, we observed a correlation between CP and depressive symptoms in geriatric patients (6, 27, 30, 31). This suggests that CP is not only related to physical but also to psychological health. Research indicates that depression, CP, and some dermatological disorders may be linked through inflammatory signal cascades (32, 33). CP often triggers stress responses, which can lead to the activation of inflammatory pathways (34). These pathways involve the release of cytokines and neuropeptides, which can exacerbate both CP and depressive symptoms. For example, pro-inflammatory cytokines such as IL-6 and TNF-α have been demonstrated to play a role in both depression and CP (35, 36). While the relationship between CP and depression appears to be bidirectional, our cross-sectional study cannot make causal statements for this association. Nevertheless, there is a need for integrated care approaches that address both the physical and psychological aspects of CP.

Itch-related discomfort can lead to sleep disturbances, reduced physical functioning, and significant psychological distress and therefore CP severely impacts the QoL (37). However, the majority of studies have focused on non-geriatric patients or patients with a diagnosed skin condition. In our study, the itch-related QoL was significantly affected by the intensity of itch, which correlated with symptoms, functioning, feelings, and overall quality of life. Itch-related symptoms included bleeding, pain, burning or stinging sensations, and the necessity to scratch. Functioning aspects were impacted, with interference in work or enjoyable activities, disturbed sleep, and difficulties in concentration. Emotional well-being was affected, with frustration, loss of control, and occasional feelings of depression or sadness being reported. Self-perception issues included occasional impacts on self-esteem and rare occurrences of embarrassment or shame due to CP.

To the best of our knowledge, no comprehensive study has yet been conducted on the relationship between itching and QoL assessed with the ItchyQol in a Western geriatric population (38, 39). In our cohort, QoL was moderately impaired due to itch. In comparison with other dermatological and younger cohorts where the ItchyQoL was used, our geriatric patients scored on average lower (15, 40–42) although itch intensity was rated similar or even higher in our cohort (15, 41, 42) (Table SVIII). The reason why geriatric subjects rate their ItchyQol better remains open. One could hypothesize that they have many secondary illnesses and other stressful life circumstances, so that they do not assign as much importance to itching as younger patients who are in the middle of life and for whom itching may be the only health problem.

This study has several limitations. The cross-sectional design does not allow causal conclusions. Efforts were made to avoid selection bias by attempting to interview all patients on the ward. However, due to poor general health or severe dementia or delirium, not all patients could be interviewed. This likely influenced the prevalence determination. Patients were not examined by a dermatologist and therefore no detailed statements can be made for specific dermatological aspects.

In conclusion, CP is common in geriatric patients and significantly impacts QoL, though its effects are less severe than in younger populations with dermatological issues. In geriatric patients, CP is linked to reduced physical function, poorer health, pain, and increased depression. Managing CP in geriatric patients requires a holistic approach addressing both dermatological and psychological factors. Future research should focus on the causes of age-related CP and develop targeted interventions for this vulnerable group.

ACKNOWLEDGEMENTS

Funding sources: TP received funding from a Bundesministerium für Bildung und Forschung (BMBF, Federal Ministry of Education and Research) grant (01GY2301).
IRB approval status: Ethics approval and consent to participate: the study involving human participants was reviewed and approved by the local ethics committee of Halle University Hospital (No 2022-026). All participants provided their written informed consent to participate in this study. All methods were carried out in accordance with relevant guidelines and regulations for research ethics.

The authors have no conflicts of interest to declare.

REFERENCES

1. Weisshaar E, Szepietowski JC, Dalgard FJ, Garcovich S, Gieler U, Gimenez-Arnau AM, et al. European S2k Guideline on chronic pruritus. Acta Derm Venereol 2019; 99: 469–506. https://doi.org/10.2340/00015555-3164
2. Meltan S, Panuganti B, Tarbox M. Evaluation and management of pruritus and scabies in the elderly population. Clin Geriatr Med 2024; 40: 91–116. https://doi.org/10.1016/j.cger.2023.09.010
3. Cao T, Tey HL, Yosipovitch G. Chronic pruritus in the geriatric population. Dermatologic Clinics 2018; 36: 199–211. https://doi.org/10.1016/j.det.2018.02.004
4. Butler DC, Berger T, Elmariah S, Kim B, Chisolm S, Kwatra SG, et al. Chronic pruritus: a review. JAMA 2024; 331: 2114–2124. https://doi.org/10.1001/jama.2024.4899
5. Farage MA, Miller KW, Berardesca E, Maibach HI. Clinical implications of aging skin. Am J Clin Dermatol 2009. https://

doi.org/10.2165/00128071-200910020-00001
6. Chung BY, Um JY, Kim JC, Kang SY, Park CW, Kim HO. Pathophysiology and treatment of pruritus in elderly. Int J Mol Sci 2020; 22. https://doi.org/10.3390/ijms22010174
7. Fourzali KM, Yosipovitch G. Management of itch in the elderly: a review. Dermatol Ther (Heidelb) 2019; 9: 639–653. https://doi.org/10.1007/s13555-019-00326-1
8. Stander S, Weisshaar E, Mettang T, Szepietowski JC, Carstens E, Ikoma A, et al. Clinical classification of itch: a position paper of the International Forum for the Study of Itch. Acta Derm Venereol 2007; 87: 291–294. https://doi.org/10.2340/00015555-0305
9. Yalçin B, Tamer E, Toy GG, Oztaş P, Hayran M, Alli N. The prevalence of skin diseases in the elderly: analysis of 4099 geriatric patients. Int J Dermatol 2006; 45: 672–676. https://doi.org/10.1111/j.1365-4632.2005.02607.x
10. Gunalan P, Puvarasan G, Indradevi R, Oudeacoumar P, Govardhan J, Damayandhi K, Jaffer NA, et al. Pattern of skin diseases in geriatric patients attending tertiary care centre. JEMDS 2017; 6: 1566–1570. https://doi.org/10.14260/Jemds/2017/344
11. Thapa DP, Jha AK, Kharel C, Shrestha S. Dermatological problems in geriatric patients: a hospital based study. Nepal Med Coll J 2012; 14: 193–195.
12. Lichtman SM. Missed opportunities in geriatric oncology research. Oncologist 2023; 28: 373–375. https://doi.org/10.1093/oncolo/oyad072
13. Valdes-Rodriguez R, Mollanazar NK, Gonzalez-Muro J, Nattkemper L, Torres-Alvarez B, Lopez-Esqueda FJ, et al. Itch prevalence and characteristics in a Hispanic geriatric population: a comprehensive study using a standardized itch questionnaire. Acta Derm Venereol 2015; 95: 417–421. https://doi.org/10.2340/00015555-1968
14. Pourhoseingholi MA, Vahedi M, Rahimzadeh M. Sample size calculation in medical studies. Gastroenterol Hepatol Bed Bench 2013; 6: 14–17.
15. Krause K, Kessler B, Weller K, Veidt J, Chen SC, Martus P, et al. German version of ItchyQoL: validation and initial clinical findings. Acta Derm Venereol 2013; 93: 562–568. https://doi.org/10.2340/00015555-1544
16. Lübke N, Meinck M, Von Renteln-Kruse W. Der Barthel-Index in der Geriatrie. Eine Kontextanalyse zum Hamburger Einstufungsmanual. Z Gerontol Geriatr 2004; 37: 316–326. https://doi.org/10.1007/s00391-004-0233-2
17. Mahoney FI, Barthel DW. Functional evaluation: the Barthel index. Md State Med J 1965; 14: 61–65. https://doi.org/10.1037/t02366-000
18. Shah S, Vanclay F, Cooper B. Improving the sensitivity of the Barthel Index for stroke rehabilitation. J Clin Epidemiol 1989; 42: 703–709. https://doi.org/10.1016/0895-4356(89)90065-6
19. Roberts HC, Denison HJ, Martin HJ, Patel HP, Syddall H, Cooper C, et al. A review of the measurement of grip strength in clinical and epidemiological studies: towards a standardised approach. Age Ageing 2011; 40: 423–429. https://doi.org/10.1093/ageing/afr051
20. Bischoff-Ferrari HA, Orav JE, Kanis JA, Rizzoli R, Schlögl M, Staehelin HB, et al. Comparative performance of current definitions of sarcopenia against the prospective incidence of falls among community-dwelling seniors age 65 and older. Osteoporos Int 2015; 26: 2793–2802. https://doi.org/10.1007/s00198-015-3194-y
21. Yesavage JA, Brink TL, Rose TL, Lum O, Huang V, Adey M, et al. Development and validation of a geriatric depression screening scale: a preliminary report. J Psychiatr Res 1982; 17: 37–49. https://doi.org/10.1016/0022-3956(82)90033-4
22. Folstein MF, Folstein SE, McHugh PR. "Mini-mental state": a practical method for grading the cognitive state of patients for the clinician. J Psychiatr Res 1975; 12: 189–198. https://doi.org/10.1016/0022-3956(75)90026-6
23. Wirtz MA, Morfeld M, Glaesmer H, Braehler E. Confirmatory analysis of the SF-12 version 2.0 scale structure in a representative German sample. Diagnostica 2018; 64: 84–96. https://doi.org/10.1026/0012-1924/a000194
24. Matterne U, Apfelbacher CJ, Loerbroks A, Schwarzer T, Buttner M, Ofenloch R, et al. Prevalence, correlates and characteristics of chronic pruritus: a population-based cross-sectional study. Acta Derm Venereol 2011; 91: 674–679. https://doi.org/10.2340/00015555-1159
25. Stander S, Schafer I, Phan NQ, Blome C, Herberger K, Heigel H, et al. Prevalence of chronic pruritus in Germany: results of a cross-sectional study in a sample working population of 11,730. Dermatology 2010; 221: 229–235. https://doi.org/10.1159/000319862
26. Liao YH, Chen KH, Tseng MP, Sun CC. Pattern of skin diseases in a geriatric patient group in Taiwan: a 7-year survey from the outpatient clinic of a university medical center. Dermatology 2001; 203: 308–313. https://doi.org/10.1159/000051778
27. Chinniah NG, Gupta M. Pruritus in the elderly: a guide to assessment and management. Aust Fam Physician 2014; 43: 710–733.
28. Sinikumpu SP, Jokelainen J, Tasanen K, Timonen M, Huilaja L. Association between pruritus and psychosocial well-being: a population-based study among 6,809 subjects. Acta Derm Venereol 2023; 103: adv00837. https://doi.org/10.2340/actadv.v103.2922
29. Joura MI, Koszorú K, Czintner D, Sárdy M. Geriatrische Dermatologie. Z Gerontol Geriatr 2023; 56: 35–41. https://doi.org/10.1007/s00391-021-02006-2
30. Clerc CJ, Misery L. A literature review of senile pruritus: from diagnosis to treatment. Acta Derm Venereol 2017; 97: 433–440. https://doi.org/10.2340/00015555-2574
31. Golpanian RS, Kim HS, Yosipovitch G. Effects of stress on itch. Clin Ther 2020; 42: 745–756. https://doi.org/10.1016/j.clinthera.2020.01.025
32. Yeom M, Ahn S, Oh JY, Kim SY, Lee H, Hahm DH, et al. Atopic dermatitis induces anxiety- and depressive-like behaviors with concomitant neuronal adaptations in brain reward circuits in mice. Prog Neuropsychopharmacol Biol Psychiatry 2020; 98: 109818. https://doi.org/10.1016/j.pnpbp.2019.109818
33. Schricker S, Heider T, Schanz M, Dippon J, Alscher MD, Weiss H, et al. Strong associations between inflammation, pruritus and mental health in dialysis patients. Acta Derm Venereol 2019; 99: 524–529. https://doi.org/10.2340/00015555-3128
34. Ferreira BR, Pio-Abreu JL, Figueiredo A, Misery L. Pruritus, allergy and autoimmunity: paving the way for an integrated understanding of psychodermatological diseases? Front Allergy 2021; 2: 688999. https://doi.org/10.3389/falgy.2021.688999
35. Konda D, Chandrashekar L, Rajappa M, Kattimani S, Thappa DM, Ananthanarayanan PH. Serotonin and interleukin-6: association with pruritus severity, sleep quality and depression severity in Prurigo Nodularis. Asian J Psychiatr 2015; 17: 24–28. https://doi.org/10.1016/j.ajp.2015.07.010
36. Steffen J, Focken N, Caliskan G. Recognizing depression as an inflammatory disease: the search for endotypes. Am J Physiol Cell Physiol 2024; 10.1152/ajpcell.00246.2024. https://doi.org/10.1152/ajpcell.00246.2024
37. Leader B, Carr CW, Chen SC. Pruritus epidemiology and quality of life. Handb Exp Pharmacol 2015; 226: 15–38. https://doi.org/10.1007/978-3-662-44605-8_2
38. Teoh YL, Teo RY, Yeo B, Lim KH, Koh MJ. Elderly hospitalised patients: the impact of itch and its prevalence. Ann Acad Med Singap 2016; 45: 134–137. https://doi.org/10.47102/annals-acadmedsg.V45N4p134
39. Kandwal M, Jindal R, Chauhan P, Roy S. Skin diseases in geriatrics and their effect on the quality of life: a hospital-based observational study. J Family Med Prim Care 2020; 9: 1453–1458. https://doi.org/10.4103/jfmpc.jfmpc_1188_19
40. Stander S, Steinke S, Augustin M, Metze D, Loser K, Baeumer D, et al. Quality of life in psoriasis vulgaris: use of the ItchyQoL questionnaire in a secukinumab phase III trial in patients with psoriasis vulgaris. Acta Derm Venereol 2019; 99: 1085–1090. https://doi.org/10.2340/00015555-3275
41. Zeidler C, Steinke S, Riepe C, Bruland P, Soto-Rey I, Storck M, et al. Cross-European validation of the ItchyQoL in pruritic dermatoses. J Eur Acad Dermatol Venereol 2019; 33: 391–397. https://doi.org/10.1111/jdv.15225
42. Love EM, Marrazzo GA, Kini S, Veledar E, Chen SC. ItchyQoL bands: pilot clinical interpretation of scores. Acta Derm Venereol 2015; 95: 114–115. https://doi.org/10.2340/00015555-1891