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Description of Uremic Pruritus in Chronic Kidney Failure Patients Undergoing Hemodialysis at Prof. Dr. Aloei Saboe Regional General Hospital

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ABSTRACT

Chronic kidney disease (CKD) is a global health problem with a steadily increasing prevalence, particularly among patients undergoing hemodialysis. One of the most frequently reported complaints is uremic pruritus, defined as a chronic itching sensation that significantly affects patients' quality of life. This study aimed to describe the characteristics of uremic pruritus in patients with chronic kidney disease undergoing hemodialysis at RSUD (Regional General Hospital) Prof. Dr. Aloei Saboe, Gorontalo City. This study employed a descriptive quantitative design using a total sampling technique involving 42 CKD patients undergoing hemodialysis who presented with uremic pruritus. Data were collected using a demographic questionnaire and the 5D Itch Scale instrument. The results showed that 3 respondents (7%) experienced mild pruritus, 24 respondents (57%) experienced moderate pruritus, and 15 respondents (36%) experienced severe pruritus. The findings indicate that uremic pruritus remains a predominant clinical problem among CKD patients undergoing hemodialysis. Consequently, increased attention to assessment and management is necessary to improve patients' quality of life.

1. INTRODUCTION

Chronic kidney disease (CKD) is a progressive and irreversible decline in kidney function, characterized by the inability of the kidneys to maintain excretory function and metabolic regulation of the body, with or without a decrease in the glomerular filtration rate <60 ml/minute/1.73 m^2 (Sembiring, 2022; Anggraini, 2022). In recent decades, CKD has become a global health problem with increasing prevalence, morbidity, and cost burden, and was ranked the 10th cause of death worldwide in 2019, with an estimated 674 million sufferers globally by 2025, especially in low- and middle-income countries (Maryadi et al., 2026; WHO, 2025).

Uremic pruritus is one of the most frequent and disruptive complications in patients with chronic kidney disease (CKD) undergoing hemodialysis, with a prevalence reaching more than 60% of patients. Therefore, it deserves to be the focus of descriptive research to describe its frequency, intensity, distribution, and impact as a preliminary step before analytical or interventional studies. Uremic pruritus is operationally defined as chronic itching not caused by a primary dermatological disease, but rather directly related to uremia and hemodialysis therapy, often multifactorial due to the accumulation of uremic toxins, inflammation, and skin xerosis. A descriptive approach was chosen to describe the actual condition of uremic pruritus, which impacts not only quality of life (sleep disturbances, depression), but also decreases hemodialysis compliance, reduces comfort during dialysis procedures, and increases the need for additional interventions by healthcare professionals.

In Indonesia, the prevalence of chronic kidney disease (CKD) reached 0.22% of the population based on the 2023 Indonesian Health Survey (SKI), with Gorontalo Province having a higher prevalence of 0.29%, and approximately 16.64% of patients undergoing hemodialysis. Hemodialysis is the primary renal replacement therapy for end-stage CKD, but it is often

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accompanied by various complaints, one of which is uremic pruritus (Amirullah et al., 2023; Sembiring et al., 2020). Uremic pruritus is a chronic itching sensation experienced by more than 60% of hemodialysis patients and significantly impacts quality of life, including sleep disturbances, fatigue, depression, anxiety, and decreased social functioning (Nakhaee et al., 2021; Abdelghfar et al., 2021). This condition is multifactorial, influenced by uremic toxin accumulation, inflammation, mineral deficiencies, skin xerosis, and psychosocial factors, with pathophysiological mechanisms that are not fully understood (Sembiring et al., 2020; Molina et al., 2023).

Although various pharmacological and non-pharmacological approaches have been developed, the management of uremic pruritus remains a clinical challenge due to varying therapeutic efficacy and limited strong evidence (Astriya et al., 2024). Research on uremic pruritus in Gorontalo is still very limited. Therefore, this study aims to describe uremic pruritus in chronic kidney disease (CKD) patients undergoing hemodialysis at Prof. Dr. Aloei Saboe Regional Hospital as a basis for developing more effective and contextual nursing interventions.

Nurses play a crucial role in early identification of uremic pruritus through routine screening, severity monitoring using instruments such as the 5D Itch Scale, and non-pharmacological interventions such as education on the use of skin moisturizers. Limited local data constitutes a major research gap due to the unavailability of specific information regarding uremic pruritus in chronic kidney disease (CKD) patients undergoing hemodialysis at Prof. Dr. Aloei Saboe Regional Hospital or the Gorontalo region, which have different patient and service characteristics due to demographic variations and service access. Therefore, this study aims to describe the condition of uremic pruritus as a basis for more appropriate and contextual nursing care planning.

2. METHOD

This quantitative study with a descriptive design aims to describe the incidence of uremic pruritus in patients with chronic kidney disease undergoing hemodialysis and also describe the characteristics of uremic pruritus based on the instruments used. The study was conducted at Prof. Dr. Aloei Saboe Regional Hospital, Gorontalo City, from November to December 2025, and also adjusted to the routine hemodialysis schedule.

The population in this study was all 70 patients with chronic kidney disease undergoing hemodialysis at Prof. Dr. Aloei Saboe Regional Hospital. Based on the initial identification results, there were 42 patients indicated to have uremic pruritus and all of them were sampled using a total sampling technique. The sample criteria for CKD patients were those who had undergone hemodialysis for ≥3 months, were adults, had abnormal uremic levels or exceeded 50 mg/dl, and patients with emergency/critical conditions.

The variable in this study was uremic pruritus, defined as an itchy sensation in patients with chronic kidney disease undergoing hemodialysis. Uremic pruritus was measured using the 5D Itch Scale, which encompasses five dimensions: duration, degree, progression, disability, and distribution of affected body areas. The total score is obtained by summing the scores for each dimension and is categorized as none, mild, moderate, and severe. The selection of the 5D Itch Scale is a methodological strength, as it encompasses multidimensional aspects of pruritus and has been proven valid and reliable. Data were collected using questionnaires administered directly to respondents after obtaining informed consent, with respondents completing the questionnaires while undergoing hemodialysis therapy. Secondary data were obtained from hospital medical records.

3. RESULT AND DISCUSSION

Result

Description of Respondent Characteristics

Table 1. Based on Respondents' Age

Age (Years)	N	%
26-35 (Adult)	1	2
36-45 (Late Adulthood)	7	17
46-55 (Early elderly)	**17**	**40**
56-65 (Late elderly)	13	31
> 65 (Old age)	4	10
Total	42	100

Table 2. Based on Respondent's Gender

Gender	N	%
Male	18	43
Female	**24**	**57**
Total	42	100

Table 3. Based on the Length of Time Undergoing HD by Respondents

Duration of HD	N	%
3-5 Months	13	31
6-11 Months	8	19
1-3 Years	**20**	**48**
>3 Years	1	2
Total	42	100

Table 4. Based on Respondents' Comorbidities

Comorbidities	N	%
Diabetes mellitus	6	14
Hypertension	**25**	**60**
Diabetes mellitus & Hypertension	5	12
Hepatitis B / C	2	5
Etc	4	10
Total	42	100

Table 5. Based on Respondents' Occupations

Work	N	%
Not working/housewife	**19**	**45**
Private sector employee	1	2
Government employees	10	24
Self-employed/Owner of own business	3	7
Retired	9	21
Total	42	100

Table 6. Based on Respondents' Last Education

Last education	N	%
Elementary school	6	14
Junior high school	5	12
Senior High School	**18**	**43**
Diploma (D1-D3)	2	5
Bachelor	9	21
Postgraduate	2	5
Total	42	100

Pruritus Measurement Results Based on the 5D Itch Scale

Table 7. Uremic Pruritus Measurement Results Based on the 5D Itch Scale

Uremic Pruritus Category	N	%
Mild (6-14)	3	7
Medium(15-24)	**24**	**57**
heavy (25-35)	15	36
Total	42	100

Table 8. Description of Uremic Pruritus Based on Respondents' Age

Age (Years)	Uremic Pruritus			Total n (%)
	Mild n (%)	Medium n (%)	heavy n (%)	
26-35 (Adult)	0 (0)	0 (0)	1 (25)	1 (100)
36-45 (Late Adulthood)	1 (14,3)	4 (57)	2 (28,6)	7 (100)
46-55 (Early elderly)	**3 (17,6)**	**9 (52,9)**	**5 (29,5)**	**17 (100)**
56-65 (Late elderly)	0 (0)	8 (61,5)	5 (38,5)	13 (100)
> 65 (Old age)	0 (0)	3 (75)	1 (25)	4 (100)

Table 9. Description of Uremic Pruritus Based on Respondent's Gender

Gender	Uremic Pruritus			Total n (%)
	Mild n (%)	Medium n (%)	heavy n (%)	
Male	2 (11,1)	11 (61,1)	5 (27,8)	18 (100)
Female	**2 (8,3)**	**13 (54,2)**	**9 (37,5)**	**24 (100)**

Table 10. Description of Uremic Pruritus Based on Respondents' Duration of HD

Duration of HD	Uremic Pruritus			Total n (%)
	Mild n (%)	Medium n (%)	heavy n (%)	
3-5 Months	2 (15,4)	6 (46,2)	5 (38,5)	13 (100)
6-11 Months	0 (0)	4 (50)	4 (50)	8 (100)
1-3 Years	4 (20)	14 (70)	2(10)	20 (100)
>3 Years	0 (0)	1 (100)	0 (0)	1 (100)

Table 11. Description of Uremic Pruritus Based on Respondents' Comorbidities

Comorbidities	Uremic Pruritus			Total n (%)
	Mild n (%)	Medium n (%)	heavy n (%)	
Diabetes mellitus	0 (0)	5 (83,3)	1 (16,7)	6 (100)
Hypertension	**4 (16)**	**12 (48)**	**9 (36)**	**25(100)**
Diabetes mellitus & Hypertension	0 (0)	4 (80)	1 (20)	5 (100)
Hepatitis B / C	0 (0)	2 (100)	0 (0)	2 (100)
Etc	0 (0)	1 (25)	3 (75)	4 (100)

Table 12. Description of Uremic Pruritus Based on Respondents' Occupation

Work	Uremic Pruritus			Total n (%)
	Mildn n(%)	Medium n (%)	heavy n (%)	
Not working/housewife	**2 (10,5)**	**10 (52,6)**	**7 (36,8)**	**19 (100)**
Private sector employee	0 (0)	1 (100)	0 (0)	1 (100)
Government employees	0 (0)	5 (50)	5 (50)	10 (100)
Self-employed/Owner of own business	1 (33,3)	1 (33,3)	1 (33,3)	3 (100)
Retired	1 (11,1)	6 (66,7)	2 (22,2)	9 (100)

Table 13. Description of Uremic Pruritus Based on Respondents' Last Education

Last education	Uremic Pruritus			Total n (%)
	Mildn n (%)	Medium n (%)	heavy n (%)	
Elementary school	0 (0)	6 (100)	0 (0)	6 ((100)
Junior high school	1 (20)	1 (20)	3 (60)	5 (100)
Senior High School	**3 (16,7)**	**7 (38,9)**	**8 (44,4)**	**18 (100)**
Diploma (D1-D3)	0 (0)	1 (50)	1 (50)	2 (100)
Bachelor	0 (0)	7 (77,8)	2 (22,2)	9 (100)
Postgraduate	0 (0)	2 (100)	0 (0)	2 ((100)

Management of Uremic Pruritus

In this study, researchers also sought to obtain data on treatment options available to patients if uremic pruritus occurs. This was to provide additional data not covered by the 5D Itch Scale questionnaire used by the researchers, as shown in Table 14.

Table 14. Results of Action When Itching Appears

Actions to Take When Itching Appears	N	%
Apply moisturizing lotion/ointment	2	5
Taking antihistamine/prescription medication	2	5
Gently scratch/stroking	7	17
Warm water/mild soap bath	2	5
Consult a health professional if itching persists/is severe	3	7
Scratching hard with hands	**20**	**48**
Scratching hard with a hard object	6	14
Total	42	100

Discussion

These findings indicate that moderate-severe pruritus predominates (57% moderate, 36% severe, and 7% mild) this condition reflects persistent accumulation of uremic toxins despite hemodialysis, with treatment implications in the form of the need for routine screening and early intervention to prevent secondary complications such as skin infections.

The results of the study showed that uremic pruritus was most commonly experienced by respondents in early elderly age (46–55 years), followed by late elderly age (56–65 years). This condition is associated with a progressive decline in kidney function and accumulation of uremic toxins with age, as well as physiological changes in the skin such as xerosis that exacerbate the itching sensation (Feronika et al., 2023). These findings are in line with research by Hermawati and Mulyaningsih (2024) and Prabasuari et al. (2024) which stated that uremic pruritus is more frequent and more severe in the elderly group due to longer disease duration and decreased skin regeneration function. This group is a priority for nursing screening for prevention.

Most respondents experiencing uremic pruritus were female. Severe pruritus was also more common in female respondents than in male respondents. This difference is thought to be related to hormonal influences on the inflammatory response and skin sensitivity (Rathi & Ramachandran, 2020; Martin et al., 2020). However, gender was not a major determinant compared to clinical factors such as hemodialysis duration and comorbidities, as supported by literature showing variation in results between studies (Nadarajah et al., 2018; Wenjuan, 2019).

Most respondents had undergone hemodialysis for 1–3 years, and this group showed a high prevalence of uremic pruritus. Severe pruritus was more prevalent in patients with early hemodialysis duration (<1 year), which is associated with suboptimal uremic toxin clearance and metabolic imbalance (Hardjono, 2019; Wahyuni et al., 2019). These findings support the notion that the early to mid-phase of hemodialysis is a period with a higher risk of pruritus due to the accumulation of urea and β2-microglobulin (Siahaan, 2016). It can be concluded that this period is a high risk due to suboptimal toxin clearance and metabolic imbalance, requiring intensive monitoring.

Hypertension is the most common comorbidity and is most frequently associated with severe uremic pruritus. Chronic hypertension can accelerate the accumulation of uremic toxins and increase systemic inflammation, which stimulates itch receptors in the skin (Kimata et al., 2019; Christabell et al., 2020). These findings align with those of Rosdina (2022) and Alex et al. (2021), who stated that hypertension significantly contributes to the severity of uremic pruritus compared to other comorbidities, making it a priority clinical factor in assessment.

Unemployed respondents or housewives were the largest group experiencing uremic pruritus. However, this condition was more related to age, duration of hemodialysis, and comorbidities than to the type of employment itself (Yovalwan & Arofiati, 2023; Nadarajah et al., 2018). This suggests that employment is not a direct factor causing pruritus, but rather reflects the respondents' demographic characteristics and serves as a descriptive support, rather than a direct factor, due to the influence of age and comorbidities. Most respondents had a high school education or equivalent and showed a high prevalence of uremic pruritus. However, education level was not directly related to pruritus severity. Clinical factors such as advanced age, hypertension, and duration of hemodialysis played a more significant role in the development of uremic pruritus and were descriptive rather than direct factors, as they were influenced by age and comorbidities (Mahardian et al., 2021; Alex et al., 2021).

Measurement results showed that the majority of respondents experienced moderate (57%) and severe (36%) pruritus, with no respondents being free from pruritus. The high proportion of moderate and severe pruritus confirms that uremic pruritus is a significant clinical problem in hemodialysis patients and has the potential to reduce quality of life (Kimata et al., 2019; Nadarajah et al., 2018). Most respondents managed pruritus by vigorously scratching with their hands or hard objects, while the use of pharmacological or topical therapies was low. This behavior increases the risk of skin damage and secondary infections, necessitating ongoing education by nurses regarding safe and effective pruritus management (Ko et al., 2023).

This study has limitations in the form of a descriptive design that cannot determine causal relationships, a limited sample size (42 respondents from one location), and reliance on self-reporting of the 5D Itch Scale, which is susceptible to recall bias. These results serve as the basis for developing nursing care for uremic pruritus, including a screening protocol for elderly patients/comorbidities, education on safe behaviors, and non-pharmacological interventions to improve adherence and quality of life for hemodialysis patients in the local context of Gorontalo.

4. CONCLUSION

Based on the results of a study on 42 chronic kidney failure patients undergoing hemodialysis at Prof. Aloei Saboe Regional Hospital, all respondents (100%) experienced uremic pruritus. Measurements using the 5D Itch Scale showed that the majority of respondents were in the moderate pruritus category (24 respondents), followed by severe pruritus (15 respondents) and mild pruritus (3 respondents). Uremic pruritus was most commonly found in the 46–55 age group and was more dominantly experienced by women. The most common comorbidity was hypertension. Based on education and occupation, most respondents had a high school education or equivalent and were unemployed/housewives, which was related to age, length of hemodialysis, and comorbidities. Most respondents managed pruritus by scratching vigorously, while the utilization of safer treatments was still low. The high proportion of moderate to severe pruritus indicates the need for targeted surgical intervention to improve the comfort and quality of life of hemodialysis patients.

5. REFERENCES

Abdelghfar et al. (2021). Effect of Aromatherapy on Uremic Pruritus among Patients Undergoing Hemodialysis. IOSR Journal of Nursing and Health Science, 06(02), 22–30. https://doi.org/10.9790/1959-0602082230

Agustina, E. a. (2025). Jurnal Ilmiah Kesehatan Delima. 8(1), 361–365.

Christabell, R. J., Kedokteran, F., Kristen, U., & Wacana, D. (2020). Gambaran pasien gagal ginjal kronik yang menjalani hemodialisis dan mengalami pruritus di rumah sakit bethesda yogyakarta.

Collins, S. P., Storrow, A., Liu, D., Jenkins, C. A., Miller, K. F., Kampe, C., & Butler, J. (2021). Metode penelitian kesehatan.

Darsini, & Cahyono, E. A. (2023). Kualitas Hidup Pasien Hemodialisis Selama Pandemi Covid-19 ; Studi Klinis Di Ruang Hemodialisa, Rumah Sakit Gatoel Kota Mojokerto. Jurnal Keperawatan, 26–46.

Karaaslan, T., & Pembegul, I. (2023). Relationship between symptom burden and dialysis adequacy in patients with chronic kidney disease undergoing hemodialysis. Northern Clinics of Istanbul, 10(4), 435–443. https://doi.org/10.14744/NCI.2023.01799

Maryadi, M., Aulawi, K., & Noviana, U. (2026). Journal of Associated Medical Sciences Factors affecting hemoglobin levels of patients with end-stage kidney disease in the maintenance phase : A prospective observational study. 176–183. https://doi.org/10.12982/JAMS.2026.022

Muslimah et all. (2025). Adekuasi Hemodialisis Antara Pasien Menggunakan Akses Catheter Double Lumen (CDL) Dengan Akses Arteriovenous Shunt (AV SHUNT). 7(Cdl), 9–15.

Musso, C. G., & Oreopoulos, D. G. (2022). Aging and physiological changes of the kidneys including changes in glomerular filtration rate. Nephron - Physiology, 119(SUPPL. 1), 1–5. https://doi.org/10.1159/000328010

Prabasuari et., A. (2024). Hubungan usia, jenis kelamin, stadium hipertensi, dan diabetes melitus dengan kejadian penyakit ginjal kronis di rsud provinsi nusa tenggara barat. 02(02), 154–163.

Rahmi, Y. O. (2020). Faktor-faktor yang mempengaruhi Uremic Pruritus pada Pasien yang Menjalani Terapi Hemodialisa Factors Influencing Uremic Pruritus among Patients Undergoing Hemodialysis Therapy. 1–10.

Raman, M., Middleton, R. J., Kalra, P. A., & Green, D. (2022). Estimating renal function in old people: an in-depth review. International Urology and Nephrology, 49(11), 1979–1988. https://doi.org/10.1007/s11255-017-1682-z

Sembiring, F., Nasution, S. S., & Ariani, Y. (2020b). Overview of Uremic Pruritus in Patients Withh Chronic Kidney Failure in the Hemodialysis Unit Haji Adam Malik General Hospital Medan. Jurnal Perawat Indonesia, 4(1), 243.

Soegiyono. (2011). Metode Penelitian Kuantitatif, Kualitatif dan R&D.

Wu, H. Y., Peng, Y. Sen, Chen, H. Y., Tsai, W. C., Yang, J. Y., Hsu, S. P., Pai, M. F., Lu,

H. M., Chiang, J. F., Ko, M. J., Wen, S. Y., & Chiu, H. C. (2022). A comparison of uremic pruritus in patients receiving peritoneal dialysis and hemodialysis. Medicine (United States), 95(9), 1–6. https://doi.org/10.1097/MD.0000000000002935

Yovalwan, T., & Arofiati, F. (2023). A Scoping Review: Factors Associated with Pruritus in CKD (Chronic Kidney Disease) Patients Undergoing Dialysis. Jurnal Aisyah : Jurnal Ilmu Kesehatan, 8(2), 159–164. https://doi.org/10.30604/jika.v8i2.1763