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Research Article

Support Relationship Family, Quality Sleep, with Level Stres on Patient Fail Kidney Chronicle Which Undergo Therapy Hemodialysis

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Abstract. Chronic kidney disease (CKD) is a condition in which the kidneys fail to maintain metabolic function and fluid and electrolyte balance due to progressive damage to the kidney structure, with the main symptom being the accumulation of metabolic waste in the blood. Treatment efforts for chronic kidney disease include increasing family support, maintaining sleep quality, and reducing stress levels to stabilize fluid balance in CKD patients. This study aimed to determine the relationship between family support, sleep quality, and stress levels in CKD patients undergoing hemodialysis therapy. Purposive *sampling, cross-sectional* techniques, and analytical observation were used. In this study, which involved 97 participants, the study found that there was good family support (85.6 %), good sleep quality (85.6%). and good stress levels (85.6%). *Chi-square* analysis obtained a *p-value* of 0.001 (<0.05), indicating a significant relationship between family support, sleep quality, and stress levels in CKD patients undergoing hemodialysis therapy at Sultan Agung Islamic Hospital, Semarang.

Keywords: Chronic Kidney; Family Support; Hemodialysis Therapy; Sleep Quality; Stress Levels

1. Background

(irreversible) decline in kidney function that requires dialysis or a kidney transplant (Djamaludin et al., 2022). CKD is a non-communicable disease with a high prevalence and poor prognosis. CKD occurs due to damage to the kidney's filtration and secretion processes, which ultimately leads to kidney failure. CKD is caused by various diseases such as anemia, hypertension, and diabetes mellitus (Shaleha et al., 2023).

According to 2021 data from the World Health Organization (WHO), CKD affects approximately 15% of the global population. It is the cause of death for 1.2 million people, with approximately 254,028 deaths recorded specifically that year. (Muryani et al., 2025). The results of the 2018 Basic Health Research (Riskesdas) revealed that the prevalence of CKD in Indonesia was recorded at 0.38%, or approximately 3.8 out of 1,000 residents. Approximately 60% of identified patients required dialysis therapy. This figure shows a lower incidence rate compared to the prevalence in several other countries, and also far below the 2006 PERNEFRI findings, which reported a prevalence of 12.5%. Regionally, the highest prevalence was found in North Kalimantan (0.64%), while West Sulawesi recorded the lowest rate (0.18%). (Ministry of Health, 2023). In Central Java Province itself, the percentage of CKD incidence was 0.7% of the total population in Central Java (Defi, 2024). In Semarang City PGK reach 9,665 person. From data results record medical PGK cases at Sultan Agung Islamic Hospital Semarang from July to September 2025, there were 338 cases, with the highest incidence rate being 24-70 years old and female.

Hemodialysis is a kidney replacement therapy that uses a special device called *a dialyzer*. This device functions as an artificial kidney to filter metabolic waste from the blood

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and balance fluids and electrolytes in CKD patients. (Erpiyana et al., 2024). Loss of kidney function requires renal replacement therapy. Hemodialysis is one therapy for end-stage CKD patients to maintain life. The hemodialysis process aims to remove waste from the blood and excrete it from the body through an artificial kidney (Ratnaningsih et al., 2021). Although hemodialysis is crucial for maintaining the health of CKD patients, However therapy This can cause flavor Sick And discomfort, which can lower quality life patient (Wahyuni et al., 2025).

Family support in various healthcare activities for CKD patients plays a crucial role in the success of their treatment. Family support significantly improves psychological well-being, maintains physical health, and enhances the patient's quality of life (Safarino, 2022). Family support encompasses the encouragement individuals receive through interpersonal relationships, including attention, emotional support, and constructive assessment. Family support can be demonstrated through empathy, attention, motivation, advice, and the provision of necessary information. Family support impacts those undergoing hemodialysis therapy, helping them manage stress and maintain a stable health condition (Ayumar et al., 2022).

A preliminary study at Sultan Agung Islamic Hospital Semarang revealed an increase in the number of patients undergoing hemodialysis therapy from year to year. In the year of 2024, recorded there is 107 patients, while in 2025 it will increase to 172 patients. Increased deaths due to CKD This push various effort, Wrong the only one is promotion health. The purpose of this promotion is to increase patient knowledge regarding CKD treatment through hemodialysis, the treatment process, and the benefits of undergoing hemodialysis therapy, so that patients clearly understand their disease (Syihab et al., 2023). The findings of Putra et al. (2025) are in line with the increase in CKD cases. At Buleleng Regional Hospital, the number of CKD patients fluctuated from 11 people (2020) to 9 (2021) before increasing to 15 (2022). However, there was a sharp increase in 2023 to 31 patients. In 2024, recorded cases remained high, at 30 people. Overall, there were 231 CKD patients undergoing hemodialysis therapy at Buleleng Regional Hospital.

Referring to the results of observations on hemodialysis therapy patients at Sultan Agung Islamic Hospital in Semarang, there were 15 patients. Five PGK patients were accompanied by their families to the hemodialysis room, who were only escorted to the hemodialysis room and then picked up again after the procedure. hemodialysis finished 3 person, And 7 patient Which leave alone without accompanied by family members. This is consistent with the findings of Amananti (2024) who observed seven patients undergoing afternoon hemodialysis sessions (1:00 PM–5:00 PM WIB). From these observations, only two patients were fully accompanied by family members, three patients were simply dropped off and picked up without assistance during the process, and two other patients arrived independently. Thus, it can be concluded that the majority of patients on the afternoon schedule did not have family support during therapy.

Sleep quality in CKD patients is a crucial factor in the success of hemodialysis therapy. Most CKD patients experience various sleep disorders, and these conditions can develop into more serious problems. such as prolonged insomnia and a decreased quality of life. If CKD patients undergoing hemodialysis experience sleep disturbances, kidney function can worsen, as sleep plays a key role in regulating kidney function. Furthermore, hormone secretion in the renin-angiotensin-aldosterone system is optimal when sleep requirements are met (Sutiyo et al., 2024).

The results of observations of the prevalence of CKD patients undergoing hemodialysis therapy showed that out of 15 people, 10 patients complained of difficulty sleeping, because the patients felt tired, had a lot of thoughts, and the patients experienced symptoms of nausea, vomiting, and itching, which made the patients difficult to sleep. There were 5 patients who were able to sleep during the therapy process. The results of observations by (Widianti, 2023), of 10 patients, found that 8 out of 10 patients complained of difficulty sleeping, fatigue, and boredom.

Stress levels in CKD patients are the psychological pressure experienced in response to long-term CKD, the hemodialysis process, and the physical, emotional, social, and economic changes that arise from the disease. Patients who must undergo hemodialysis throughout their lives are likely to experience various changes in various aspects of their lives, including their health and economic situation, and the hemodialysis process itself, which can trigger stress (Kintan et al., 2023).

Based on the observation results, the prevalence in PGK patients shows that from 15 person, 8% in among them No experience stress. They Obtaining sufficient psychological support, receiving support and attention from family, and creating a positive environment while undergoing hemodialysis therapy. Some patients experience stress because they have only been undergoing hemodialysis therapy for one month, so they still have difficulty accepting the fact that they have CKD. Another factor causing stress is feeling difficult due to lack of support from the patient's family. The results of research from (Putra et al., 2025), stress levels in patients, where there are 6 people (20%) with normal stress levels, 9 people (30%) experience mild stress, 6 people (20%) experience stress currently, 9 person (30%) experience stress heavy, And No patients (0%) experienced severe stress. Most PGK patients experienced stress.

Based on the results of observations in the hemodialysis room at UKI Hospital, Jakarta, The majority of patients are accompanied by family members during hemodialysis therapy. Families provide instrumental support in the form of providing information about hemodialysis, assisting with transportation, and meeting the patient's daily needs. Furthermore, regular sleep can help reduce stress levels in hemodialysis patients. Emotional support is also provided by families through comfort and appreciation in the form of attention, affection, and empathy, all of which contribute to maintaining sleep quality and reducing stress in hemodialysis patients (Yasmine, 2024).

Family support includes accompanying the patient during therapy, encouraging the patient to undergo regular hemodialysis therapy, assisting with transportation, and meeting the patient's needs. This can improve the patient's sleep quality and reduce stress levels. Forms of family support include: Emotional support involving love, trust, attention, and affection can improve a patient's psychological well-being, thereby ensuring adequate sleep quality and reducing stress. By combining these three factors, CKD patients can undergo hemodialysis therapy regularly and maintain optimal health (Amananti, 2024).

2. Theoretical Study

Chronic Kidney Disease (CKD) is a progressive condition characterized by a decline in kidney function, ultimately leading to failure to filter blood, excrete excess fluid and electrolytes, maintain blood chemistry, and produce urine. CKD is defined as kidney damage *lasting* more than three months. CKD occurs due to a slow, continuous, and irreversible decline in kidney function (especially in the nephron unit) caused by long-term factors (Dafriani et al., 2022). The following factors can help manage CKD:

Family Support

Family support, as explained by Belay (2022), refers to the involvement of family members in providing assistance to individuals. Its primary form is emotional support, expressed through affection, trust, and attention. Furthermore, this factor encompasses four aspects, including:

a. Instrumental support: in the form of concrete and practical assistance,
b. Informational support: as a source and transmitter of accurate information,
c. Emotional support: as a safe space for rest, recovery, and
d. Award support.

Sleep Quality

Sleep quality is defined as an individual's ability to initiate and maintain sleep, as evaluated by sleep duration and the presence or absence of sleep-related complaints. It is also associated with changes in cerebral blood flow, increased cortical activity, higher oxygen consumption, and epinephrine release. During sleep, the brain processes information acquired throughout the day. Sleep deprivation can cause feelings confused, suspicious, And easy experience stress (Apriandari et al., 2024).

Stress level

Stress is the most common psychological disorder and can significantly impact a person's mental well-being. The greater the gap or pressure an individual experiences, the higher the perceived stress level. In hemodialysis patients, stress is a major psychological issue affecting quality of life. them, with widespread negative impacts on social, economic and welfare aspects. psychological. Stress can be interpreted as a condition in body who responded pressure, mentally sound and physique, Which its nature non-specific. In addition,

stress is a person's behavioral response in facing and adapting to pressure, whether originating from within oneself or from the external environment.

3. Research Methods

The research method used is quantitative, with a *cross-sectional analytical observational design*. The purpose of the study is to analyze the relationship between family support and sleep quality with stress levels in CKD patients undergoing hemodialysis therapy. The population in this study were all CKD patients at Sultan Agung Islamic Hospital Semarang, from October to December in 2025, totaling 112 people. The sampling technique used " *non-probability" sampling* with the " *purposive sampling" method*. The sample size was determined as many as 97 people based on the calculation of the " *Slovin" formula*. Data analysis was carried out using the " *chi-square test"*.

The instrument in this study used a questionnaire. Data collection included demographic data sheets and medical records to identify the characteristics of the respondents. Specifically, variables were measured using: (1) a family support questionnaire, (2) a sleep quality questionnaire " *Pittsburgh Sleep Quality Index"* (PSQI), and (3) a stress level questionnaire " *Perceived Stress Scale* " (PSS), which have been tested for validity and reliability with valid and reliable results.

4. Results And Discussion

Table 1. Frequency distribution of age, gender, education, occupation, And long suffer PGK at Sultan Agung Islamic Hospital Semarang in December 2025 (n=97).

Variables	Frequency (f)	Percentage (%)
Age		
18-30 Year	22	22.7
31-40 Year	18	18.6
41-50 Year	26	26.8
51-60 Years	31	32.0
Total	**97**	**100.0**
Type sex		
Man	40	41.2
Woman	57	58.8
Total	**97**	**100.0**
Education final		
Elementary School	21	21.6
JUNIOR HIGH SCHOOL	22	227
SENIOR HIGH SCHOOL	37	38.1
Bachelor	17	17.5
Total	**97**	**100.0**
Work		
civil servant	7	7.2
Housewife	24	24.7
Self-employed	34	35.1
Teacher	16	16.5
No Work	16	16.5
Total	**97**	**100.0**
Long suffer		
<1 year	53	54.6
≥1 year	44	45.4
Total	**97**	**100.0**

The results of table 4.1 show that the majority of PGK respondents were aged 51-60 years, amounting to 31 people (32.0%), with the most common gender being female, namely 57 people (58.8%). PGK sufferers with the highest level of education were high school, amounting to 37 people (38.1%). PGK sufferers with the most jobs were self-employed, amounting to 34 people (35.1%), and PGK sufferers with the longest duration of suffering were <1 year, amounting to 53 people (54.6%).

Table 2. Distribution of frequency of family support, sleep quality, and stress levels of respondents in Sultan Agung Islamic Hospital Semarang in December 2025 (n=97).

Variables	Frequency (f)	Percentage (%)
Family Support		
Good	83	85.6
Enough	12	12.4
Not enough	2	2.1
Total	**97**	**100.0**
Sleep Quality		
Good	83	85.6
Bad	14	14.4
Total	**97**	**100.0**
Stress Level		
Light	83	85.6
Currently	12	12.4
Heavy	2	2.1
Total	**97**	**100.0**

The results of table 4.2 show that the frequency distribution of CKD sufferers with good family support compliance is 83 people (85.6%), the number of CKD sufferers with sufficient family support is 12 people (12.4%), and the number of CKD sufferers with insufficient family support is 2 people (2.1%). The frequency distribution of CKD sufferers with good sleep quality is 83 people (85.6%), and the number of CKD sufferers with poor sleep quality is 14 people (14.4%). The frequency distribution of CKD sufferers with mild stress levels is 83 people (85.6%), the number of CKD sufferers with moderate stress levels is 12 people (12.4%), and the number of CKD sufferers with severe stress levels is 2 people (2.1%).

Table 3. Frequency distribution of the relationship between family support and stress levels at Sultan Agung Islamic Hospital, Semarang, in December 2025 (n=97).

	Stress Level								
Family Support	**Light**		**Currently**		**Heavy**		**Total**		**P value**
	N	**%**	**N**	**%**	**N**	**%**	**N**	**%**	
Good	83	71.0%	0	10.3%	0	1.7%	83	100.0%	
Enough	0	10.3%	12	1.5%	0	0.2%	12	100.0%	**0.001**
Not enough	0	1.7%%	0	0.2%	2	0.0%	2	100.0%	
Total	83	85.6%	12	12.4%	2	2.1%	97	100.0%	

The results of Table 4.4 show that family support with good criteria at the mild stress level was 83 people (71.0%), family support with sufficient criteria at the moderate stress level was 12 people (1.5%), while family support with insufficient criteria at the severe stress level was 2 people (0.0%). The results of *the chi-square test* show that the p value = 0.001 < 0.05, which means there is significant relationship between family support and stress levels in PGK patients.

Table 4. Distribution frequency Connection sleep quality with Stress levels at Sultan Agung Islamic Hospital Semarang in December 2025 (n=97)

	Stress level								
Sleep Quality	**Light**		**Currently**		**Heavy**		**Total**		**P value**
	N	**%**	**N**	**%**	**N**	**%**	**N**	**%**	
Good	82	71.0%	0	10.3%	1	1.7%	83	100.0%	**0.001**
Bad	1	12.0%	12	1.7%	1	0.3%	14	100.0%	
Total	83	85.6%	12	12.4%	2	2.0%	97	100.0%	

The results of Table 4.4 above show that the quality of sleep with good criteria at mild stress levels was 82 people (71.0%), the quality of sleep with good criteria at severe stress levels was 1 person (1.7%), the quality of sleep with poor criteria at mild stress levels was 1 person (12.0%), the quality of sleep with poor criteria at moderate stress levels was 12 people (1.7%), while the quality of sleep with poor criteria at severe stress levels was 1 person (0.3%).

The results of the *chi square test* are *p value = 0.001 < 0.05* which means there is significant relationship between sleep quality and stress levels in PGK patients.

The relationship between family support and stress levels in PGK patients

The results of the Chi-Square test analysis showed a significant relationship between family support and stress levels in CKD patients (p-value = 0.001 < 0.05). Based on these results, the null hypothesis (H_0) was rejected and the alternative hypothesis (H_a) was accepted, confirming that there is a relationship between family support and stress levels in CKD patients.

This research or study is in line with the study by (Cumayunaro, 2024) , which showed that the analysis results obtained from the Kendall's Tau test showed a statistically significant correlation between family support and stress levels in chronic kidney disease patients undergoing hemodialysis therapy, as evidenced by a p-value (0.00 > 0.05). Thus, a relationship is established between family support and stress levels in CKD.

This study is also in line with the study conducted by (Novitasari et al., 2023) , with the results of the study using the Spearman Rho Rank test producing a ϱ value of 0.000 (ϱ < 0.05), which leads to the conclusion that there is a significant relationship between family support and stress levels among CKD patients.

Families play a crucial role in providing support to CKD patients undergoing hemodialysis, including helping restore their enthusiasm for life, which can be reduced by stress and physical and psychological exhaustion. Family support can alleviate emotional distress, thereby lowering stress levels and increasing motivation to consistently undergo therapy. Furthermore, families play a role in creating a conducive and comfortable environment that supports the patient's recovery process. Family involvement also contributes to the success of healthcare services, including medical procedures, prevention, treatment, and patient care, with the ultimate goal of improving the quality of life of CKD patients (Primasari et al., 2022) .

Family support plays a crucial role in influencing stress levels in CKD patients. Patients who require lifelong hemodialysis therapy tend to experience psychological distress due to lifestyle changes, uncertainty about their health, and feelings of being a burden on their families. Family support, whether in the form of emotional support, attention, or practical assistance, can make patients feel cared for, loved, and needed. This directly helps patients manage stress, reduce anxiety, and increase self-confidence and motivation to consistently undergo therapy. Research shows that the more optimal family support provided according to the patient's needs, the lower the stress levels experienced, thus making family support an important protective factor in maintaining the psychological well-being of CKD patients (Darsini, 2022) .

The relationship between sleep quality and stress levels in PGK patients.

The results of the *chi-square test* found a significant relationship between sleep quality and stress levels in CKD patients. The *p -value A value* of 0.001, less than 0.05, indicates a significant relationship. Therefore, Ho is rejected and Ha is accepted, indicating a relationship between sleep quality and stress levels in CKD patients.

Based on research (Hairun et al., 2025) , the analysis results showed a p-value of 0.002 (α < 0.05) with a positive correlation. This proves a significant relationship between stress levels and sleep quality in chronic kidney disease patients undergoing hemodialysis. This finding is consistent with the results of a previous study by (Putra et al., 2023) , which also stated a relationship between the two variables.

Based on the findings of a study (Pradana et al., 2024) , a significant correlation was found between stress levels and sleep quality in chronic kidney failure patients undergoing hemodialysis therapy at Hasanuddin University Hospital. This finding is supported by a p-value of 0.001 and a correlation coefficient (r) of 0.662. These results demonstrate a strong positive relationship, where increasing stress levels are directly proportional to increasing PSQI scores (an indicator of poor sleep quality). Therefore, it can be concluded that the higher the stress level experienced by patients, the lower their sleep quality tends to be. Conversely, decreasing stress levels are associated with improved sleep quality.

Referring to the research results, it was concluded that sleep quality has a significant relationship with stress levels in CKD patients. CKD patients undergoing hemodialysis therapy tend to experience sleep disturbances due to physiological changes, discomfort during and after the procedure, and long-term psychological burdens. Disturbances in sleep quality, such as difficulty falling asleep, frequent nighttime awakenings, and suboptimal sleep

duration, can increase patient stress levels. Conversely, high stress levels also contribute to decreased sleep quality by increasing anxiety and emotional tension. This indicates a reciprocal relationship between sleep quality and stress levels. Therefore, meeting the need for adequate sleep plays a crucial role in reducing stress levels and improving the physical and psychological well-being of CKD patients (Siahaya et al., 2022)

5. Conclusion And Suggestions

The results of the research conducted by the author at Sultan Agung Islamic Hospital Semarang show that PGK patients have good family support, good sleep quality, and good stress levels. Based on the research that has been conducted, there is a relationship between family support, sleep quality, and stress levels in PGK patients with a *p* value *of* 0.001 or *p value* <0.05 (a significant relationship, Ho is rejected and Ha is accepted).The results of this study are expected to increase the understanding and insight of Nursing students regarding the relationship between family support, sleep quality, and stress levels in CKD patients. Furthermore, it is hoped that this study will provide practical benefits for healthcare institutions in developing educational programs for the public, particularly regarding the important role of family support and the management of sleep quality and stress in CKD patients. Furthermore, the authors hope that the information from this study can encourage the public, especially patients' families, to actively maintain psychosocial support, improve sleep quality, and manage stress levels well. These efforts are expected to help maintain the health condition of CKD patients to remain stable and prevent the emergence of complications. Furthermore, the findings in this study are also expected to serve as a basis or reference for further research. It is recommended that future research include more objective medical supporting examinations related to CKD, such as measuring the glomerular filtration rate (GFR) or serum creatinine levels, to obtain more accurate and comprehensive data and conclusions.

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Reference List

Agustini, K. A. (2022). Overview of diet compliance in chronic kidney failure patients with hemodialysis at a state general hospital. *Angewandte Chemie International Edition, 6*(11), 951–952. http://repository.poltekkes-denpasar.ac.id/9280/3/BAB%20II%20LITERATURE%20REVIEW.pdf

Ahmad, E. H., Makkasau, Fitriani, Latifah, A., Eppang, M., Buraerah, S., Syatriani, S., Ilmiah, W. S., Suhartini, T., & Widia, L. (2023). *Health research methodology*. Rizmedia.

Amien, F. (2022). The relationship between family support and quality of life in kidney failure patients: A literature review. Aisyiyah University Yogyakarta.

Amna, Z., Zahara, M., Sari, K., & Sulistyani, A. (2022). Description of psychological well-being in patients with chronic kidney failure undergoing hemodialysis treatment. *Journal of Psychology, 15*(2), 323–338. https://doi.org/10.35760/psi.2022.v15i2.6358

Angie, E., Amir, W. P., & Nasution, S. A. (2022). Clinical features and management of chronic kidney failure in hospitalized patients. *Bulletin of Medicine and Prima Health, 1*(1), 22–25. https://doi.org/10.34012/bkkp.v1i1.2621

Arisandy, T., & Carolina, P. (2023). The relationship between family support and quality of life in chronic kidney disease patients undergoing hemodialysis therapy. *Surya Medika Journal, 9*(3), 32–35. https://doi.org/10.33084/jsm.v9i3.6463

Astuti, V. P., Lestari, T. B., & Simbolon, A. R. (2021). The relationship between anxiety level, gender, and sleep quality in chronic kidney failure patients undergoing hemodialysis. *Carolus Journal of Nursing, 3*(2), 112–121. https://doi.org/10.37480/cjon.v3i2.69

Ayumar, A., Kasma, A. Y., Lande, H., & Ansyari, N. (2022). The relationship between family support and compliance of chronic kidney disease patients in undergoing hemodialysis treatment. *Journal Mitrasehat, 12*(1), 134–141. https://doi.org/10.51171/jms.v12i1.320

Budhiana, J., Ma'sum, M. A., & Kusumah, R. I. (2025). The relationship between family support and coping mechanisms and the quality of life of patients with chronic kidney disease. *Journal of Nursing Practice and Education, 5*(2), 170–179. https://doi.org/10.34305/jnpe.v5i2.1597

Caesarridha, D. K. (2021). The relationship between sleep quality and learning concentration in medical students. *Jurnal Medika Hutama, 2*(4), 1213–1217.
Chayati, N., & Destyanto, A. A. (2021). Coping mechanisms and quality of life: A correlation study in patients undergoing hemodialysis therapy. *Journal of Innovation Research and Knowledge, 1*(2), 115–124.
Cheristina, C., & Razak, A. (2024). The relationship between family support and quality of life in chronic kidney failure patients undergoing hemodialysis. *Journal of Health Education and Technology, 7*(1), 150–159. https://doi.org/10.56467/jptk.v7i1.134
Cipto, Siwoko, Normawati, A. T., & Uripno, P. S. (2024). Study of the characteristics of chronic kidney failure patients on hemodialysis therapy. *Journal of Nursing Studies*, 3–6.
Defi, A. P., & Murhayati, A. (2024). Application of spiritual emotional freedom technique (SEFT) therapy to depression levels in chronic kidney failure patients undergoing hemodialysis. 20, 1–9.
Djamaludin, D., Zainaro, M. A., Isnainy, U. C. A. S., Rahma, R. P., Agustina, R., Liasari, D. E., & Lensi, Y. (2022). Health education on family support and diet for patients with chronic kidney disease.
Erpiyana, R., Djamaludin, D., & Andoko, A. (2024). Chronic kidney failure patients undergoing hemodialysis. *Malahayati Nursing Journal, 6*(5), 2024–2035.
Giovani, R., Pujiyana, P., & Purbosari, P. M. (2024). The influence of reading interest on civics learning achievement in grade 4 elementary school students. *SENTRI: Jurnal Ilmiah Riset, 3*(1), 410–425. https://doi.org/10.55681/sentri.v3i1.2191
Gire, W., Sulaiman, E., & Nirwana. (2023). The relationship between knowledge and family support with compliance of chronic kidney failure patients undergoing hemodialysis therapy. *Avicenna Journal of Science and Health Research, 2*(3), 60–68. https://doi.org/10.69677/avicenna.v2i3.62
Isa, Z. S., Hudiyawati, D., & Haryanto, A. (2024). Evidence-based practice nursing: The effect of pursed lip breathing on oxygen saturation in patients with COPD. *Malahayati Nursing Journal, 6*(8), 3078–3085. https://doi.org/10.33024/mnj.v6i8.14906
Ministry of Health Republic of Indonesia. (2023). *National guidelines for medical services for the management of chronic kidney disease*. https://www.kemkes.go.id
Nurkholis. (2023). The relationship between long-term chronic kidney failure sufferers and sexual dysfunction in hemodialysis clients. *Unigal Repository, 7*(2), 41–52.
Nuzula, F., Putri, N. K., & H. (2022). The relationship of family support to dietary compliance in family members with diabetes mellitus. *Jurnal Ilmiah Kesehatan Rustida, 9*(1), 56–65. https://doi.org/10.55500/jikr.v9i1.163
Permata, S. S., R., A. Z., & Maulani, M. (2022). The relationship between hemodialysis duration and quality of life of chronic kidney disease patients. *Jurnal Ilmiah Ners Indonesia, 3*(2), 54–62. https://doi.org/10.22437/jini.v3i2.20204
Putra, I. P. I. P., Wibowo, I. A., & Wahyuni, N. P. D. S. (2025). The relationship between stress levels and quality of life of chronic kidney failure patients undergoing hemodialysis therapy. *Ganesha Medicina Journal, 5*(1), 1–133.
Rahayu, R., Munawaroh, S., & Mashudi, S. (2024). Stress response of chronic kidney failure patients undergoing hemodialysis. *Health Sciences Journal, 3*(1), 78.
Roflin, E., Liberty, I. A., & Priyana. (2021). *Population, sample, variable: In medical research*. PT Nasya Expanding Management.
Syihab, N., Nyorong, M., & Nuraini. (2023). Factors associated with treatment compliance of hemodialysis patients. *Jumantik, 8*(2). https://doi.org/10.30829/jumantik.v8i2.15102
Syukur, P., Siringo-Ringo, M., & Zega, D. (2023). Family support in chronic kidney failure patients undergoing hemodialysis. *Jurnal Cakrawala Ilmiah, 3*, 467–480.
Wulansih, N. C., Zharfan, F. R., Biyang, A. W. A., Anggraini, M. R., & Herbawani, C. K. (2024). Literature review: The impact of poor sleep duration and quality on body health of productive age groups. *Journal of Health Polytechnic Ministry of Health Pangkalpinang, 12*(1), 71–82.
Yasmine, R. J. (2024). The relationship between family support and anxiety in chronic kidney failure patients undergoing hemodialysis.
Yeroh, K. (2022). Renal rangers: Accompanying chronic kidney failure patients with a family support approach as an innovation for improving patient self-efficacy. *Journal of Innovation Studies, 2*(1), 9–15. https://doi.org/10.52000/jsi.v2i1.84
Zakiyah, W., Eka Agustin, A., Fauziah, A., Sa'diyyah, N., & Ibnu Mukti, G. (2021). Definition, causes, classification, and therapy of dyspepsia syndrome. *Journal of Health Science, 2*(7), 978–985.