

The Relationship between Family Function and Anxiety Level of Chronic Kidney Failure Patients Undergoing Hemodialysis Therapy in the Hemodialysis Room

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ABSTRACT

The psychological impact of patients undergoing Hemodialysis is anxiety. Patients are anxious about the sustainability of their lives that depend on Hemodialysis. Anxiety is influenced by various factors, one of which is the incompatibility of family functions due to GJK disease, which requires hemodialysis therapy. This study aims to analyze the relationship between family function and anxiety of GJK patients undergoing Hemodialysis in the Hemodialysis Room of a Hospital in Malang. Observational design: The respondents were all HD patients in the Hemodialysis Room of the Hospital in Malang, totaling 80 respondents determined by purposive sampling. Data were collected by questionnaire. Data analysis using Spearman Rho test. The results showed a significant relationship between family function ($p=0.002$ or $p<0.05$)x and anxiety level. Conclusion: There is a significant relationship between family function and the anxiety level of hemodialysis patients. It is recommended that nurses facilitate forming family groups of patients with GJK to build communication networks, mutual support, and information bridges with health workers.

Keywords: anxiety; family function; hemodialysis

INTRODUCTION

The results of the Global Burden Disease study showed that in 1990, Chronic Kidney Failure (CKD) was the 27th leading cause of death, with an annual mortality rate of 15.7 per 100,000 population. The ranking increased sharply in 2010, with Kidney Failure ranked 18th with an annual mortality rate of 16.3 per 100,000 population. GJK is currently the 10th leading cause of mortality in Indonesia. The results of prevalence data in the population aged ≥ 15 years based on the results of the Basic Health Research (Riskesdas) found an increase from 2013 of 2.0% to 3.8% in 2018 (Kemenkes RI, 2018). Although East Java Province ranks 29th out of 34 provinces in Indonesia for CKD cases in the period 2013-2018 (MOH RI, 2018), the number of new patients diagnosed with CKD in East Java is still quite large, namely 4,828 in 2017, an increase from the number of 4,139 in 2015 (IRR, 2017). Based on the prevalence data, it can be concluded that the number of GHG cases continues to increase every year.

The Indonesian Renal Registry (IRR) suggests that half (50%) of the management of patients with CKD is hemodialysis (IRR, 2017). The number of patients undergoing hemodialysis therapy is increasing as the prevalence of GJK in Indonesia increases. The number of new patients undergoing hemodialysis therapy in 2017 amounted to 30,831 patients (Kemenkes RI, 2018), a drastic increase of six times compared to 2007, which amounted to only 4,997 patients. The number of active hemodialysis patients amounted to 77,892 patients in 2017 (MOH, 2018). This figure shows an increase of 41 times compared to 2007 when it only amounted to 1,885 patients.

Hemodialysis can result in physical, psychological, and economic impacts on patients. Rahayu (2017) stated that some physical effects of hemodialysis include hypotension, muscle cramps, nausea and vomiting, headache, chest pain, back pain, itching, high fever, and chills. Smaltzer and Bare (2009) state that some physical impacts other than the above are air

embolism, dialysis balance disorders, blood seepage, cardiac tamponade arrhythmias, intracranial hemorrhage, seizures, hemolysis, hyperlipidemia, sleep disorders, and hypoxemia. Hemodialysis has an economic impact on patients, such as financial problems and difficulty maintaining employment (Sopha & Wardani, 2016). Younger patients worry about their marriages, children, and the cause of hemodialysis for their families (Lee & Chung, 2014). The psychological impact of patients undergoing long-term hemodialysis often feel anxious about unpredictable sick conditions; patients also experience mild to severe depressive episodes related to the boredom of undergoing hemodialysis and hopelessness of treatment.

Anxiety in hemodialysis patients is influenced by two factors, namely internal factors and external factors. Internal factors include heredity, the patient's personality, and past bad experiences (Noviati et al., 2018). External factors include family conflict, interpersonal conflict, loss, and disappointment (Panggabean et al., 2012). The existence of chronic diseases that require long-term therapy, such as hemodialysis, leads to the reality of the need for a change in the family (Lydia & Nugroho, 2018). The view that a head of household is a father figure may shift; a wife or child can replace this role due to physical limitations resulting from illness and hemodialysis therapy (Goode, 2011). Anxiety is influenced by various factors, one of which is the incompatibility of family functions due to GSK disease that requires hemodialysis therapy.

METHOD

The type of research used in this study is observational analytic method, which is a study that observes the correlation between risk factors and effects by means of approach, observation, or data collection at the same time so that it is quite effective and efficient (point-time approach). The research sample was hemodialysis patients who met the inclusion criteria in the room. This study used two questionnaires: the family function questionnaire and the Hospital in Malang in March-August 2019.

RESULTS

Table 1
Frequency Distribution of Respondent Characteristics in the Hemodialysis Room (n=80).

| Respondent Characteristics | Frequency | Percentage (%) |
|---------------------------------|-----------|----------------|
| Gender | | |
| Male | 41 | 51,2 |
| Female | 39 | 48,8 |
| Usia | | |
| Early Adulthood (26-35 Years) | 3 | 3,8 |
| Late Adulthood (36-45 Years) | 19 | 23,8 |
| Early Elderly (46-55 Years) | 31 | 38,8 |
| Late Elderly (56-65 Years) | 27 | 33,8 |
| Marital status | | |
| Unmarried | 2 | 2,5 |
| Married | 76 | 95,0 |
| Divorced | 2 | 2,5 |
| Role in the Family | | |
| Husband | 40 | 50,0 |
| Wife | 38 | 47,5 |
| Child | 2 | 2,5 |
| Hemodialysis Duration | | |
| 0—3 month | 22 | 27,5 |
| 3—6 month | 17 | 21,2 |
| 6—12 month | 41 | 51,2 |
| Respondent's Place of Residence | | |
| Malang City | 11 | 13,8 |
| Malang Regency | 38 | 47,5 |
| Outside Malang Area | 31 | 38,8 |

Table 1 shows that the majority of respondents were male (51.2%), aged 46-55 years (38.8%), married (95%), husband (50%), HD duration of 6-12 months (51.2%), and the majority resided in Malang Regency (47.8%).

Table 2.

Frequency Distribution of Respondents' Family Function Identification in the Hemodialysis Room of Hospital in Malang, November 14-23, 2019 (n=80).

| Variable | Frequency | Percentage (%) |
|-----------------|-----------|----------------|
| Family Function | | |
| Poor | 48 | 60,0 |
| Quite | 19 | 23,8 |
| Good | 13 | 16,2 |

Table 2 shows that the majority of respondents had poor family functioning, 60%.

Table 3.

Frequency Distribution of Identification of Family Function Types of Respondents in the Hemodialysis Room of a Hospital in Malang, November 14 - 23, 2019 (n = 80).

| Identification of Family Function | Type Accumulated Score | Percentage (%) |
|-----------------------------------|------------------------|----------------|
| Affective Function | 406 | 10,3% |
| Socialization Function | 853 | 21,7% |
| Reproductive Function | 759 | 19,1% |
| Economic Function | 783 | 19,9% |
| Family Care Function | 1138 | 29,0% |

Table 3 shows that the most dominant function is the family care function, with an accumulated score of 1138 respondents' answers totaling 29.0%.

Table 4.

Frequency Distribution of Identification of Respondents' Anxiety Levels in the Hemodialysis Room of a Hospital in Malang, November 14 - 23, 2019 (n = 80).

| Variable | Frequency | Percentage (%) |
|------------------|-----------|----------------|
| Level of Anxiety | | |
| No Anxiety | 21 | 26,2 |
| Mild Anxiety | 42 | 52,5 |
| Moderate Anxiety | 14 | 17,5 |
| Severe Anxiety | 3 | 3,8 |

Table 4 shows that the majority of respondents experienced anxiety in the mild category as much as 52.5%.

Table 5.

Frequency Distribution of Identification of Respondents' Anxiety Levels in the Hemodialysis Room of a Hospital in Malang, November 14 - 23, 2019 (n = 80).

| Variable | N | Mean | Median | Q1-Q3 | Min-Max |
|------------------|----|-------|--------|--------|---------|
| Level of Anxiety | 80 | 13,95 | 14 | 6 – 14 | 5– 31 |

Based on table 5, it is known that out of 80 respondents, the average score of anxiety level is 13.95. The midpoint of the anxiety score is 14.

Table 6.

Cross Tabulation Analysis of the Relationship between Family Function and Respondents' Anxiety Level in the Hemodialysis Room of a Hospital in Malang, November 14 - 23, 2019 (n = 80).

| Variable | | Level of Anxiety | | | | | | | | Total | % |
|------------------|-------|---|------|------|------|----------|------|--------|-----|-------|------|
| | | No Anxiety | % | Mild | % | Moderate | % | Severe | % | | |
| Family Functions | Bad | 8 | 10,0 | 25 | 31,3 | 12 | 15,0 | 3 | 3,8 | 48 | 60,0 |
| | Quite | 7 | 8,8 | 11 | 13,8 | 1 | 1,3 | 0 | 0,0 | 19 | 23,8 |
| | Good | 6 | 7,5 | 6 | 7,5 | 1 | 1,3 | 0 | 0,0 | 13 | 16,3 |
| Total | | 21 | 26,3 | 42 | 52,5 | 14 | 17,5 | 3 | 3,8 | 80 | 100 |
| Statistical Test | | Spearman's Rho Correlation Test $p = 0.002$ $r = 0.348$ | | | | | | | | | |

Table 6 shows that the majority of respondents have poor family function while experiencing anxiety in the mild category as much as 31.3%. Spearman rho correlation test results $p = 0.002$ or $p < 0.05$ ($\alpha = 0.05$) so that the hypothesis is accepted. This means that there is a relationship between family function and the anxiety level of chronic renal failure patients undergoing Hemodialysis therapy in the Hemodialysis Room of a hospital in Malang.

DISCUSSION

Family Function

The results revealed that a significant portion of the respondents struggled with maintaining a healthy family dynamic. This aligns with Isroin's findings (2017) that patients undergoing hemodialysis often find themselves in a state of flux, adapting to the changes in their family conditions. The hemodialysis process necessitates role adjustments, leading to a higher number of respondents reporting poor family function. Notably, the majority of these respondents were husbands, further underscoring the challenges faced by male patients in maintaining family roles during their treatment.

The majority of respondents have the role of husband. The husband in a household setting as the head of the family is the focus of responsibility for making a living, fulfilling the needs of security and comfort, spiritual needs or family leaders, and health care needs to modify a healthier environment. The fact that the husband has to undergo hemodialysis will change the basic structure of the respondent's family. The study's results are supported by research by Nurani (2013), which found that the role of patients in the family affects the quality of life of patients and other family members. Further analysis of the research data showed that the male gender dominated the prevalence of chronic kidney failure undergoing hemodialysis.

The majority of respondents undergoing hemodialysis therapy were male. The study results align with the 2015 Indonesian Renal Registry (IRR) report that most patients with CKD are undergoing hemodialysis in males. However, there is no significant relationship between gender and the prevalence of CKD. The high number of men undergoing hemodialysis therapy may be due to lifestyle factors. Men tend to have risky behaviors for kidney failure. Men have risky behavior such as smoking, a sedentary lifestyle due to stress and heavy workload, as well as the risk of consuming energy drinks and alcohol-containing substances that are risky to kidney work. All of these risk factors lead to hypertension and chronic kidney failure, which requires hemodialysis therapy. In line with Riskesdas 2013, the prevalence in men (0.3%) is higher than in women (0.2%) (Ministry of Health, 2013).

Carrero's (2010) study found that the progress of CKD is influenced by gender. The incidence of GSK in women related to polycystic kidney, IgA nephropathy, membrane glomerulopathy, and GSK of unknown etiology progresses slower than in men. In addition, population studies have shown that males are associated with worse progressivity of CKD than females. The incidence of GSK with worsening of the condition is mostly found in women of post-menopausal age.

Relationship between Family Function and Anxiety Level

The statistical test results showed that there was a relationship between family function and the anxiety level of chronic renal failure patients undergoing Hemodialysis therapy in the Hemodialysis Room of the Hospital in Malang. The results of the study are in line with Isroin's research (2017) that family function has a significant relationship to the anxiety of patients undergoing hemodialysis therapy. The deterioration of family function will expose the patient's self-conflict to the ideal of a family member. The fact is that every human being wants to be a dignified and useful person for himself, his family, his work environment, and his surrounding community, and it is valuable in the eyes of God. Everyone wants an essential

and clear ideal and purpose in life that will be fought for vigorously, a life goal that becomes the direction of all his activities. The most basic desire of every human being is the desire to live a meaningful life. If this desire can be fulfilled, life will feel useful, valuable, and meaningful (Lee & Chung, 2014).

The existence of a significant influence between family function and anxiety may also be related to the data that the majority of respondents were married and acted as husbands or heads of families. The high number of respondents who play the role of husband is related to the data that most respondents are male and married. This composition will result in respondents dominating the role of husband. The husband's role is generally meaningful as the backbone of the family. The results of research by Sopha et al. (2016) show that in the culture that has been formed in Indonesia, men take on the head of the household and are obligated to meet economic needs, provide security, and make decisions.

The results showed that the majority of respondents had a married status. The high marital status of respondents is related to the age of respondents who are dominant in the 35 - 44 age group. At that age, it is natural to have a family formed from a legal relationship, namely marriage. Marriage is also a formal form of family support in the form of material, emotional, and instrumental support (Lee et al., 2016). Research by Koenig and Cullough (2011) and Lidya and Nugroho (2018) also states that married patients prove the relationship between mortality and high family support. Family support is believed to improve each patient's physical and mental health. Patients who are married and have a partner will receive continuous support. Patients have a defense and readiness to undergo hemodialysis therapy.

CONCLUSION

Families and GJK patients undergoing hemodialysis need to communicate, support each other, and compromise with changes in family functions. Changes in family function in the patient can be modified by the involvement of substitute functions by other family members who are considered capable of replacing the patient. The functions and goals of the family, in general, are intended to continue to run optimally so that anxiety in patients and families can be minimized.

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