

# The Effect Of Length Illness And Stadium On Stress Levels With The Impact On Quality Of Life In Chronic Renal Failure Patients

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**ABSTRACT:** *Chronic renal failure is a clinical condition characterized by irreversible decline in renal function and is always associated with a progressive decrease in GFR (Glomerulo Filtration Rate). The condition of patients with chronic diseases is often found to have psychological disorders. Psychological disorders that are not handled properly in patients with chronic diseases will aggravate the pain and reduce the quality of life. The purpose of the study was to analyze the effect of length illness and stadium on stress levels with the impact on quality of life in chronic renal failure patients. The research method used was cross-sectional analytic with respondents totaling 92 patients with chronic renal failure and were taken using accidental sampling method. Data collection tools for length of illness and stadium using a questionnaire, stress levels using the DASS scale and the WHOQOL-BREF quality of life scale. Analysis using path regression analysis. The results showed that there was an effect of length of illness and stadium on the stress level of patients with chronic renal failure with their respective significance values, namely length of illness (0.002) and stadium (0.000). The length of illness, stadium and stress level affect the quality of life of patients with chronic renal failure with their respective significance values, namely length of illness (0.002), stadium (0.000), and stress level (0.000). The length of illness through stress levels has an influence on the quality of life of patients with chronic renal failure with a direct effect (-0.272) and an indirect effect (-0.188). Stadium through stress levels has an influence on the quality of life of patients with chronic renal failure with a direct effect (-0.318) and an indirect effect (-0.095). The conclusion is that the longer a patient experiences chronic renal failure with a higher stadium, the heavier the stress level and the lower the quality of life. Therefore, in addition to focusing on physical therapy, it is also important to teach relaxation techniques so that sufferers can cope with the stress that comes from their illness.*

**Keywords:** *Chronic Renal Failure, Length Of illness, Stadium, Stress Level, and Quality of Life*

## **BACKGROUND**

Chronic Renal Failure (CRF), which can be called Chronic Kidney Disease (CKD) is a global public health problem with an ever-increasing prevalence and incidence, poor prognosis and high costs along with the increasing number of elderly people and the incidence

of chronic diseases including diabetes mellitus and hypertension. Chronic renal failure is a clinical condition characterized by irreversible decline in renal function and is always associated with a progressive decrease in Glomerulo Filtration Rate / GFR (Pusdatin, 2017).

The causes of chronic kidney failure in various countries are almost the same, but differ in the percentage ratio. Chronic renal failure can be caused by diabetes mellitus, hypertension, autoimmune diseases, malignancies, urinary tract stones, urinary tract infections and others. Chronic renal failure at an early stage is asymptomatic, meaning that early detection can only occur through laboratory tests.

The results of a study conducted by Hill et al (2016) with a systematic review and metaanalysis research method obtained a global prevalence of CRF of 13.4%. The World Health Organization (WHO) in 2012 stated that CRF in the world each year has increased by more than 30%. The incidence rate in the United States for CRF is estimated at 100 million cases per year, this figure is increasing by about 8% every year and almost every year about 70 people in the United States die from kidney damage. In Malaysia, with a population of 18 million, there are an estimated 1800 new cases of CRF per year. In other developing countries, the incidence is estimated at 40-60 cases / 1 million population per year.

Basic Health Research Data (Risksdas) in 2013, shows that the prevalence of the Indonesian population suffering from kidney failure is 0.2% or 2 per 1000 population and the prevalence of kidney stones is 0.6% or 6 per 1000 population. Whereas in 2018, the prevalence of CRF increased twofold from 2013 to 0.38 percent. Kidney failure cases in Indonesia are based on BPJS Health data, which states that kidney disease treatment is the second largest financing provider after heart disease (Pusdatin, 2017; Kankaew & Charernnit, 2020; Kusananto et al., 2020; Machmud et al., 2020; Machmud & Permatasari, 2020).

Indonesian Renal Registry (2014) in East Java, there were 3,621 patients who just underwent hemodialysis in 2014 and 2,787 patients who were still actively undergoing hemodialysis.

The condition of patients with chronic diseases is often found to have psychological disorders. Psychological disorders that are not handled properly in patients with chronic diseases will aggravate the pain and reduce the quality of life. Research conducted by Suwanti, et al (2017) on the quality of life of chronic renal failure patients undergoing hemodialysis showed that most of them had a poor quality of life. The results of the study are in line with the results of Ibrahim's (2009) study, showing that most patients who undergo hemodialysis experience a poor quality of life with physical conditions feeling tired, in pain and often restless. In a psychological condition the patient does not have the motivation to recover, socially and environmentally the patient withdraws from activities in the community.

Some of the factors that affect the quality of life of CRF patients with hemodialysis are socio-demographic factors such as gender, age, education level, marital status, employment or economic status, depression, severity (stage) of kidney disease, comorbidities, duration of hemodialysis, medication adherence. , body mass index, social support, hemodialysis adequacy, interdiality weight gain (IDWG), urine output, and hemoglobin value (Mailani, 2015).

Quality of life is an individual's perception of abilities, limitations, symptoms, and psychosocial characteristics of life in the context of culture and value systems to carry out their roles and functions. To measure the quality of life can be done through observation of functional status and subjective statements about the patient's condition. Quality of life can be measured with the WHO QOL, SF-36 instrument. The SF-36 instrument assessed includes the domains: physical health, psychological health, independent level, social, environmental and spiritual relationships (Murphy et al, 2000)

The quality of life of patients should be an important concern for health professionals because it can be a reference for the success of an action / intervention or therapy. In addition,

data on quality of life can also be preliminary data for consideration of formulating appropriate interventions / actions for patients (Post et al., 2010).

## OBJECTIVE

The aim of the study was to analyze the effect of length of illness and stage on stress and its impact on quality of life in patients with chronic renal failure.

## METHODS

The research method used cross-sectional analytic which aims to analyze the effect of length of illness and stage on stress and its impact on quality of life in patients with chronic renal failure. The population in this study were all chronic renal failure patients undergoing hemodialysis at the Gambiran Regional General Hospital, Kediri. Samples were taken accidentally with the number of research samples that met the inclusion criteria as many as 92 people. Data collection tools for length of illness and stage using a questionnaire, stress levels using the DASS scale and the quality of life scale from WHOQOL-BREF. This instrument was developed by the WHO mental health department. Analysis using path regression analysis.

## RESULT

This chapter will describe the results of research which include the characteristics of the respondent (age, sex, education, and occupation) and research variables related to the quality of life of patients with Chronic Renal Failure (CRF) undergoing hemodialysis at Gambiran Hospital, Kediri, which will be described in a detailed manner. cross sectional approach in accordance with the objectives of the study. The data was obtained by distributing questionnaires to 92 respondents.

Table 1. Characteristics of Respondents

<b>Variable</b>	<b>Frequency</b>	<b>Percentage</b>
Gender		
Male	48	52.2
Women	44	47.8
Age		
> 50 years old	28	30.4
40-50 years old	19	20.7
<50 years old	45	48.9
Education		
Not completed in elementary school	10	10.9
Elementary School	18	19.6
Junior High School	13	14.1
Senior High school	21	22.8
Diploma	16	17.4
S1	14	15.2
Profession		
Does not work	18	19.6
Entrepreneur/self-employed	35	38.1
Government employees	10	10.9
General employees	23	25.0
Retired	6	6.5

The results of the study found that the gender characteristics, between men and women were not much different, namely 48 people (52.2%) and 44 women (47.8%). Most of the respondents were less than 50 years old, namely 45 people (48.9%), followed by a category between the ages of 40 to 50 years old of 19 people (20.7%), and 28 people aged over 50 years old (30.4 %). Based on the latest education, the largest number of respondents are high school education with 21 people (22.8%), elementary school by 18 people (19.6%), with a Diploma level of 16 people (17.4%), Bachelor degree by 14 people (15 , 2%), 13 people (14.1%) in junior high school, and 10 people who not completed in elementary school (10.9%). Based on occupation, the most respondents were enterpreuner or self-employed with 35 people (38.1%), 23 general employees (25%),

Table 2. Variable Descriptions

Variable	N	Mean	Min	Max	Std. Deviation
Length of illness	92	2,0978	1	4	1.07988
CRF Stadium	92	2,7391	1	5	0.81023
Stress	92	21,1196	17	30	3,99957
Quality of Life	92	39,7717	17	68	17.42116

Source: Primary data 2020

The results showed that the average length of illness experienced by respondents was 2.1 years, the average CRF stadium experienced by respondents was at level 3, the average stress level had a value of 21.1, and the average value the quality of life they have is 39.8. The lenght of illness experienced by the respondent has a minimum of 1 year and a maximum of 4 years, the minimum CRF stadium is at stadium 1 and the maximum is at stadium 5, for the minimum stress level the value of the respondent is 17 and a maximum of 30, and the value of the quality of life of the respondent is at least 17 and maximum 68.

Table 3.The results of the analysis of the effect of lenght of illness and CRF stage on the stress level of patients with chronic renal failure (MODEL I)

Variable	tandardized Coeficients eta	Sig
Length Of Illness	0.497	0,000
GRF Stadium	0.251	0.013

Source: Primary Data 2020

From the results of the MODEL I data analysis, it was found that there was an influence between the length of illness and the CRF stadium on the stress level of chronic renal failure patients with a value of 0.000 for the lenght of illness and a value of 0.013 for the CRF stadium. The R.Square value obtained from the results of data analysis about the effect of lenght of illness and CRF stadium on stress levels is 0.469. This shows that the effect of lenght of illness and stadium of CRF on stress levels is 46.9%, while 53.1% is the contribution of other variables that are not included in the research data.

Table 4.The results of the analysis of the effect of lenght of illness and CRF stadium through stress levels on the quality of life of patients with chronic renal failure (MODEL II)

Variable	tandardized Coeficients eta	Sig
Length Of Illness	-0.272	0.002

CRF Stadium	-0,318	0,000
Stress	-0,739	0,000

Source: Primary Data 2020

From the results of the MODEL II data analysis, it was found that the length of illness, stadium and stress level had an effect on the quality of life of patients with chronic renal failure with their respective significance values, namely length of illness (0.002), stadium (0.000), and stress level (0.000). The R Square value obtained is 0.699 which means the effect of length of illness, CRF stadium and stress level on the quality of life of patients with chronic renal failure is 69.9% while 31.1% is the contribution of other variables not included in the research data.

The length of illness through stress levels has an influence on the quality of life of patients with chronic renal failure with a direct effect (-0.272) and an indirect effect (-0.188). Staging through stress levels has an influence on the quality of life of patients with chronic renal failure with a direct effect (-0.318) and an indirect effect (-0.095). The meaning of the results of the analysis states that the longer a patient experiences chronic renal failure with a higher stage level, the heavier the stress level and the lower the quality of life.

## DISCUSSION

The length of illness experienced by the respondents was an average of 2.1 years and the average CRF stadium experienced by the respondents was at level 3. The length of illness experienced by the respondents was at least 1 year and a maximum of 4 years, the minimum CRF stadium was at stadium 1 and maximum at stadium 5, for the minimum stress level the value of the respondent is 17 and a maximum of 30. The results of the analysis state that there is an influence between the length of illness and the CRF stadium on stress levels in patients with chronic renal failure with a value of  $\rho$  value of 0.000 for the length of illness and  $\rho$  value of 0.013 for the CRF stadium. The R.Square value obtained from the results of data analysis about the effect of length of illness and CRF stadium on stress levels is 0.469. This shows that the effect of length of illness and CRF stadium on stress levels is 46.9% while 53,

According to Stuart (2019), anxiety is something that often occurs in human life, especially in people with chronic diseases. Clients being treated for life threatening illnesses are more likely to experience anxiety, depression or anger. Anxiety is a common reaction to an illness. Anxiety is characterized by being unable to sleep, feeling uneasy and worried about the disease, anxiety that occurs continuously will cause stress that interferes with the patient's daily activities Lamusa (2015).

This situation causes the individual's life to always be under the shadow of a prolonged period of anxiety and perceives anxiety as mental tension. Anxiety is related to physiological and psychological stress, meaning that anxiety occurs when a person is threatened both physically and psychologically. Physically, the client looks restless, nervous and unable to sit or rest quietly (Hawari, 2008).

A similar thing was stated by Ibrahim, A (2012), namely that stress affects health in two ways, namely changes caused by stress directly affecting the physical functions of the body that affect health. The second way, stress indirectly affects individual behavior, causing disease or worsening existing conditions. Illness as a cause of stress. Illness causes the emergence of demands for adaptation, compared to other diseases, chronic diseases involve adjustment for a certain period of time, even forever.

Patients with kidney failure automatically experience a decrease in body function which causes the patient to feel useless. This emotionally affects the interaction process with family, relatives, and other people. This is the role of the patient to be disturbed, the patient becomes irritable and often closes himself in interactions. The conditions above indicate that the patient has experienced depression or stress (Sukaraja Made, 2009).

In addition, patients who have had chronic renal failure for a long time and have been dependent on dialysis machines for the rest of their life and adaptation to their sick conditions have resulted in changes in the patient's life. Changes in life are one of the triggers for stress. These changes can be variables identified as stressors (Elizabeth, 2009).

The length of illness experienced by the respondent can affect the psychological condition of chronic renal failure patients. In addition, the stadium experienced by the respondents in this study were on average at stadium 3. They have experienced a decline in the function of their organs, so they feel that there is a deficiency in them. This patient's condition causes the patient to experience stress. Most of the respondents often experience irritability when facing minor problems, feel impatient to get better soon, feel uneasy and anxious every day.

The average value of the quality of life of the respondents is 39.8, for a minimum value of 17 and a maximum of 68. Length of illness, stadium and stress level have an effect on the quality of life of patients with chronic renal failure with the respective significance values, namely the length of illness ( 0.002), stadium (0.000), and stress level (0.000). The R Square value obtained is 0.699 which means the effect of length of illness, CRF stadium and stress level on the quality of life of patients with chronic renal failure is 69.9% while 31.1% is the contribution of other variables not included in the research data.

The length of illness through stress levels has an influence on the quality of life of patients with chronic renal failure with a direct effect (-0.272) and an indirect effect (-0.188). Staging through stress levels has an influence on the quality of life of patients with chronic renal failure with a direct effect (-0.318) and an indirect effect (-0.095).

According to WHO, quality of life is the perception of individuals as men or women in life in terms of the cultural context and value system in which they live, the relationship with their standard of living, expectations, pleasures and concerns. This is summarized in a complex way including their physical health, psychological status, level of freedom, social relations, and the relationship to their environmental characteristics (WHOQOL, 2004).

Quality of life for CRF undergoing hemodialysis therapy is still a problem that has caught the attention of health professionals. Optimal quality of life for patients is something that must be considered in providing comprehensive nursing services. Patients can survive with the help of a hemodialysis machine, but there are still a number of important problems as a result of Ibrahim's hemodialysis therapy (2009).

According to the Centers for Disease Control and Prevention or (CDC 2007 in Smelthtzer, Bare, Hinkle, & Ceever, 2010), quality of life is a broad multidimensional concept that usually includes subjective evaluation of both positive and negative aspects of life. Matters that affect the quality of life include aspects of physical health, mental health, values and culture, spirituality, socio-economic relations that include work, housing, schools and the patient's environment.

Research Results Theofilou, A., P (2012) which investigated the relationship of quality of life for sociodemographic variables (gender, age, education, marital status) and clinical variables (self-reported mental health, depression and anxiety) in end-stage kidney disease patients. (ESRD). Found that Age has an effect on the physical and social domains of quality of life. It can be concluded.

Characteristics of respondents in this study for sex between men and women were not much different. Most of the respondents were less than 50 years old. Based on occupation, most respondents are self-employed. When at a young age, if someone experiences illness, it will affect the actions that are carried out every day and most of them are self-employed where the work is done independently of the respondent so that if the respondent is disturbed in their work activities it will affect their quality of life.

A person with chronic renal failure with a disease duration of more than 1 year will affect his quality of life. Which is where the longer he experiences illness and the more stress he experiences, the lower the quality of his life. If a person has an increased stage of chronic renal

failure, the more stress they experience, the lower the level of quality of life. Thus there are variables that influence each other.

Respondents perceive their quality of life in low conditions, that is, they feel that they are in imperfect physical conditions, namely feeling burdened when diagnosed with CRF, unable to sleep comfortably, always restless and often feel tired after doing their activities. On the psychological aspect, the patient still has the motivation to recover quickly and however there are some who feel that social relationships have changed because they feel they rarely participate in social activities. During illness, they feel limited to completing tasks in their work, so that it greatly affects their decreasing amount of income.

## CONCLUSIONS

Referring to the findings and discussion of the research that has been described, it can be concluded that there is an influence between the duration of illness and the stage of CRF on the level of stress. From the results of the MODEL II analysis, it was found that the length of illness, the CRF stadium and the stress level had an effect on the quality of life of patients with chronic renal failure. The length of illness through stress levels has an effect on the quality of life of patients with chronic renal failure, either directly or indirectly. Staging through stress levels has an influence on the quality of life of patients with chronic renal failure, either directly or indirectly.

For that, when finding a patient with CRF, it would be better to do good stress management for the sufferer. In addition, immediately carry out physical treatment by doing hemodialysis regularly and the patient can control their daily lifestyle in order to improve their physical health and quality of life.

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