DOI: 10.36566/ijhsrd/Vol5.Iss2/172
https://ijhsrd.com/index.php/ijhsrd

Indonesian Journal Of Health Sciences Research and Development
e- ISSN: 2715-4718

Research Article

THE PREVENTIVE MODEL FOR CHRONIC KIDNEY DISEASE IN COASTAL AREA ABELI HEALTH CENTRE IN KENDARI CITY

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ABSTRACT

Background: Chronic kidney failure is an iceberg phenomenon whose cases are not known with certainty in the coastal community in the Abeli Health Center area, Kendari City. However, the visible risk factors are the high prevalence of hypertension and diabetes. Therefore, the development of a prevention strategy is urgently needed and this study aims to formulate a prevention model for chronic kidney failure in the coastal area of Kendari City.
Methods: This study used a qualitative method with a case study design in 3 sub-districts in the coastal area of the Abeli Health Center, Kendari City. The study was conducted in May – June 2023. There were 15 informants who were interviewed in depth and most of them were women. The results of the interviews were transcribed verbatim and analyzed using theme analysis techniques. Visualization analysis and project map are used to formulate a community prevention model for chronic kidney disease.
Results: The model of prevention efforts carried out by the community in the coastal area of the Abeli Health Center for the incidence of chronic kidney disease includes primary and secondary prevention. Primary prevention efforts include controlling food, checking health regularly, getting enough and regular rest, and doing enough physical activity. While the secondary prevention efforts are adequate and regular rest, stopping smoking, walking in the morning, doing activities at home.
Conclusion: The results of this study are important to be followed up by the person in charge of the Abeli Health Center and the Southeast Sulawesi Provincial Health Office and the City of Kendari by developing policies that support strengthening community prevention efforts against chronic kidney disease in the Kendari City area.

Keywords: ***Preventive, Chronic, Kidney, Disease, Coastal***

INTRODUCTION

Chronic Kidney Disease (CKD) is a disease caused by various factors which results in a progressive decrease in the Glomerular Filtration Rate (GFR) to below 60% (1), (2). At a GFR of 15%, patients with chronic kidney failure need to undergo haemodialysis therapy to improve the patient's quality of life, but cannot restore kidney function (3). Patients with CRF with haemodialysis require intensive treatment, costs, understanding and support from a large family for sufferers (4).

The prevalence of CRF in the Province of Sulawesi Tenggara was 0.35% in 2018 and this prevalence seems lower than the national average of 0.38% in 2018 (5). The low incidence of chronic kidney failure in Southeast Sulawesi Province is a big question mark.

Chronic kidney disease is known to be a complication of chronic diseases such as hypertension and diabetes mellitus which are not handled properly (6). As it is known, hypertension and diabetes mellitus are silent killer diseases. The sufferer is not aware of it. That is also why the prevalence of CRF tends to continue to rise but is not detected in the coastal areas of Kendari city, including in the Abeli Health Centre area. This phenomenon continues until today. For example, risk factors for CRF such as Diabetes Mellitus and Hypertension in 2020 are known to be 56.10%, which is very high compared to the national average of 30.24%. The prevalence of hypertension was recorded at 17.29% of hypertension sufferers who received health services in 2020 (6). This coverage is still far below the set standard of 100%.

By looking at this phenomenon, it can be concluded that chronic kidney disease is an iceberg phenomenon. Where sufferers who appear on the surface are fewer than those who are not reported. The health government of the Republic of Indonesia has suggested that efforts to prevent and control non-communicable diseases, including chronic kidney failure, must be carried out (7). Therefore, it is very clear that the development of strategies towards prevention of chronic kidney disease is urgently needed. Where prevention efforts can be made before getting sick, when sick until recovering from the disease. These prevention efforts are called the "five Level Prevention" which includes health promotion, special protection, early diagnosis and prompt and appropriate treatment, limitation of disability and rehabilitation when someone has recovered from illness (8). The five prevention efforts include three stages of prevention, namely primary prevention, secondary prevention, and tertiary prevention.

One of the causes of chronic kidney failure is diet, including sodium intake (9). Where, many people in coastal areas suffer from hypertension (10). Therefore, it is very likely that people in coastal areas where there is a high prevalence of hypertension also experience impaired kidney function. And when not handled properly it will lead to chronic kidney disease. Therefore the development of a prevention strategy in coastal areas in Kendari City will greatly assist policy makers to control chronic kidney failure, which is like an iceberg phenomenon. However, how are the prevention efforts carried out by the community in the coastal area of the Abeli Health Center, Kendari City, against chronic kidney disease? Which in this case has not been clearly identified. Therefore, this study aims to formulate a prevention model for

chronic kidney failure in the coastal area of Abeli Public Health Center, Kendari City.

METHODS

This study uses a qualitative method with a case study design that explores the prevention efforts made against chronic kidney failure in the coastal area of the Abele Health Centre. This research was conducted in May - June 2023 in 3 sub-districts in the coastal area of the Abeli Health Center, namely in Talia, Lapulu and Puday sub-districts. This study conducted in-depth interviews with 15 informants aged 30 years and over. In-depth interviews were conducted by recording all explanations from informants with a tape recorder. The results of the in-depth interviews were then transcribed verbatim and analysed using content analysis techniques with NVivo version 12 software. The analysis process began with open coding and grouping into parent and child notes. Data analysis was also carried out using visualization techniques and project maps to see prevention efforts against chronic kidney disease according to the healthy group, single disease group and the group of people with complicated diseases. Which then analyzed the prevention model based on 3 stages of prevention, namely primary, secondary and tertiary prevention. However, this study did not fine the people with chronic kidney disease.

RESULTS

Characteristics of Informants

Most of the informants who were interviewed were female, namely 12 people (80%), while only 3 people (20%) were male. The highest age group was 30-40 years old with 5 people (33.3%), and the lowest was the 41-50 years age group with 2 people (13.3%). Most of the informants had high school education, namely 7 people (50.0%), then 6 people from elementary school (42.9%). Meanwhile, junior high school education was the lowest, namely only 1 person (7.1%). Most of the informants did not work or were housewives, namely 5 people (33.3%), and the lowest proportion, namely as cadres, factory workers, responsible for electricity bills and as head of the RT, namely 6.7% each. Apart from that there were also those who were the heads of the RT, swordsmen and builders, namely 13.3% each.

Informant Health Status

Most of the informants suffered from complications, namely 7 people (46.7%), while only 4 people (26.7%) were healthy. Furthermore, there are informants who suffer from asthma, ulcers, gout and in detail their positions are in the following table.

Table 1. Distribution of informants' health conditions in the coastal area of the Abeli Public Health Center, Kendari City

Health Status	Number of informants (n)	Persentage (%)
Complications	7	46.7
Asthma	1	6.7
Ulcer / dyspepsia	1	6.7
Gout	2	13.3
Healthy	4	26.7
Total	15	100.0

Prevention model carried out by the people of the coastal area of the Abeli Health Center against chronic kidney disease

To prevent the occurrence of chronic kidney failure, the community in the coastal area of the Abeli Health Center, Kendari City, has carried out several methods. Where the highest percentage of primary prevention methods carried out by the community is by controlling their food, namely 110 coding (57.3%). While the lowest form of

prevention is quitting smoking (0.5%) and not thinking much (0.5%). But there are other primary prevention, such as never taking medication (1.6%). Besides that, there are still other prevention methods, namely health checks (8.93%), lots of movement (7.3%), rest (6.3%), alternative medicine (12.5%), and taking medicine (5.2%). The table below describes the distribution of prevention efforts against chronic kidney failure in the Abeli Community Health Center area. Clearly the proportion of the prevention model for chronic kidney disease as described in the figure below.

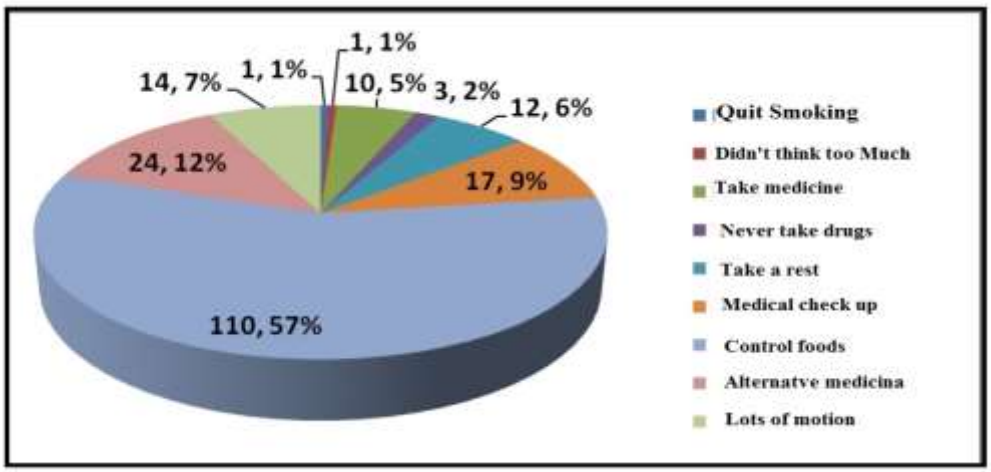
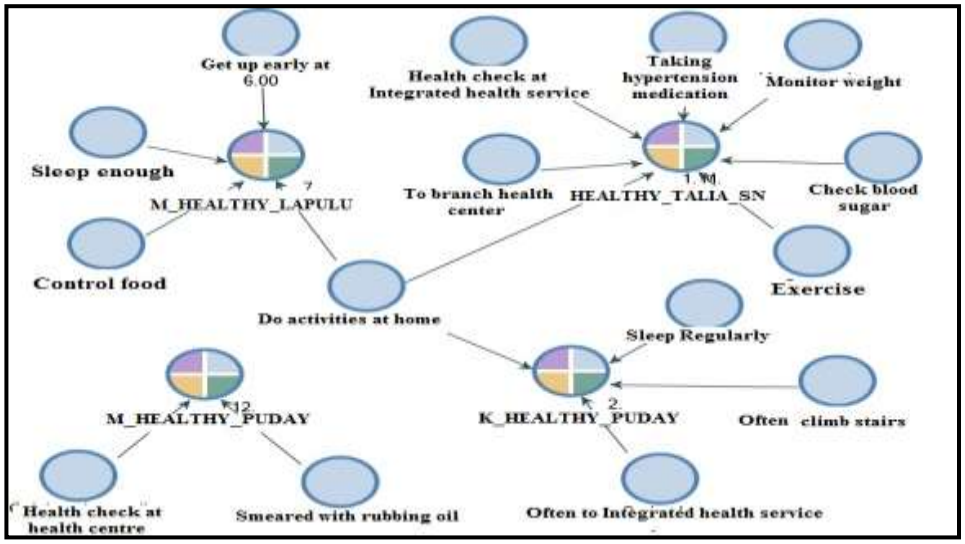


Figure 1. The proportion of the prevention model for chronic kidney disease in coastal communities in Abeli Health Centre, Kendari City

Primary Prevention Model of Chronic Kidney Disease

The primary prevention model carried out by the community in the coastal area of the Abeli Health Center is by controlling food, health checks, regular and sufficient sleep, and lots of movement.

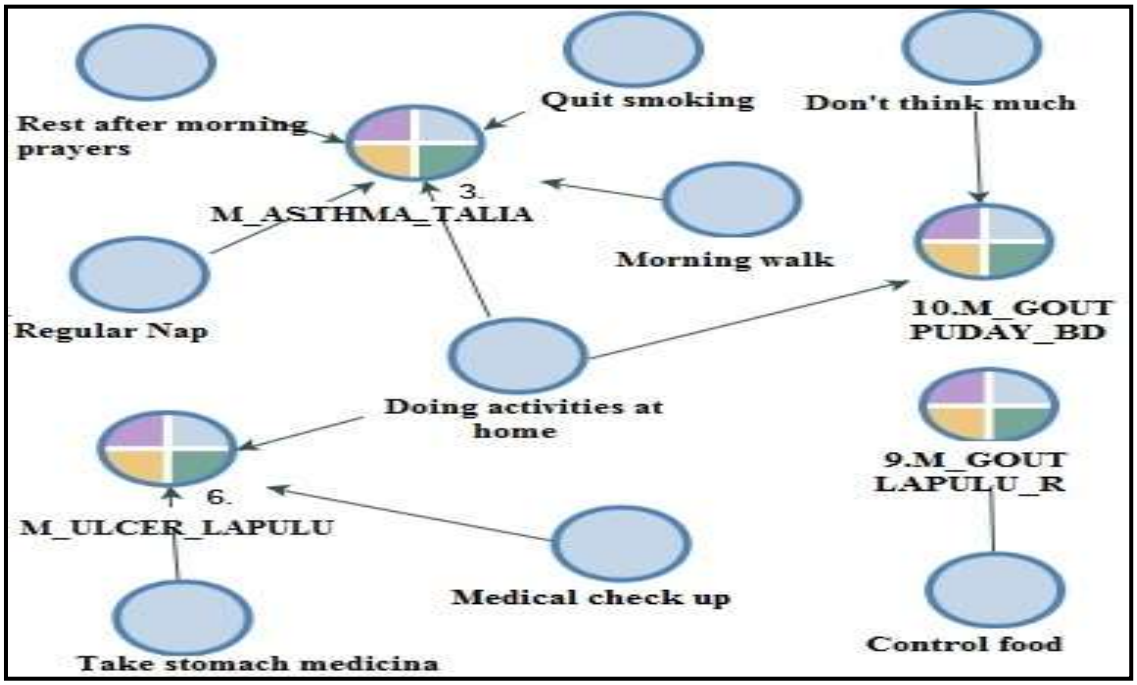


Note: M= community; K= community health volunteer

Figure 2. Primary prevention model in healthy informants

Secondary Prevention Model of Chronic Kidney Disease in People with Single Disease

Informants who suffer from a single disease such as asthma make secondary prevention efforts with sufficient and regular rest, stopping smoking, walking in the morning, doing activities at home. While the informant with gout did secondary prevention by not thinking too much, doing activities at home and controlling his food. Meanwhile, informants with ulcers carried out secondary prevention efforts in the form of carrying out health checks, taking ulcer medicine, and carrying out activities at home. As described in the image below.

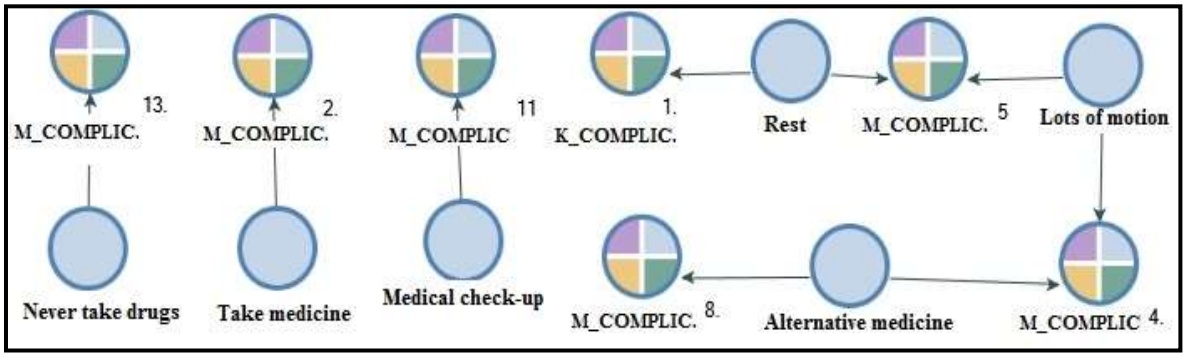


Note: M= community

Figure 3. Model of secondary prevention in informants with a single disease

Secondary Prevention Model of Chronic Kidney Disease in Complication People

Informants with complicated diseases such as hypertension, diabetes mellitus, ulcers and gout make secondary prevention efforts by taking medication, health checks, adequate and regular rest, lots of movement and alternative medicine. But there are still those who take prevention by not taking medication.



Note: M= community; K= community health volunteer; COMPLIC= complication

Figure 4. Secondary prevention model in informants with complicated diseases

DISCUSSION

Prevention Efforts made by coastal communities to avoid chronic kidney failure in the coastal area of the Abeli Public Health Center, Kendari City.

This study has explained that the people in the Coastal area of the Abeli Health Center have made various efforts to avoid chronic kidney disease. As it is known that there is only one patient with chronic kidney failure in 2023 at the Abeli Health Center. This can be seen that the people in the Abeli Health Center area have made efforts to prevent chronic kidney failure, namely by stopping smoking, not thinking much, taking medication, some even avoid taking chemical drugs, getting enough rest, controlling food, taking medication. alternatives and lots of movement.

Of the various prevention efforts that are mostly carried out, namely controlling food (57.3%). How to control food also varies, there are those who eat regularly according to the hour, namely morning, afternoon and evening. The average breakfast is around 7.00 - 9.00 Central Indonesian Time. While lunch is carried out by the community between 12.00 - 13.00 Central Indoneisan Time. For dinner it is usually done after the evening prayer until after the Isyak prayer, which is around 17.00-20.30 Central Indonesian Time. Besides that, another form of food control is by managing a balanced diet menu which includes elements of carbohydrates, protein, vitamins and minerals. The need for carbohydrates is with a menu of rice or sago. While the adequacy of protein is mostly obtained from fish and eggs. Fish and eggs are classified as foods that contain lots of high protein. Adequacy of vitamins and minerals, namely vegetables and fruit. Where the vegetable that is the favorite of the people in the coastal area of the Abeli Health Center is Moringa leaves. Moringa leaves are the main ingredient in community clear vegetables in the coastal area of the Abeli Health Center. Moringa clear vegetables make a menu that is very fresh and delicious, especially when mixed with other vegetable ingredients, such as red pumpkin, young papaya, or luffa. From several studies, it is stated that Moringa leaves have many functions and benefits for one's body health, including being able to lower one's blood pressure (11). For fruits that are a favorite of the people in this coastal area, namely watermelon. Watermelon is a fruit that contains a lot of water. This is very suitable for people on the coast who often experience hot weather. Watermelon fruit contains high vitamin C, especially the white part of the yellow watermelon skin which is around 16,782 mg/L IC50 content (12). Therefore, watermelon fruit is classified as a fruit that contains antioxidants.

The next prevention effort is alternative medicine. People who do alternative medicine are individuals who are already suffering from complications. Such as people with hypertension and diabetes mellitus, people with hypertension and asthma, or people with ulcers, diabetes mellitus and hypertension. Alternative treatment in this case is the patient with this complication by drinking concoctions from natural ingredients such as turmeric, bay leaves, soursop leaves, and cat whiskers leaves. Besides that, other ingredients such as garlic and red ginger. The leaves and tubers mentioned above do contain many substances that can restore individual health. Several studies have also stated that turmeric contains antioxidants, antitumor, anti-diabetic, anti-inflammatory and also as an alternative medicine for joint diseases such as goat arthritis (13). Likewise, bay leaves are also stated as ingredients that can reduce uric acid levels (14) and lower blood sugar levels (15). Soursop leaves are also known to lower blood sugar levels because they contain anti-diabetics (16). Meanwhile, the results of Sari et al.'s study on cat whiskers have not been declared as potential anti-diabetic drugs (17). However, cat whiskers

are compounds that have the potential as antioxidants which are good for body health (18).

Health checks are also one of the community's efforts to prevent chronic kidney failure (8.9%). The places where people carry out routine health checks are starting at the village level, namely the Integrated Development Post (Posbindu), Poyandu, auxiliary health centers, health centers, and in hospitals. The form of health checks carried out in the form of checking blood pressure, checking blood sugar levels, and monitoring their weight. With regular checks related to blood pressure and blood sugar levels, a person can adjust his diet and also the treatment he chooses. The treatment can be taking medication regularly, such as the drug amilodepine which is carried out by people with hypertension in the Abeli Health Center area. By taking medication regularly, people with hypertension or diabetes mellitus will not experience chronic kidney failure (19). As it is known that people with diabetes mellitus are more at risk of chronic kidney failure (20).

Community efforts that also support their health and avoid chronic kidney failure are doing a lot of physical activity or in the sense of moving a lot, which is around 7.3%. It can be understood that of the 15 respondents, the majority were housewives (33.3%). As it is known that housework includes many things, starting from taking care of the house including cleaning it, cooking, washing and taking care of the needs of his family. Unknowingly that activity in the house is a form of physical activity that can improve one's body health. In this study it was found that almost all healthy respondents were women with 50% work as housewives, 25% as factory workers and 25% as social workers as posyandu cadres or health cadres. Likewise, rest is a form of prevention that is also effective against the incidence of chronic kidney failure (6.3%) because with adequate rest, the body can restore individual energy.

The prevention model for chronic kidney failure in the coastal area of the Abeli Public Health Center, Kendari City

This study has suggested that the prevention efforts carried out by the community in the coastal area of the Abeli Health Center against the incidence of chronic kidney disease, it can be grouped into 2 levels of prevention, namely primary and secondary prevention. Primary level prevention efforts are carried out by healthy community groups. The secondary prevention is carried out by single disease sufferers and complications.

This primary prevention model is carried out by healthy community groups. Where is the healthy community group, namely the average age of 33 years and under. The primary prevention model that is carried out so as not to suffer from chronic kidney disease includes controlling food, checking health regularly, getting enough and regular rest, and doing enough physical activity.

Forms of food control efforts are such as eating regularly with a menu composition that contains carbohydrates such as rice, protein, including fish, vegetables and fruits that contain minerals and vitamins. With the regularity of a balanced diet, of course, it can maintain the body's resistance from disease attacks.

Consumption of fish as a protein requirement is very good. In coastal areas there are many types of fish that are rich in protein, such as tuna and reef fish with various types of species, including the most abundant types of Laridae or Pomacanthidae (21). These reef fish contain high levels of nutrients that can prevent the occurrence of chronic diseases, such as heart disease, increase thyroid hormone, eye health and in particular prevent cardiovascular including impaired kidney function (22), (23).

Another form of food control is to reduce salt in food, reduce vegetables with coconut milk and eat small portions. By reducing salt, individuals avoid hypertension

(24). Where salt contains a lot of sodium, and when it enters the body, sodium is absorbed by the blood vessels which results in an increase in blood volume. This incident causes a person's high blood pressure. Besides that, the high sodium in the body causes an excess of natriuretic hormone which increases a person's blood pressure. High salt intake can also shrink the diameter of the arteries which causes the heart to work hard to pump blood to the body which eventually causes hypertension (24).

Healthy people in the Abeli Health Center area also carry out prevention by routine health checks at primary health care centers such as Integrated health centre and auxiliary health centers. Where, health service centers such as Posyandu provide weighing services, health checks including checking blood pressure and blood sugar levels. With weighing, a person can monitor his weight which can be used as an indicator of the nutritional status of the community. Likewise with the sub-health center in the Abeli Health Center area which also provides health services both inside and outside the supporting health center building. For example, the Integrated Development Post service which provides special services to people aged 35 and over. The aim of organizing the Integrated Development Post is to also screen people with chronic diseases such as hypertension, diabetes mellitus, including chronic kidney disease. That is why, people who routinely participate in health service programs at the Community Health Center will maintain their health.

People in the healthy group also often check their health at the health center, Integrated health centre, auxiliary health center to prevent chronic kidney disease. During a visit to the health service unit, they checked their blood sugar levels and weighed them. Besides that, with adequate and regular rest, the body's health becomes more fit and avoids the emergence of hypertension (25). Improving public health is also supported by carrying out sufficient activities such as doing household chores and at work.

CONCLUSIONS

In short, it can be concluded that the coastal communities in the Kendari City area, especially in the Abeli Public Health Center area, have made preventive efforts to avoid chronic kidney failure, namely by stopping smoking, not thinking much, taking medication, and some even avoiding taking chemical drugs, simply rest, food control, alternative medicine and lots of movement. Where the prevention effort that is mostly done is by controlling food (57.3%).

The model of prevention efforts carried out by the community in the coastal area of the Abeli Health Center for chronic kidney failure includes primary and secondary prevention. Primary level prevention efforts are carried out by healthy community groups. While secondary prevention is carried out by single disease sufferers and complications. Primary prevention efforts include controlling food, checking health regularly, getting enough and regular rest, and doing enough physical activity.

While the secondary prevention efforts are adequate and regular rest, stopping smoking, walking in the morning, doing activities at home. While the informant with gout did secondary prevention by not thinking much, doing activities at home and controlling his food. Meanwhile, informants with ulcers carried out secondary prevention efforts in the form of carrying out health checks, taking ulcer medicine, and carrying out activities at home.

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