

COMMON CAUSES OF RENAL FAILURE AMONG PATIENTS IN PRIVATE HEMODIALYSIS CENTERS IN ALBAY

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Abstract

Chronic kidney disease (CKD) is among the leading causes of sickness and death in the Philippines. Latest estimates show that around 2.3 million Filipinos have CKD. In 2016, the Bicol Region recorded a total of 786 patients undergoing hemodialysis, with 281 hailing from the province of Albay.

This study assessed the common causes of renal failure among patients in dialysis centers in Albay. In addition, demographic profiles such as age, sex, highest educational attainment, nature of employment, family monthly income, past medical and family history records were also considered. Specifically, the study attempted to answer the following research questions: (1) What is the Socio-demographic and health profile of the respondents? (2) What are the common causes of renal failure in terms of: (a) Non-Modifiable Risk factors and (b) Non-Modifiable Risk Factors and (3) What are the proposed measures and strategies to enhance or improve the

respondents' awareness of the common causes of renal failure?

Total Enumeration and a full retrieval of questionnaire was achieved in the study, there was a 30 total number of respondents: Tanchuling Hospital – Dialysis Center (5), Saint Francis – Dialysis Center (10), Esteevez Hospital – Dialysis Center (3), Saint Mary's – Dialysis Center (4), and Nephrology Center of Bicol (8).

Out of the 30 respondents, 30.00% belonged to the 51-60 age bracket comprising 4 males (28.60%) and 5 females (31.25%). College Graduate (53.33%), 60.00% are unemployed. 40.00% has a less than 10,000 family income. Their past medical records and family history records said hypertension is the common with 44.19% and 30.30%.

Key words: Hemodialysis, Modifiable, Non-Modifiable, Renal failure.

Introduction

The human body, complex and intricately organized structure, consist of cells collaboratively working to sustain life and execute essential daily functions. While appears as a singular entity, it comprises billions of smaller structures, including cells, tissues, organs, and systems, all operating in tandem. These structures function harmoniously, finely tuned to ensure individual well-being and the maintenance of life (Tortora Derrickson, 2019). In the context of this study, the focus zeroes in on one of the body's crucial organs- the kidneys.

The kidneys, a pair of bean-shaped organs, each approximately the size of a fist, are situated on either side of the back, shielded within the lower part of the rib cage (Nair, 2016). Comprising about a million tiny filtration units called nephrons, these vital structures The kidneys play a pivotal role in maintaining homeostasis by regulating fluid levels, electrolyte balance, and various factors to ensure the body's internal environment remains consistent and comfortable. Beyond homeostasis, these organs contribute significantly to waste excretion (e.g., urea and uric acid) and the re-absorption of crucial nutrients (e.g., glucose, bicarbonate, phosphate, and amino acids).

In addition to these functions, kidneys are involved in pH level maintenance, osmolality regulation, blood pressure control, and the secretion of vital compounds such as erythropoietin, renin, and calcitriol (Chapman et al., 2021). While an individual can survive with only one kidney, any complication affecting it can swiftly escalate to a life-threatening situation. This study delves into one such critical problem, namely renal failure.

"Renal Failure" refers to the kidneys' incapacity to perform their excretory function, resulting in the retention waste products e bloodstream. This condition manifest in two forms: acute and chronic renal failure. renal failure typically occurs suddenly and often reversible. In contrast, chronic renal failure indicates gradual 10ss of kidney function over time, potentially progressing to more severe complications like end-stage renal disease (ESRD). ESRD necessitates immediate and regular interventions, ranging from hemodialysis to renal transplant.

Chronic kidney disease (CKD) is defined as kidney damage or a glomerular filtration rate (GFR) persistently below 60 ml/min/1.73 m² for three months or longer, irrespective of the cause. The escalating prevalence and incidence of CKD and ESRD have positioned CKD as a major global health concern, marked by significant costs and poor outcomes (Al-Mohani et al., 2023).

Dialysis serves the crucial purpose of replicating some functions of a healthy kidney, encompassing the removal of waste, excess salt, and water, as well as the maintenance of proper levels of chemicals in the blood, such as sodium, bicarbonate and potassium, along with the regulation of blood pressure. There are two main types of dialysis: hemodialysis and peritoneal dialysis (Murdoswar Anjum, 2020). This study specifically concentrates on clients undergoing Hemodialysis treatment.

Hemodialysis, a process integral to the study, involves the filtration of wastes and water from the blood. Throughout this procedure, the blood traverses a filter outside the body referred to as a dialyzer, often

termed an "artificial kidney." This method plays a crucial role in maintaining the balance of essential elements in the bloodstream for individuals undergoing hemodialysis treatment.

At the World Congress of Nephrology (WCN 2023) held in Bangkok, Thailand, the International Society of Nephrology (ISN) unveiled key insights from its third installment of the 2023 ISN-Global Kidney Health Atlas (ISN-GKHA). This latest edition, presented during the congress, discloses that approximately 850 million people worldwide are grappling with chronic kidney disease (CKD), affecting individuals across all ages and races.

Notably, those from disadvantaged populations face heightened risk.

The 2023 ISN-GKHA further emphasizes that the global burden of kidney failure remains substantial, driven by the elevated costs of treatment and extensive impacts on the health and well-being of individuals living with kidney disease (International Society of Nephrology, 2023). In 2019, global data on kidney disease deaths indicated an increase in CKD mortality rates, reaching 1.3 million deaths in that year. Alarming, kidney diseases claimed the eighth position among causes of death in high-income countries, while on a global scale, kidney disease ranked as the tenth leading cause of death worldwide (WHO, n.d.). These statistics underscore the urgent need for a comprehensive approach to address the growing challenges posed by kidney diseases globally.

Chronic kidney disease (CKD) is among the leading causes of sickness and death in the Philippines. Latest estimates show that around 2.3 million Filipinos have

CKD. The National Kidney and Transplant Institute (NKTII) estimates that one Filipino develops chronic kidney failure every hour, about 120 Filipinos per million population every year (National Kidney and Transplant Institute, 2023). The increasing number of CKD cases has become urgent national concern due to the burden of the disease and the high costs of care. CKD costs more than combined breast, lung, colon, and skin cancer (Department of Health, 2023).

Issued on January 23, 2021, Administrative Order (AO) No. 2021-0010 delineates the Implementing Guidelines on the Institutionalization of Chronic Kidney Disease Prevention and Control under the purview of the Department of Health. The AO underscores the critical status of chronic kidney disease (CKD) among non-communicable diseases, deeming it an often-neglected health issue. The growing prevalence of CKD patients has elevated it to a national concern, attributed to the disease's burdensome impact and the escalating costs associated with its care.

In 2023, the prevalence of chronic kidney disease (CKD) is evident as more than 70,000 Filipinos undergo dialysis. This surge is notably linked to the rising numbers of diabetes and hypertension, recognized as major risk factors for CKD. The National Kidney and Transplant Institute positions kidney disease the seventh death in the Philippines. from the Institute for Health Evaluation highlights CKD as the fourth of death the country in 2019, following ischemic heart disease, stroke, and lower respiratory infection, while Tuberculosis ranked fifth.

In 2016, the Bicol Region recorded a total of 786 patients undergoing hemodialysis, with 281 hailing from the

province of Albay. The financial burden of CKD is substantial, with the Philippine Health Insurance covering over PHP2, 000 per session for a dialysis patient. On average, a patient undergoes dialysis treatment for 90 days annually. However, recent developments in PhilHealth Circular 2021-0009 have expanded the approved payment of benefit claims for hemodialysis services to 144 sessions, with further plans to increase to 156 sessions in 2023. These statistics underscore the pressing need for comprehensive measures to address the increasing prevalence and financial implications of CKD in the Philippines.

The researchers were interested in investigating the common causes of renal

failure in patients undergoing hemodialysis to gain a more profound understanding of the factors influencing the treatment process for the said disease. The primary goal was to provide additional information, particularly focusing on modifiable and non-modifiable risks contributing to renal failure.

The study also aimed to propose measures and interventions that could assist health professionals, hemodialysis facilities, and patients in improving prognosis and prevention. Additionally, these recommendations were designed to contribute to the broader goal of aiding the health system in preventing instances of renal failure.

Setting of the Study

The research took place at several dialysis centers situated in the vicinity of Legazpi City, Albay. These centers include

Tanchuling Hospital, Saint Francis, Estevez General Hospital, Saint Mary, and the Nephrology Center of Bicol (NCB).



CTTO

Figure 1. Map of the Province of Albay

Statement of the Problem

The study aimed to assess the common causes of renal failure among patients in dialysis centers in Albay. Specifically, it sought answers to the following questions:

1. What is the socio-demographic and health profile of the respondents in terms of:
 - a. Age,
 - b. Sex,
 - c. Highest Educational Attainment,
 - d. Nature of employment,
 - e. Family Monthly Income,

- f. Past Medical History and
 - g. Family Medical History?
 2. What are the common causes of renal failure in terms of?
 - a. non-modifiable risk factors, and
 - b. Modifiable risk factors?
 3. What are the proposed measures and strategies to enhance or improve the respondents' awareness of the common causes of renal failure?

Scope and Delimitation of the Study

This quantitative study is centered on investigating the prevalent causes of renal failure, specifically among patients undergoing dialysis in Albay. The participants were drawn from five prominent dialysis centers in the region, with a specific focus on individuals receiving hemodialysis treatment. The primary objective is to assess the demographic profile of the respondents, encompassing aspects such as age, sex, highest educational attainment, occupation, family monthly income, past medical history, and family medical history.

The examination of common causes of renal failure is delineated into two categories: (1) non-modifiable risk factors and (2) modifiable risk factors. The research employed a questionnaire survey as its primary instrument to collect data. The survey was conducted from October to November 2023 at five private dialysis centers in Albay, namely the Tanchuling Hospital Dialysis Center, Saint Francis Dialysis Center, Estevez Hospital Dialysis Center, Saint Mary's Dialysis Center, and the Nephrology Center of Bicol.

Significance of the Study

The primary objective of this study was to contribute insights into the prevalent causes of Renal Failure among patients in hemodialysis centers in Albay. Additionally, the research aimed to furnish recommendations geared toward enhancing the treatment outcomes of hemodialysis and fortifying preventive measures for renal failure. The anticipated impact of this study extends beyond the immediate context, with various segments of society poised to benefit significantly from its findings and results.

Patients undergoing hemodialysis. The study results may enhance patients' comprehension of the prevalent causes of renal failure and the associated risk factors. By doing so, it endeavors to empower patients with the knowledge and awareness necessary to grasp the nature of the disease, fostering a more informed and proactive approach to managing their health.

Health workers. The research output may offer valuable information to

health workers concerning the common causes of renal failure in hemodialysis patients. The insights gained from this research are anticipated to be instrumental in facilitating health education and promotion initiatives related to renal failure, thereby contributing to the overall enhancement of healthcare practices.

Public and Private Hemodialysis Centers. The findings of this study have the potential to benefit dialysis centers by shedding light on the common causes of renal failure among their patients. This knowledge can empower these centers to gain a comprehensive understanding of the factors influencing the development of the disease. Consequently, dialysis centers can use this information to enhance their services, ultimately contributing to the satisfaction of their patients.

General Population. The outcomes of this study are poised to offer valuable insights and awareness in advocating for Renal Failure. By disseminating this information, the study can equip the public with effective measures and strategies to prevent the onset of the disease. This proactive approach seeks to enhance public

Synthesis of the State-of-the-Art

The examination of related literature and the current research reveals similarities and differences. The thesis titled "Common Causes of Renal Failure among Patients in Dialysis Centers in Albay" delves into the multifaceted realm of renal failure, concentrating on the factors contributing to this prevalent health issue within dialysis centers. This synthesis navigates the intricate web of causative agents, shedding light on key elements propelling renal failure among individuals undergoing dialysis.

awareness and contribute to the promotion of renal health.

Department of Health Officials. This study may offer insights and recommendations to officials at the Department of Health (DOH), providing valuable ideas for fortifying programs and services aimed at combating Renal Failure disease. The study's findings aim to serve as a resource for enhancing the effectiveness and impact of DOH initiatives in addressing this health concern.

Researcher. This will serve as a valuable reference for the researcher, providing comprehensive information on the common causes of renal failure along with proposed measures and strategies for addressing the disease.

Future Researchers. This work will function as a reference for future researchers seeking to undertake a similar study. Subsequent studies could expand on this research by engaging a larger number of respondents and exploring different settings, facilitating a comparison of results for a more comprehensive understanding of the subject matter.

Beginning with the establishment of a comprehensive understanding of renal failure, the investigation emphasizes its widespread impact on patients and the growing reliance on dialysis as a therapeutic intervention. The synthesis identifies commonalities among patients experiencing renal failure in the dialysis setting.

Through in-depth analysis of medical records, patient histories, and statistical data, the thesis uncovers patterns related to specific causes of renal failure. It explores the

role of chronic conditions, lifestyle factors, and genetic predispositions, providing a nuanced perspective on their interplay in precipitating renal failure.

Moreover, the synthesis highlights emerging trends and novel findings in the field, presenting a forward-looking perspective on potential areas for preventive measures and targeted interventions. By synthesizing available evidence, the thesis contributes to a broader understanding of the intricate dynamics surrounding renal failure in dialysis centers.

Gaps Bridged by the Study

The central objective of this thesis is to scrutinize the prevalent causes of renal failure, particularly among patients in dialysis centers in Albay. While existing literature offers a general understanding, contextualizing this knowledge to Albay's unique demographic, cultural, and healthcare landscape is imperative. There is limited research directly addressing the factors contributing to renal failure in Albay's

In conclusion, "Common Causes of Renal Failure among Patients in Dialysis Centers in Albay" not only consolidates existing knowledge but also paves the way for future research endeavors. The synthesis serves as a valuable resource for healthcare professionals, researchers, and policymakers, offering insights that can inform strategies for improved patient care, preventive measures, and overall management of renal failure within the dialysis center setting.

dialysis center population, creating a gap in applying global insights to this local context.

Currently, there is no focused study exploring the specific causes of renal failure among patients in Albay's dialysis centers, presenting a significant research gap. This study aims to fill this void, as no other research has been identified that concentrates on this particular concern.

Theoretical Framework

This study is grounded in Dorothea Orem's Self-Care Deficit Theory, emphasizing individuals' capacity for self-care and its critical role in fostering positive quality of life. Orem defines self-care as the initiation and performance of activities to maintain life, health, and well-being. According to her theory, patients experience better recovery outcomes when they maintain some independence in their self-care.

The study categorizes self-care requisites into three groups: Universal, Developmental, and Health Deviation Self-Care Requisites. Universal requisites are

linked to life processes and maintaining human structure and functioning integrity. Developmental requisites are specialized expressions or essentials associated with developmental processes. Health Deviation requisites are necessary during

Illness, injury, or disease, involving seeking medical assistance, understanding pathologic conditions, applying prescribed measures, adjusting self-concept, and learning to live with health-related effects.

Orem's theory provides a comprehensive framework for understanding and addressing the diverse self-care needs

across different life situations and health conditions.

In the context of renal failure, Orem's theory provides a valuable framework for understanding how patients in private hemodialysis centers can actively engage in self-care to manage and prevent the progression of renal failure. The theory underscores the importance of individuals taking responsibility for their health by initiating and performing activities that contribute to the maintenance of life and well-being.

The study can draw on Orem's theory to explore how patients in private hemodialysis centers in the Province of Albay engage in self-care practices. This may include understanding the patients' ability to adhere to prescribed treatments, managing lifestyle factors contributing to renal failure,

and actively participating in preventive measures.

Orem's theory allows researchers to delve into the intricacies of self-care requisites specific to patients undergoing hemodialysis, providing insights into their ability to cope with the demands of their condition.

Furthermore, the theory can guide the study in proposing interventions and strategies that empower patients in private hemodialysis centers to enhance their self-care capabilities. By understanding the self-care deficits and requisites within the context of renal failure, the research can contribute to the development of targeted and patient-centric approaches to improve outcomes and overall quality of life for individuals grappling with renal failure in private hemodialysis centers in Albay.

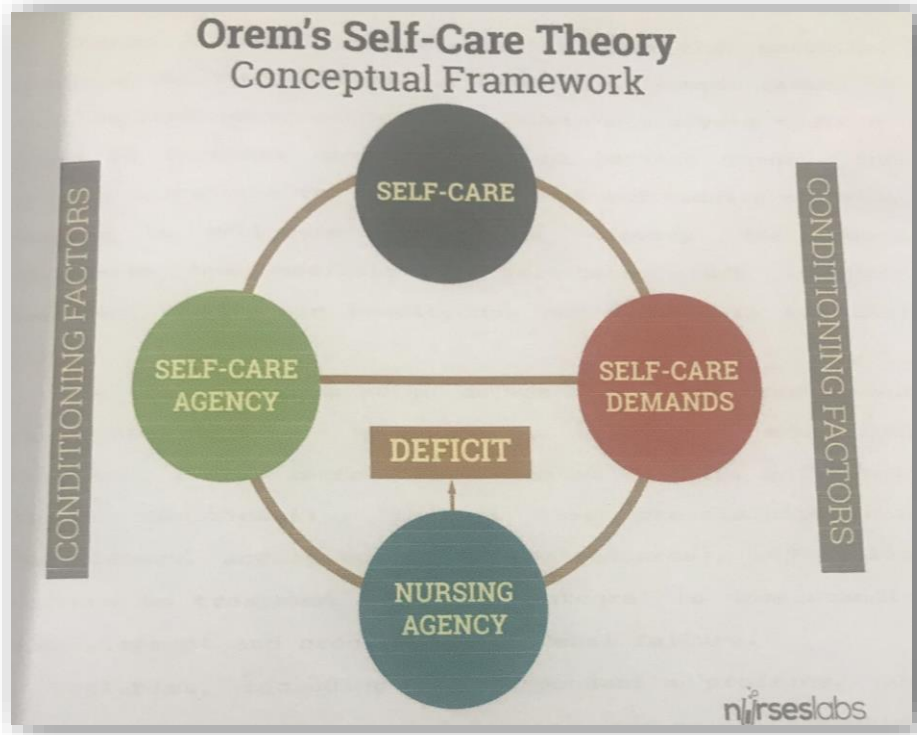


Figure 2. Theoretical Paradigm

Conceptual Framework

Figure 3 visually represents the conceptual paradigm, outlining the study's focus on identifying common causes of renal failure among patients in Albay's dialysis centers. Guided by Dorothea Orem's Self-Care Deficit Theory, the research recognizes the pivotal role of individuals actively engaging in self-care to promote recovery. The theory underscores how deficits in self-care, such as poor management of chronic conditions, can contribute to renal failure.

The conceptual paradigm delves into the personal and demographic profile, encompassing age, sex, education, occupation, family income, past medical

history, and family history. Additionally, factors like pre-dialysis care effectiveness, access to healthcare resources, and patient adherence to treatment plans are integral to understanding the development and progression of renal failure. Variables, including the respondent's profiles, non-modifiable and modifiable risk factors, and priority ranking, are crucial components of the study. By exploring these interconnected elements, the research aimed to inform comprehensive strategies for prevention, early intervention, and improved outcomes among individuals undergoing dialysis in Albay's centers.

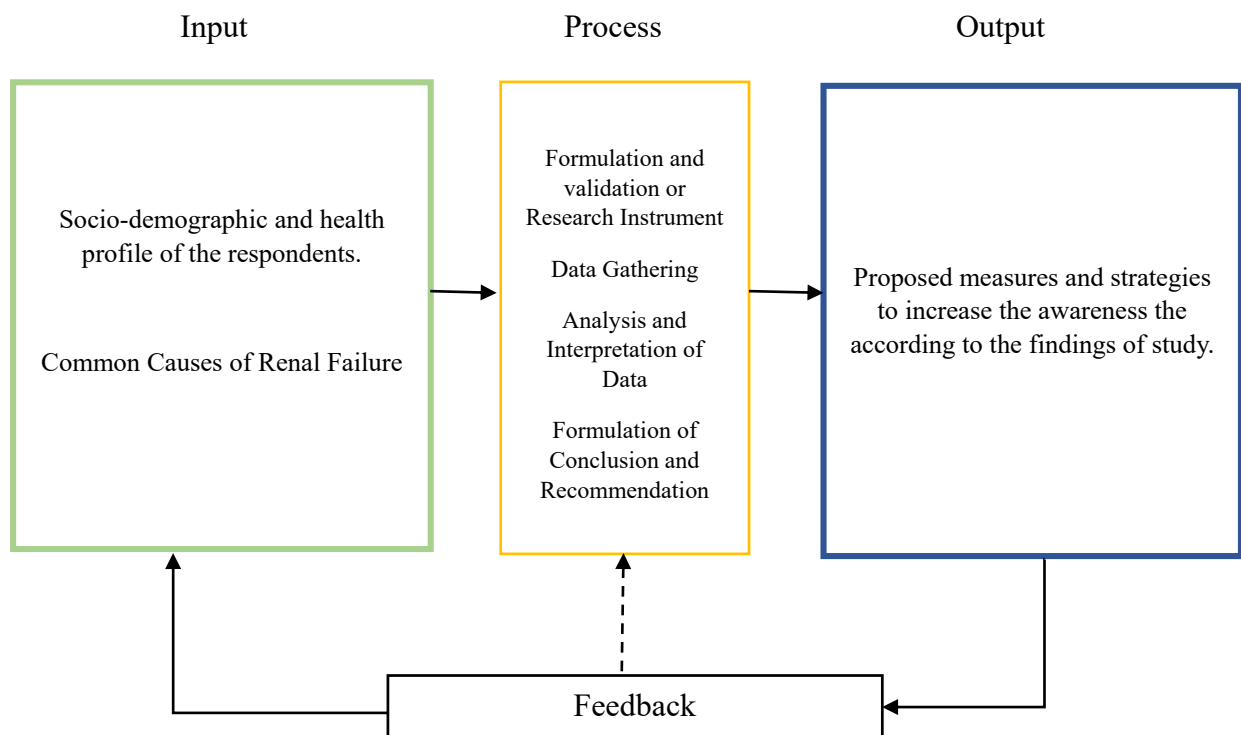


Figure 3. Conceptual Paradigm of the Study

Research Design

This study used a descriptive quantitative design. Quantitative research aims to determine the relationship between one thing (an independent variable) and another (a dependent or outcome variable) in a population. A descriptive study establishes only associations between variables. In this study, this method utilized to describe, interpreted and revealed the respondent's

socio demographic profile such as Age, Sex, Educational Attainment, Marital Status, Nature of Employment, Family Income, Comorbidities and Family History relationship that affect the common causes on renal failure among the patients in private hemodialysis centers in Albay. And to find the common causes of renal failure to non-modifiable and modifiable risk factors.

Population and Sample

The research was conducted in four dialysis centers in Legazpi City, Albay, specifically focusing on the Private Hemodialysis Center. A total of thirty

respondents participated, and a full retrieval of the questionnaires was achieved. The study employed total enumeration to ensure comprehensive statistical coverage, allowing for a thorough examination and analysis of the entire population.

Table 1: Total Number of Respondents

Dialysis Center	Number of Respondents	Retrieval Rate
Tanchuling Hospital- Dialysis Center	5	5
Saint Francis Dialysis Center	10	10
Estevez Hospital Dialysis Center	3	3
Saint Mary's Dialysis Center	4	4
Nephrology Center of Bicol	8	8
TOTAL	30	100%

Research Instruments

This study utilized a researcher-structured questionnaire survey to collect data from the respondents. A thorough review of relevant literature on the subject was conducted. With guidance from our Health Education Professor, Dr. Ma. Teresa De Alban, and input from our peers in the Master of Science in Public Health 2 program, the questionnaire was refined, incorporating all their valuable comments and suggestions.

private dialysis center. They were tasked with completing the tool to identify any ambiguities or difficulties in answering it. Fortunately, no issues were encountered during the completion.

A dry run of the final draft was carried out involving two dialysis patients from each

The first section of the questionnaire focuses on gathering the respondents' profiles, which can be filled out using a checkmark or by providing the relevant information. The subsequent section delves into the common causes of renal failure, categorizing non-modifiable and modifiable

risk factors through a ranking system from one (1) denoting the most common to the

least. Finally, the third part explores potential solutions to address the identified problems.

Data Gathering Procedure

The data gathering procedure commenced with the submission of a letter of approval, accompanied by the questionnaire, to the Head of each Dialysis Center. This step sought official endorsement and cooperation from the respective authorities. Additionally, a letter was provided to the respondents,

seeking their informed consent to participate in the study. This ethical practice ensured that individuals involved were aware of the research, its objectives, and willingly agreed to contribute their insights, reinforcing the ethical standards of the study.

Table 2: Head of Each Dialysis Center

Dialysis Center	Head of Dialysis of Center
Tanchuling Hospital Dialysis Center	Dr. Patricia Iris
Saint Francis- Dialysis Center	Dr. Mary Matriz
Estevez Hospital- Dialysis Center	Dr. Lorna Wong
Saint Mary’s – Dialysis Center	Dr. Melissa Luna Antonio
Nephrology Center of Bicol	Dr. Lezlie YAp

Statistical Treatment

The analysis and interpretation of the gathered data employed straightforward descriptive statistical tools. Percentage, Usual and Reverse ranking, along with their adjectival interpretation, were the key statistical methods used by the researchers to discuss the collected responses. Specifically,

Usual and Reverse ranking, in conjunction with Percentage calculations, were applied to discern the prevalent causes of renal failure, encompassing the profile, modifiable and non-modifiable risk factors, and proposed measures.

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Table 2.a
Age Bracket

Age Bracket	Male		Female		Total		Ranking
	N	%	N	%	N	%	
21-23	2	14.28	3	18.75	5	16.67	3.5
31-40	2	14.28	5	31.25	7	23.33	2
41-50	3	21.42	2	12.50	5	16.67	3.5
51-60	4	28.60	5	31.25	9	30.00	1
>61	3	21.42	1	6.25	4	13.33	5
Total	14	100.00	16	100.00	30	100.0	

Based on the survey responses, a significant proportion of the 30 respondents, precisely 9 individuals (30% of the total), fell within the 51-60 years age bracket, comprising 4 males (28.60%) and 5 females (31.25%). Meanwhile, respondents (23.33%), including 2 males (14.28%) and 5 females (31.25%), were in the 31-40 years age group. Additionally, 16.67% were aged 21-30 years, with 2 males (14.288) and 3 females (18.75%), while another 16.67% were aged 41-50 years, including 3 males (21.42%) and 2 females (12.58). The least represented age group comprised 13.33% of

respondents aged more than 61 years, with 3 males (21.42%) and 1 female (6.25%).

This distribution aligns with Mallappallil et al.'s (2015) study, affirming that the risk of kidney disease increases with age, particularly in the elderly. The prevalence of chronic kidney disease (CKD) is notably high in older individuals, primarily attributed to the growing incidence of traditional risk factors. Consequently, it emphasizes the importance of screening for CKD in individuals with risk factors.

Table 2.b
Educational Attainment

Educational Attainment	N	%	Ranking
Vocational	2	6.67	3.5
High School Graduate	10	33.33	2
College Undergraduate	2	6.67	3.5
College Graduate	16	53.33	1
Total	30	100.0	

This distribution of educational attainment among the respondents highlights that a significant majority, 60%, have attained a college degree. In contrast, 33.33% completed high school, and a smaller percentage, 6.67%, have vocational or college-level education. This educational profile suggests a relatively high level of educational achievement within the surveyed population, which may influence their health literacy and awareness of renal health issues.

Understanding the educational background of the respondents is crucial for tailoring effective communication strategies and educational interventions to address common causes of renal failure in a way that resonates with the diverse educational experiences within the surveyed group.

This is true with the study done by Green (2015), Educational attainment is an important but often overlooked contributor to health outcomes in patients with kidney disease. Those with lower levels of education have an increased risk of ESRD, complications of peritoneal dialysis, worse transplant outcomes, and mortality. Mediators of these associations are poorly understood but involve a complex interplay between health knowledge, behaviors, and socioeconomic and psychosocial factors. Interventions targeting these aspects of care have the potential to reduce disparities related to educational attainment; however, few programs have been described that specifically address this issue.

Table 2.c
Nature of Employment

Nature of Employment	N	%	Ranking
Employed Government	4	13.33	3
Employed Private	7	23.33	2
Unemployed	18	60.00	1
Self-employed	1	3.33	4
Total	30	100.00	

The findings indicate that substantial proportion of the respondents, 60%, fall into the unemployed category. The remaining employed respondents are distributed across various sectors, with 23.33% working in the private sector, 13.33% as government employees, and only 3.33% reporting self-employment. This employment distribution reflects potential variations in income, access

to healthcare, and overall socioeconomic status among the respondents.

The higher prevalence of unemployment could pose challenges in terms of financial resources and, subsequently, healthcare accessibility for this subgroup. Understanding the respondents' employment status is crucial for identifying potential

socioeconomic factors influencing renal health and tailoring interventions to address specific needs within each employment category.

This employment distribution aligns with findings from Kirkeskov et al. (2021), indicating that patients with kidney failure

exhibited a low employment rate both during dialysis and in the pre-and post-transplant phases. The study underscores the importance of supporting kidney failure patients through a comprehensive approach encompassing both clinical and social measures to facilitate their continued employment.

Table 2.d
Family Income

Family Income	N	%	Rank
<P10,000	12	40	1
P10,001 P20,000	9	30	2
P20,001 P30,000	3	10	4
>P30,001	6	20	3
Total	30	100	

The analysis of respondents' income in the study reveals noteworthy insights into the economic status of individuals undergoing dialysis. The majority, constituting 40% of the surveyed population, reported a monthly income of less than P10,000, indicating a significant proportion facing financial constraints. This finding aligns with existing literature, as economic factors are recognized contributors to healthcare disparities and may impact the ability to access essential medical services.

In the second position, respondents reported an and highlighting Income between P10, 001 P20,000, facing moderate substantial portion of the population economic conditions. Understanding the income distribution among dialysis patients 18 crucial for healthcare providers and policymakers, as financial considerations play a pivotal role in treatment adherence,

access to medications, and overall well-being.

The third spot, occupied by 20% of respondents earning more than P30, 000, indicates a relatively smaller but comparatively financially stable group. Lastly, the 10% of respondents with a monthly income ranging from P20,001 to P30,000 represent an intermediate economic status.

These findings emphasize the importance of addressing economic factors when developing interventions and support programs for individuals undergoing dialysis. Tailoring healthcare services to the financial capacities of patients can enhance accessibility and promote equitable healthcare outcomes. Additionally, initiatives aimed at alleviating financial burdens, such as subsidies or financial assistance programs, may be essential for improving the overall

quality care and patient satisfaction in the context of renal health.

The findings from the study align with the research conducted by Ik Chang et al. (2021), emphasizing the profound connection between Income levels and the risk of chronic kidney disease (CKD). The study by Ik Chang et al. underscores that lower income levels are associated with a progressively higher risk of incident CKD. This correlation implies that individuals with lower socioeconomic status face an elevated risk of developing CKD compared to those with higher income levels.

Moreover, the study's observation that risk of CKD is not mitigated among individuals above the median income level suggests that the impact of income on CKD risk is particularly significant in lower-

income populations. This underscores the importance of targeted interventions and focused healthcare strategies for high-risk populations, especially those with Lower income.

The study by Ik Chang et al. also emphasizes that interventions aimed at addressing socioeconomic disparities in healthcare can have a substantial impact on improving outcomes and reducing healthcare costs at a population level. This insight is crucial for policymakers, healthcare providers, and public health practitioners when designing interventions and support programs to prevent and manage CKD. By addressing socioeconomic factors, healthcare initiatives can be tailored to the specific needs of vulnerable populations, contributing to more equitable health outcomes.

Table 2. e
Past Medical History

Past Medical History	N	%	Ranking
Diabetes Mellitus	8	18.60	2
Hypertension	19	44.19	1
Urinary Tract Infection	3	6.98	6.5
Cardiovascular disease	5	11.62	4.5
Pneumonia	3	6.98	6.5
Allergy	5	11.62	4.5
Total	43	100.00	

Table 2.e delineates the prevalent conditions in the past medical history of the respondents, with hypertension and diabetes mellitus emerging as the top two conditions.

These findings align with existing literature, particularly studies conducted by Sarnak et al. (2019), which emphasized the strong association between chronic kidney disease

(CKD) and common risk factors like hypertension and diabetes mellitus. The factors like allergies, presence each reported of cardiovascular disease and underscores the multifaceted nature of health conditions by individuals with renal failure. Additionally,

urinary tract infections and pneumonia were noted, indicating diverse medical histories among the respondents. Understanding these past medical conditions is essential for tailoring interventions, as they contribute significantly to the complexity of health issues in the studied population.

Table 2.f
Past Family Medical History

Past Family Medical History	N	%	Ranking
Allergy (Seafood)/Ashma	12	18.19	2
Cardiovascular	9	13.63	3
Coronary	4	6.06	4
Diabetes mellitus	12	18.19	2
Hepatitis	1	1.51	7
Hypertension	20	30.30	1
Pneumonia	3	4.54	5.5
Pulmonary tuberculosis	2	3.03	6
Urinary tract infection	3	4.54	5.5
Total	66	100.00	

Among renal patients undergoing dialysis, some presented with one, two, or even three past medical histories. As detailed in the table, hypertension emerged as the most prevalent condition, accounting for 20 cases (30.30%), followed by diabetes mellitus and allergy or asthma, each with 12 cases (18,19%), cardiovascular disease ranked third with 9 cases (13,63%), coronary conditions with 4 cases (6.06%), and pneumonia and urinary tract infections with 3

Cases (5.5%). Pulmonary tuberculosis was identified in 2 cases (3.03%) and hepatitis in 1 case (1,51%).

Understanding one's family medical history is crucial for assessing the risk of developing common diseases like renal failure. While physicians usually inquire about a brief medical history during check-ups, conducting a comprehensive family history assessment in primary care can be challenging. It's essential to recognize that

family members share genetics, environments, lifestyles, and personal habits, all contributing factors to disease risk. Thus, family history is an excellent predictor of an individual's disease risk, offering insight into their unique genomic and environmental interactions.

The findings from Table 2.8 highlight the substantial impact of non-modifiable factors on the occurrence of renal failure among patients in private dialysis centers in Albay. Family history, age, and sex stand out as the top three common causes, aligning with assertions made by Al-Baghdadi et al. (2018), who established a robust relationship between hemodialysis patients and these influential factors.

The prominence of family history underscores the potential hereditary component in renal failure, emphasizing the importance of understanding and addressing genetic predispositions. Additionally, the correlation with age and sex emphasizes the need for targeted interventions and tailored healthcare strategies for specific demographic groups. These findings contribute valuable insights to the growing body of research on renal health, urging further exploration into the intricate interplay between patient characteristics and the development of renal failure in the context of private dialysis centers in Albay.

Table 3.a

Usual and reverse rank in the Non-Modifiable Risk Factors in the Common Causes of Renal Failures among patients in private Dialysis centers in Albay

Modifiable Risk Factors	1	2	3	4	5	6	7	8	9	Total Points	Rank
Elevated BP	1 9	2 16	6 42	8 48	5 25	1 4	2 6	1 2	4 4	156	3.5
HPN	8 72	5 40	4 28	4 24	3 15	2 16	2 6	1 2	1 1	156	3.5
Diabetes Mellitus	6 54	12 96	3 21	2 16	1 5	1 4	1 3	3 6	1 1	206	1
Obesity	4 36	3 24	6 42	7 42	3 15	2 8	2 6	2 4	1 1	178	2
UTI	2 18	2 16	3 21	1 6	6 30	4 16	7 21	3 6	2 2	136	6
Drug Toxicity	4 36	2 16	3 21	2 2	4 20	5 20	2 6	4 4	4 4	143	4
Hyperuricemia	2 18	1 8	3 21	3 18	3 15	7 28	4 12	5 10	2 1	132	7
Dyslipidemia	2 18	1 8	2 14	2 16	5 25	3 12	8 24	5 10	2 1	129	8
Autoimmune Disease	2 18	2 16	1 7	1 6	1 5	5 20	4 12	6 2	9 9	105	9

The findings from Table 2.8 highlight the substantial impact of non-modifiable factors on the occurrence of renal failure

among patients in private dialysis centers in Albay. Family history, age, and sex stand out as the top three common causes, aligning

with assertions made by Al-Baghdadi et al. (2018), who established a robust relationship between hemodialysis patients and these influential factors.

The prominence of family history underscores the potential hereditary component in renal failure, emphasizing the importance of understanding and addressing genetic predispositions. Additionally, the

correlation with age and sex emphasizes the need for targeted interventions and tailored healthcare strategies for specific demographic groups. These findings contribute valuable insights to the growing body of research on renal health, urging further exploration into the intricate interplay between patient characteristics and the development of renal failure in the context of private dialysis centers in Albay.

Table 3.b

Usual and reverse Rank in the Modifiable Risk Factors in the common Causes of Renal Failures among Patients in private Dialysis Centers in Albay

Modifiable Risk Factors	1	2	3	4	5	6	7	8	9	Total Points	Rank
	2	8	7	6	5	4	3	2	1		
Elevated BP	1	2	6	8	5	1	2	1	4	156	3.5
	9	16	42	48	25	4	6	2	4		
HPN	8	5	4	4	3	2	2	1	1	156	3.5
	72	40	28	24	15	16	6	2	1		
Diabetes Mellitus	6	12	3	2	1	1	1	3	1	206	1
	54	96	21	16	5	4	3	6	1		
Obesity	4	3	6	7	3	2	2	2	1	178	2
	36	24	42	42	15	8	6	4	1		
UTI	2	2	3	1	6	4	7	3	2	136	6
	18	16	21	6	30	16	21	6	2		
Drug Toxicity	4	2	3	2	4	5	2	4	4	143	4
	36	16	21	12	20	20	6	8	4		
Hyperuricemia	2	1	3	3	3	7	4	5	2	132	7
	18	8	21	18	15	28	12	10	1		
Dyslipidemia	2	1	2	2	5	3	8	5	2	129	8
	18	8	14	16	25	12	24	10	1		
Autoimmune Disease	2	2	1	1	1	5	4	6	9	105	9
	18	16	7	6	5	20	12	12	9		

Table 3.b reveals that diabetes mellitus and obesity stand out as the top two

modifiable risk factors in the common causes of renal failure among patients in private

dialysis centers in Legazpi City, Albay, followed by elevated blood pressure, hypertension, drug toxicity, urinary tract infection, hyperuricemia, and dyslipidemia, in that order.

Corroborating this data, research conducted by Major et al. (2018), Orlandi et al. (2018), Sarnak et al. (2019), and Ammirati (2018) emphasizes that uncontrolled diabetes serves as a primary cause of kidney disease, with high blood sugar levels potentially damaging the kidneys' filtering system. Proper blood sugar management is imperative to prevent kidney damage.

Additionally, being overweight or obese increases the risk of kidney disease,

making healthy weight management through balanced diet and regular exercise crucial for risk reduction. Elevated cholesterol levels, if left unaddressed, can contribute to kidney disease. Managing cholesterol through lifestyle modifications and, when necessary, medication is vital for protecting kidney function.

Furthermore, urinary tract infections (UTIS) are identified as contributors to kidney problems, potentially leading to renal failure if untreated or recurring frequently. The incorrect use or overuse of medications can also induce kidney stress, emphasizing the need for education on proper medication adherence and dosing.

Table 3.c

Rank on the non-modifiable factors in the common causes of renal failure among patients in private Dialysis centers in Albay

Non-modifiable	1	2	3	4	5
Age	4	19	4	1	2
Sex	2	5	14	8	1
Family History	21	5	2	1	1
Ethnicity	1	1	4	14	10
Blood Type	1	1	5	6	17

Table 3.c delineates the ranking of non-modifiable factors in the common causes of renal failure among patients in private dialysis centers in Albay. This ranking provides a valuable snapshot of their relative significance in the context of renal health. Understanding the hierarchy of non-modifiable factors offers insights into the factors that individuals cannot alter but significantly impact their risk of developing renal failure. This knowledge is crucial for healthcare professionals, policymakers, and

researchers in tailoring interventions and strategies to address the specific needs of patients based on these influential, non-modifiable factors. By recognizing the prominence of these factors, healthcare providers develop targeted approaches to enhance early detection, intervention, and overall management of renal failure, contributing to improved patient outcomes and the overall effectiveness of healthcare services in private dialysis centers in Albay.

Table 3. d
Rank on the modified factors in the common causes of
Renal failure among parents in Private
Dialysis Centers in Albay

Modifiable factors	1	2	3	4	5
Elevate BP	1	2	6	8	5
HPN	8	5	4	4	3
Diabetes Mellitus	6	12	3	3	1
Obesity	4	3	6	6	3
UTI	2	2	3	3	6
Drug Toxicity	4	2	3	3	4
Hyperuricemia	2	1	3	3	3
Dyslipidemia	2	1	2	2	5
Autoimmune Disease	2	2	1	1	1

Table 3.d presents the ranking of modifiable factors in the common causes of renal failure among patients in private dialysis centers in Albay. This ranking provides valuable insights into the relative significance of these factors, serving as a guide for developing targeted interventions and preventive measures. Understanding the hierarchy of modifiable factors allows for a

strategic approach to address the most impactful contributors to renal failure, facilitating more effective health interventions and patient education. These insights contribute to the broader goal of improving renal health outcomes and optimizing preventive strategies in the context of private dialysis centers in Albay.

Table 4
Usual and Reverse Rank on the Proposed Measures and Strategies used to enhance or improve the
awareness of the Respondents to the common causes of Renal Failure

Proposed Measures	1	2	3	4	5	Total Score	Rank
	5	4	3	2	1		
Educate Primary Care Physicians and other healthcare providers about the importance of the early detection and promote regular kidney function tests for at-risk patients.	6	5	3	6	4	80	3
Develop educational materials and programs, explain the risk factors, signs, and symptoms of renal failure.	35	20	9	12	4	81	2
Organize a workshop to provide guidance and counseling for individuals with early signs of renal failure.	8	4	3	6	4	64	4.5
Ensure the availability of necessary medications for the treatment of renal failure and support programs for patients who cannot afford the cost of medications.	1	9	4	1	9	86	1
Encourage collaboration between Nephrologist and primary care providers to create personalized treatment plans for patients, including lifestyle modifications, medications adjustments, and referral to appropriate rehabilitation service.	5	36	12	2	9	64	4,5

As depicted in the table, the top-ranked proposed measures, and strategies to enhance awareness of the common causes of renal failure included ensuring the availability of necessary medications for treatment, particularly for patients facing financial constraints.

Following closely was the development of educational materials and programs aimed at explaining the risk factors, signs, and symptoms of renal failure. Educating primary care the physicians and other healthcare providers about significance of early detection for at-risk patients secured the third position.

Tying for the fourth rank were organizing workshops to provide guidance

Proposed Strategies and Measures

Renal failure presents a substantial health challenge, underscoring the importance of comprehending its common causes for effective prevention and management. A targeted set of strategies will be proposed to alleviate the impact of modifiable risk factors and enhance the overall renal health of the population.

The implementation of a comprehensive measure will be carried out to rigorously evaluate the effectiveness of these strategies, ensuring a data-driven approach towards improving patient outcomes in renal health.

1. Educate Primary Care Physicians and other healthcare providers about the importance of early detection and promote regular kidney function tests for at-risk patients

and counseling for individuals displaying early signs of renal failure and fostering collaboration between nephrologists and primary care providers to formulate personalized treatment plans. These plans encompassed and lifestyle modifications, medication adjustments, referrals to appropriate rehabilitation services.

Preventing chronic kidney disease (CKD) and the management of complications is achievable through modifiable risk factors and the implementation of treatments to slow disease progression and minimize associated risks. Maintaining healthy kidneys requires diligent control of those risk factors for CKD that can be altered.

2. Develop educational materials and programs, explain the risk factors, signs, and symptoms of Renal failure

3. Organize a workshop to provide guidance and counseling for individuals with early signs of renal failure

4. Ensure the availability of necessary medications for the treatment of renal failure and support programs for patients who cannot afford the cost of medications

5. Encourage collaboration between Nephrologists and primary care providers to create personalized treatment plans for patients, including lifestyle modifications, medication adjustments, and referral to appropriate rehabilitation service

6. Community Education Programs. Develop and implement community-based education programs that focus on the causes, symptoms, and prevention of renal failure.

Collaborate with local healthcare providers, community centers, and schools to reach a diverse audience.

7. Media Campaigns. Utilize various media channels, including television, radio, and social media, to disseminate information about renal health. Feature success stories, testimonials, and interviews with healthcare professionals to make the information more relatable.

8. Printed Materials. Distribute pamphlets, brochures, and posters in healthcare facilities, community centers, and public spaces to provide easily accessible information. Ensure that materials are available in multiple languages to reach diverse populations.

9. Workplace Wellness Programs. Collaborate with businesses and organizations to incorporate kidney health information into workplace wellness programs. Offer workshops, seminars, and screenings for employees to raise awareness about renal health.

10. Online Resources. Develop a dedicated website or online portal that provides comprehensive information about renal health, including risk factors, prevention tips, and resources for further assistance. Leverage social media platforms to share engaging and informative content.

11. Mobile Health (mHealth) Apps. Create mobile applications that offer personalized information on kidney health, symptom tracking, and reminders for routine check-ups. Include interactive features, such as quizzes and challenges, to engage users in learning about renal health.

12. Collaboration with Patient Advocacy Groups. Partner with advocacy

organizations to their kidney disease leverage networks and resources for awareness campaigns. Support and participate in events organized by these groups to engage directly with affected communities.

13. School Programs. Integrate renal health education into school curricula to ensure that young people are informed about the importance of kidney health from an early age. Encourage students to share what they learn with their families.

14. Screening Programs. Organize regular kidney health screening events in collaboration with healthcare providers. Provide free or low-cost screenings in community centers, churches, and other easily accessible locations.

15. Cultural Competency. Tailor awareness campaigns to be culturally sensitive and relevant to diverse communities. community leaders and influencers who can Collaborate with help convey the message in culturally appropriate ways.

16. Continuous Health Education for Healthcare Professionals. and workshops for healthcare Conduct training sessions and professionals to enhance their knowledge about the common causes of renal failure.

17. Ensure that healthcare providers are well-equipped to educate and counsel patients about kidney health. Implementing a combination of these strategies can contribute to a comprehensive and effective awareness campaign for renal health. It is essential to continuously evaluate and adapt these measures based on the specific needs and characteristics of the target population. for healthcare.

Summary

This study delved into the intricate functions of kidneys, exploring their vital role in maintaining physiological equilibrium. With a focus on patients in Albay's private dialysis centers, the research investigated their socio-demographic and health profiles, emphasizing factors like age, sex, education, occupation, family income, past medical history, and family medical history. The study further scrutinized the common causes of renal failure,

distinguishing between non-modifiable and modifiable risk factors. Additionally, it examined proposed measures and strategies to enhance awareness of these causes among respondents. Anchored in Dorothea Orem's Self-Care Deficit Theory, the study employs a descriptive quantitative research design, utilizing a questionnaire survey to collect data from 32 dialysis patients across five private centers in Legazpi city, Albay

Findings

1. Socio-demographic and Health Profile of the Respondents

In age distribution, individuals aged 51-60 constituted 30.008, while those above 60 were 13.33%. Respondents with college education comprised 53.338, while those with vocational or no college degree comprised 6.67%. Unemployed respondents ranked highest at 60.00%, and self-employed individuals were the lowest at 3.33%. Families earning less than 10,000 pesos claimed the top position at 408, while those earning 20,000 to 30,000 pesos ranked lowest at 10%. Among 51 participants, hypertension in past medical history ranked highest at 44.19%, while allergy to dust was the lowest at 2.32%. In past family medical history, hypertension led at 30.30%, and allergies to seafood and pulmonary tuberculosis were lowest at 3.03%.

2. Common Cause of Renal Failures among Patients in Private Dialysis Centers.

The study revealed that in non-modifiable risk factors, family history scored highest (134 points), followed by

age (112 points), while blood type scored lowest (53 points). Regarding modifiable risk factors, Diabetes Mellitus ranked highest with 206 points, followed by obesity (178 points) • Autoimmune diseases were the lowest among modifiable risk factors, scoring 105 points.

3. Proposed Measures and Strategies to be used to Enhance or Improve the Awareness of the Patients to the Common Causes of Renal Failure

The proposed measures and strategies to enhance awareness about the common causes of renal failure revealed that respondents highly preferred "Ensure the availability of necessary medications and support programs for patients who cannot afford" (86 points). Following closely was "Develop educational materials explaining the risk factors, signs, and symptoms of Renal Failure" (81 points). However, "Organizing workshops for guidance and counseling" and "Encouraging collaboration for personalized treatment plans" received the lowest rank, each scoring 64 points.

Conclusions

The conclusions that were drawn out from the findings in this study to answer the problems sought for were:

1. The Respondents, primarily aged 51-60 and holding diverse educational backgrounds, are mostly unemployed due to health issues, with hypertension being the most prevalent past medical history, and families with a history of hypertension dominate past family medical history.

Recommendations

The recommendations presented are drawn from the derived conclusions and aim to address non-modifiable and modifiable risk factors in managing and preventing chronic kidney disease. These suggestions are integral to enhancing and effectively addressing the study's objectives and healthcare sub-problems and are forwarded to the provider in private dialysis centers.

1. Education and Awareness: Promote public awareness campaigns to educate individuals about the risk factors associated with chronic kidney disease, including both non-modifiable factors such as age, genetics, and family history, as well as modifiable factors like high blood pressure, diabetes, and obesity.
2. Early Screening and Detection: Encourage regular screening for individuals with risk factors, especially those with a family history of kidney disease, diabetes, or hypertension. Early detection can

2. This study emphasizes addressing non-modifiable (family history, age) and modifiable (diabetes, obesity) risk factors for managing and preventing chronic kidney disease. 3. To enhance patient awareness of renal failure, prioritize access to medications, educational materials, and workshops. Collaboration among healthcare providers is crucial for personalized treatment plans, empowering patients and improving outcomes.

3. Lifestyle Modifications: Emphasize the importance of maintaining a healthy lifestyle, including regular physical activity, a balanced diet, and weight management, to mitigate modifiable risk factors such as hypertension, diabetes, and obesity.
4. Blood Pressure and Glucose Control: Stress the importance of blood pressure and glucose control for individuals at risk of chronic kidney disease, particularly those with hypertension or diabetes. This may involve regular monitoring, medication adherence, and lifestyle changes.
5. Smoking Cessation: Encourage smoking cessation programs and support for individuals who smoke, as smoking can exacerbate kidney damage and contribute to the

progression of chronic kidney disease.

6. Regular Follow-up and Monitoring: Advocate for regular follow-up appointments with healthcare providers to monitor kidney function and assess the effectiveness of interventions, especially for individuals with known risk factors. Access to Healthcare: Address disparities in access to healthcare by promoting initiatives that provide

affordable and equitable access to preventive carer screenings, and treatment for chronic kidney disease.

7. Research and Innovation: Support ongoing research into the causes and management of chronic kidney disease, as well treatment options and the development of new treatment options and Interventions to further improve outcomes for individuals at risk.

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