

ASSESSMENT OF NEPHROLOGY DISEASES REPORTING TO TERRITORY CARE HOSPITAL IN GUNTUR, A PROSPECTIVE OBSERVATIONAL STUDYM.Pravallika¹, V.Venkata Prasanna¹, B.Mounika¹, V.Gopi Krishna¹, S.D.Ershad Ali¹, G. Venkata Nagaraju²¹ Department of Pharmacy, SIMS College of Pharmacy, Mangaldas Nagar, Guntur, Andhra Pradesh, India² Assistant Professor, Department of Pharmacy Practice, Hindu College of Pharmacy, Guntur, Andhra Pradesh, India***Corresponding Author**

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Abstract

Currently stimuli can lead to positive outcomes such as well-beingness, good health. The current prospective observational exploratory study was designed to know that which factors influencing the working condition of the kidneys. In this study, every scale was designed with 5 questionnaires as open-ended questions to assess both the positive and negative response of the patient participants in Nephrology unit, based on the hypothesis we are concluded that everyday more people are being diagnosed with kidney injuries, such as Acute Kidney Injury [AKI], Chronic Kidney Disease [CKD], reduced renal function, associated with the development of CKD and leads to the accumulation of collagen brought on by fibrosis and accumulation is the feature of AKI. CKD is a general term covering heterogeneous disorders with an overarching definition of having markers of kidney damage or increased glomerular filtration rate [GFR]. Here we examined the factors associated between age and gender. In this study we included 150 participants, out of which 102[68%] were male and 48[32%] were females. Males are more affected when compared with females. Individuals in between 41-60 age 72[48%] are more affected when compared with the individuals of age between 1-20[3%], 21-40[21%], 61-80[23%], 81-100[5%]. This is occurring due to lack of food intake-fiber rich food, fluid intake, life style-junk food, lack of exercise, stress, over use of tablets, persons addicted to alcohol, smoking etc are the factors which directly effects the health of the people. Still, in specific it's the responsibility of the individual to take care of their health and free from diseases.

Keywords: Chronic Kidney Disease (CKD), End-stage Renal Disease (ESRD), Hypertension, Diabetes, Nephrotic Syndrome, Coronary Artery Disease.

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**Introduction****Kidney**

One kidney is located on either side of the vertebral column on the posterior abdominal wall, below the peritoneum, and below the diaphragm. They receive some protection from the lower rib cage as they reach from the level of the thoracic vertebra to the third lumbar vertebra. Due to the substantial amount of space the liver takes up, the right kidney is often slightly lower than the left. The kidneys are bean-shaped organs that are about 11 cm long, 6 cm wide, and 3 cm thick. They weigh 150 g, and the amount of fat holds them in place. The kidney and the renal fat are encased in a sheath of fibrous connective tissue called the renal fascia.

The Nephron

The nephron is made up of a tubule that is closed at one end and opens into a collecting tubule at the other. The Bowman's capsule, which has a cup-like shape and almost fully encloses the glomerulus, a network of microscopic artery capillaries, is depressed from the closed or blind end. They have a tuft-like appearance. The remaining 3 cm of the nephron, starting from the glomerular capsule, is divided into three segments and is about 3 cm long.

- The distal convoluted tubule, which enters a collecting duct;
- Proximal convoluted tubule
- The medullary loop (also known as the Henle loop);

Diseases of the Kidney

Glomerulonephritis (GN)

Although there are several types of GN and inflammatory alterations are not always present, the word imply glomerulus inflammation. Immune complexes frequently harm the glomeruli. They circulate in the bloodstream after combining with antigens and antibodies, either in the kidney or elsewhere in the body. Immune complexes frequently trigger an inflammatory response that compromises glomerular function when they become lodged in the walls of the glomeruli. In GN, additional immune systems are also involved.

Essential Hypertension

Benign hypertension-This damages the glomeruli gradually and irreversibly, which might result in malignant hypertension or renal failure once the renal reserve has been destroyed.

Malignant hypertension- This results in arteriosclerosis, which spreads to the glomeruli and then destroys nephrons, increasing blood pressure and most people having varying degrees of renal impairment. There are more severe effects in a small number of persons; increased glomerular permeability causes red blood cells and plasma proteins to escape into the filtrate, causing proteinuria and haematuria, which may lead to renal failure.

Secondary hypertension

This is brought on by chronic kidney disease and may result in renal failure, increasing hypertension, and chronic renal ischemia.

Acute Pyelonephritis

This is an acute bacterial infection that has extended to the kidney substance and the renal pelvis and calyces, resulting in the creation of tiny abscesses. The infection may enter the urinary tract through the perineum or be spread through the blood. The symptoms include fever, achy muscles, and loin pain.

Ascending infection

The most frequent cause of this illness is the upward spread of bacteria from the bladder. As the bladder contracts during micturition, abnormal urine reflux into the ureters predisposes to infection spreading upward to the renal pelvis and kidney material. Typically, access of microorganisms to the kidneys is prevented by the relative locations of the ureters and bladder.

Blood-borne infection

The source of the microorganisms may be from septicemia or from another area of the body, such as infected wounds, abscesses, or respiratory tract infections. The kidneys are vulnerable to infection by blood borne microorganisms because of their high blood flow (20% of cardiac output).

Objective hemodynamic examination is essential for proper therapy in several of these situations, including AKI and hyponatremia⁽¹⁾.Agricultural communities, particularly manual laborers in dry, low land regions of Central America, Sri Lanka, and Southern India, are the main populations affected by chronic kidney disease of unknown origin, which is a progressive tubulointerstitial nephropathy⁽²⁾.Using the renal and hematology networks, a survey was circulated to gather insight on anticoagulant prescribing practice in the context of chronic kidney disease (CKD) throughout the UK⁽³⁾.The goal of this study was to identify the pattern of renal disease among kids who visited the hospital's pediatric nephrology clinic⁽⁴⁾.Here, an unbiased transcriptomic-driven method was employed to discover genomic pathways shared by subgroups of individuals with either focal segmental glomerulosclerosis or minimal change illness (FSGS)⁽⁵⁾.

To determine how CKD is clinically affecting functional status and to plan treatment, a thorough geriatric evaluation is necessary ⁽⁶⁾.as part of the standardized outcomes in nephrology-children and adolescents (SONG-kids) initiative⁽⁷⁾.The American Society of Nephrology, the European Renal Association-European Dialysis and Transplant Association, and the International Society of Nephrology Joint Working Group on Ethical Issues in Nephrology have identified 10 broad areas of ethical concern as priority challenges that call for cooperative action⁽⁸⁾.

The current approaches to HK prevention and treatment are still ineffective, as Evidence for this claim comes from the relatively high prevalence of HK, which is also present in patients receiving stable nephrology care while in the hospital and even in the ideal context of randomized clinical trials, when the best care and monitoring are essential⁽⁹⁾.It also offers updated advice on ant hyperglycemic treatment with non-insulin medicines⁽¹⁰⁾.Moreover, heat stress can lead to several electrolyte imbalances, including acute and chronic renal disease, and an increased risk for kidney stones. The nephrologist needs to be ready for an increase in conditions linked to dehydration and heat stress as global warming intensifies⁽¹¹⁾.Moreover, studies have demonstrated that plant-based diets are advantageous for frequent co-morbidities in CKD, such as cardiovascular disease, obesity, diabetes, and hypertension⁽¹²⁾.Reference lists of all included publications and pertinent systematic reviews were manually searched. Relevance was checked on abstracts⁽¹³⁾.

Studies on renal transplant recipients, dialysis patients, and people beginning dialysis have found that the prevalence and severity of ED vary depending on the group⁽¹⁴⁾.Yet there hasn't been a lot of research done to determine how much of a risk both men and women with HTN have from having CKD consequence⁽¹⁵⁾.

Aim

To Assess the Pattern of Nephrology Disease Reporting to Tertiary Care Hospital at Guntur.

Objectives

- 1) To identify the Age and Gender Comparison.
- 2) To identify the Environment status of the patients.
- 3) To identify the Social Habits like Alcohol, Smoking, Tobacco.
- 4) To identify the Family History of the patients.
- 5) To identify Literacy of the patients.
- 6) To identify the Occupation of the patients.
- 7) To identify Co morbidities of the patients.

Materials and Methods

Source of Data will be collected from the case sheets of the enrolled patients in the Nephrology department.

Materials

- Case Sheets of the Patients.
- A Structured Questionnaire form.
- Inform Consent form (In Local Language)

Study Site

Study will be conducted in Vedanta Hospital, Guntur, and Andhra Pradesh.

Study Population

150 Subjects

Study Duration

The study will be conducted for a period of 5 months (December 2022- April 2023)

Study Design

Prospective Observational Study

Study Criteria

The study will be carried out by considering the following criteria.

Inclusion Criteria

1. Patients aged between neonates to 100 years and above.
2. Patients who are positively diagnosed with Nephrology diseases.
3. Patients who are willing to participate in the study.

Exclusion Criteria

1. Patients of age of 1 year and above 100 years.
2. Patients who are already Diagnosed with Nephrology Disease In the above 1 Year
3. Patients suffering from other Co-morbid Conditions (diabetes, asthma, blood transfusion)
4. Patients not willing to participate in the study.

Data to be collected

Socio-demographic data:

1. Name
2. Age
3. Gender
4. Environment
5. Alcohol
6. Smoking
7. Tobacco
8. Family history
9. Literacy
10. Occupation
11. Co morbidities
12. Disease Distribution

Data Analyses

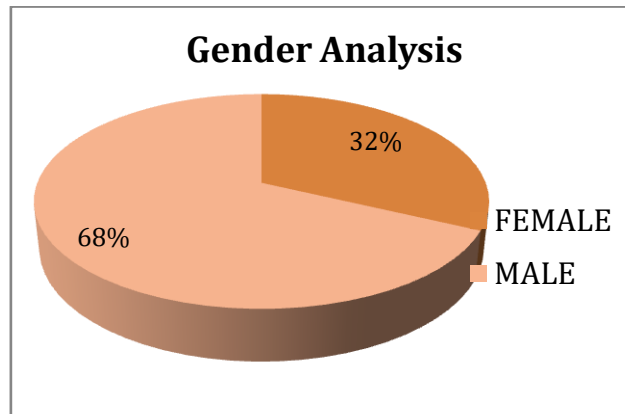
A descriptive Statistical Analysis was performed by using Microsoft Excel 2007.

RESULTS:**1. Gender Analysis**

We have taken 150 participants taken in the survey in this study males are 102 (68%) and females 48(32%). Compare to both males and females, males are more affected than females in our survey. Table no-01, pie chart no-01.

Table no: 01 Gender Analysis

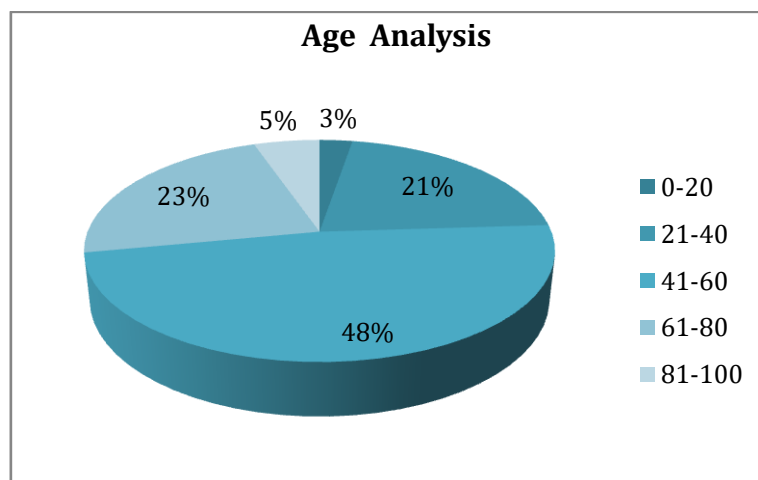
S.NO	Gender	No of Participants	Percentage %
1	Male	102	68%
2	Female	48	32%

**Pie chart no: 01 Gender Analysis****2. Age Analysis**

According to our study we included 150 participants the age between 1-100 and we are distributed into 5 different categories those are 1-20, 21-40, 41-60, 61-80, 81-100. Among those 41-60 age group having more incidences that is 48% compared to other groups of age distribution. Table no-02, Pie chart no-02.

Table no: 02 Age Analysis

S.NO	AGE GROUP	NO.OF PARTICIPANTS	PERCENTAGE
1	1-20	4	3%
2	21-40	32	21%
3	41-60	72	48%
4	61-80	34	23%
5	81-100	8	5%

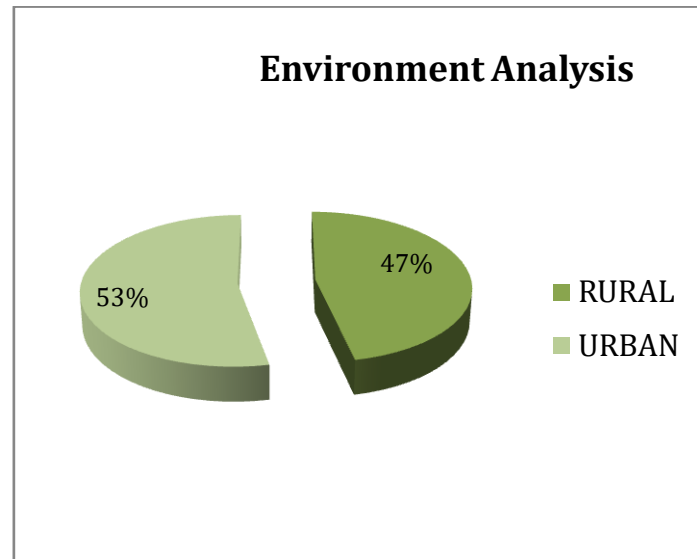
**Pie chart no: 2 Age Analysis**

3. Environment Analysis

According to the Environment analysis, we found Rural (47%) and urban (53%). compare to rural versus urban, urban people are high as compared to rural people as shown in table no-03, pie chart no-03.

Table no: 03 Environment analyses

S.NO	Environment Rural\Urban	No of Participants	Percentage
1	Rural	70	47%
2	Urban	80	53%



Pie chart no: 03 Environment Analysis

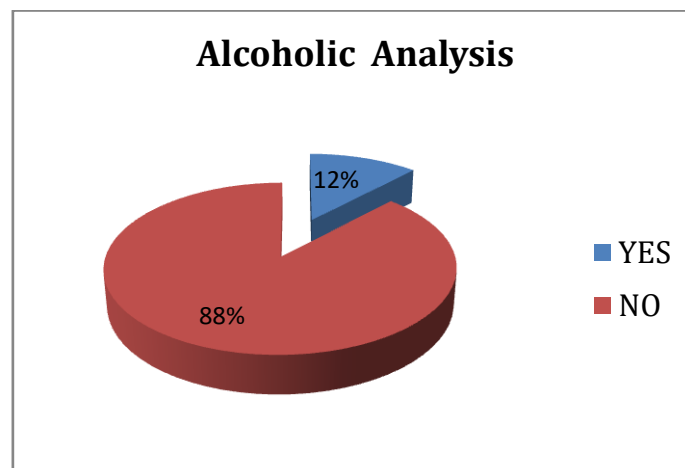
4. Social Habits

4.1 Alcohol Analysis

According to the Alcoholic survey Alcoholic persons was found be (12%) and Non-alcoholic persons were found to be (88%) As compared to both Non-Alcoholic persons was more among the alcoholic. Table Pie chart no-4.1 and no-4.1.

Table no: 4.1Alcohol Analysis

S. No	Alcohol	No of Participants	Percentage
1	Yes	18	12%
2	No	132	88%



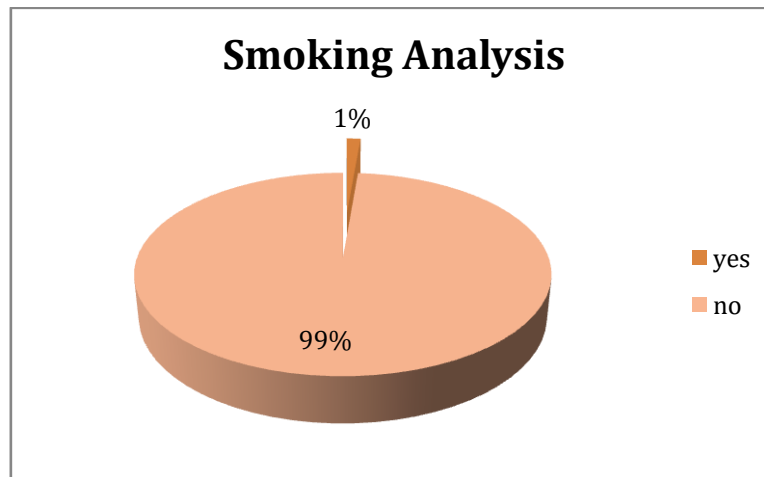
Pie chart no: 4.1 Alcohol Analysis

4.2. Smoking Analysis

According to the smoking survey, Smoking persons were found to be (1%) and Non-smoking persons were found to be (99%) As compared to both Non – Smoking persons were more among the smoking persons. Table no - 4.2 and pie chart no – 4.2.

Table no: 4.2 Smoking Analyses

S. No	Smoking	No of Participants	Percentage
1	Yes	2	1%
2	No	148	99%



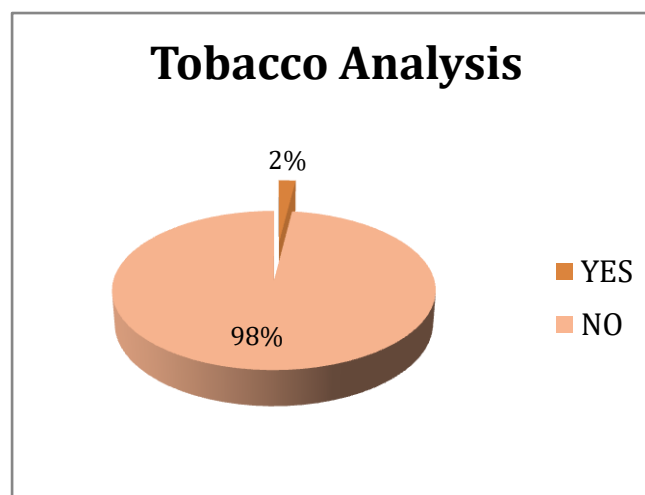
Pie Chart No: 4.2 Smoking Analyses

4.3. Tobacco Analysis

According to the survey, Tobacco persons were found be (2%) and Non-Tobacco persons were found to be (98%). As compared to the both non-tobacco persons were more among the Tobacco persons. Table no-4.3 and pie chart no-4.3

Table no: 4.3 Tobacco Analyses

S. No	Tobacco	No. of Participants	Percentage
1	Yes	3	2%
2	No	147	98%



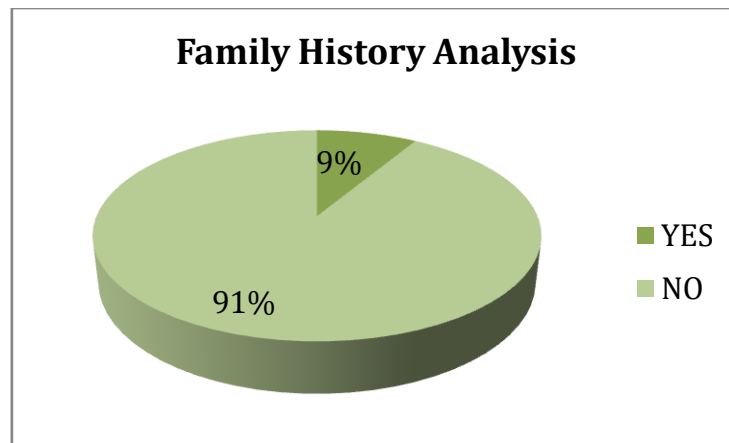
Pie Chart No: 4.3 Tobacco Analysis

5. Family History Analysis

According to the survey family history, people were found to be (9%) and No family history people were found to be (91%). As compared to both No family history people were more among family history people. Table no - 05 and pie chart no - 05.

Table No: 05 Family History Analyses

S. No	Family History	No. of Participants	Percentage
1	Yes	13	9%
2	No	137	91%



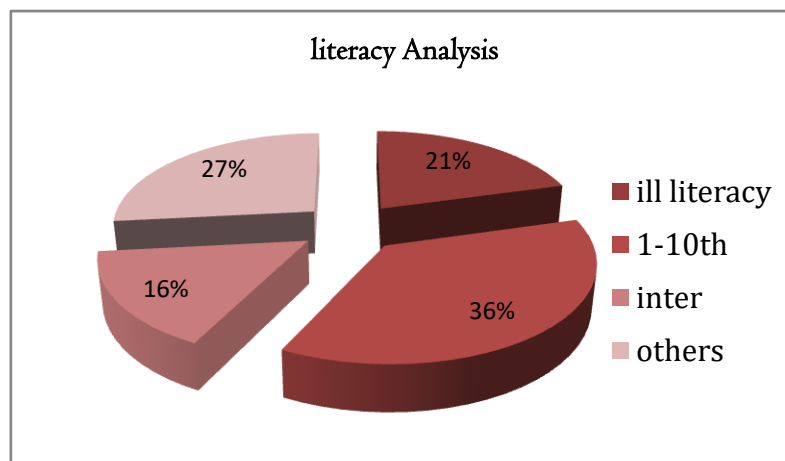
Pie Chart No: 05 Family History Analysis

6) Literacy Analysis

According to the survey the ill literacy people were (20%) literacy people 1-10th (37%) and intermediate people were (16%) and others were (37%). As compared to our study 1-10th people were more than other educated people. As shown in Table no- 06 and pie chart no 06.

Table No: 06 Literacy Analyses

S. No	Literacy	No. of Participants	Percentage
1	Ill Literacy	31	21%
2	1-10th	55	36%
3	Intermediate	24	16%
4	Others	40	27%



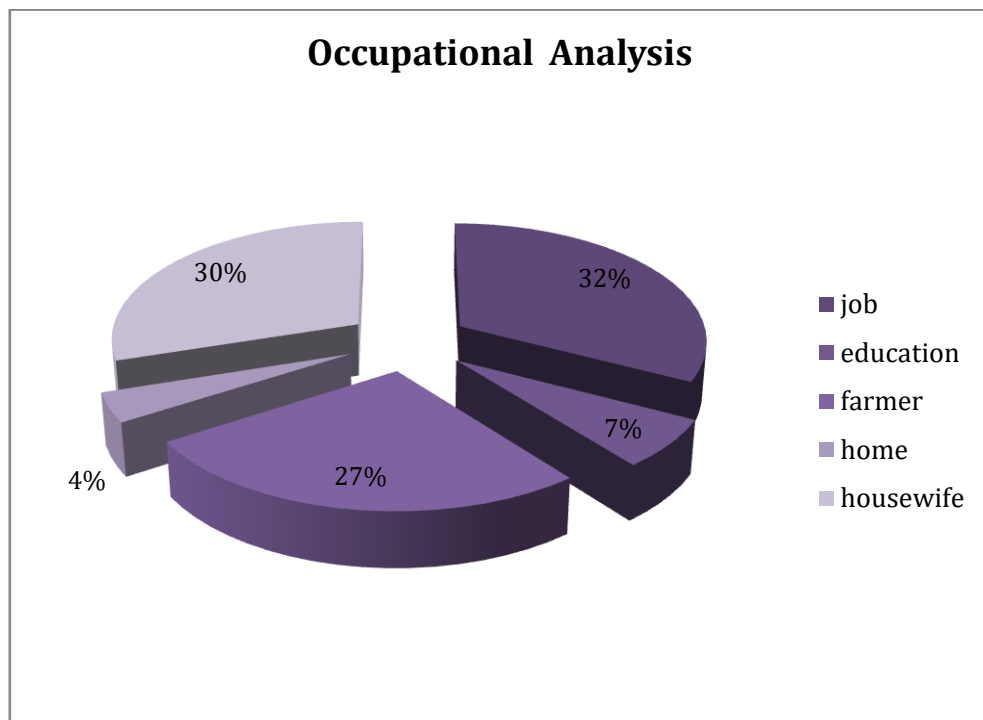
Pie Chart No: 06 Literacy Analysis

7. Occupational Analysis

According to the survey we have observed job persons was (33%), education was (7%), farmers was (26%), the home was (4%) and finally house wives was (30%). As compared to the jobbed persons was more effected than compared to the others. As shown in table no- 07 and pie chart no 07.

Table No: 07 Occupational Analyses

S. No	Occupation	No. Of Participants	Percentage
1	Job Persons	49	32%
2	Education	10	7%
3	Farmers	40	27%
4	Home	6	4%
5	House Wife	45	30%



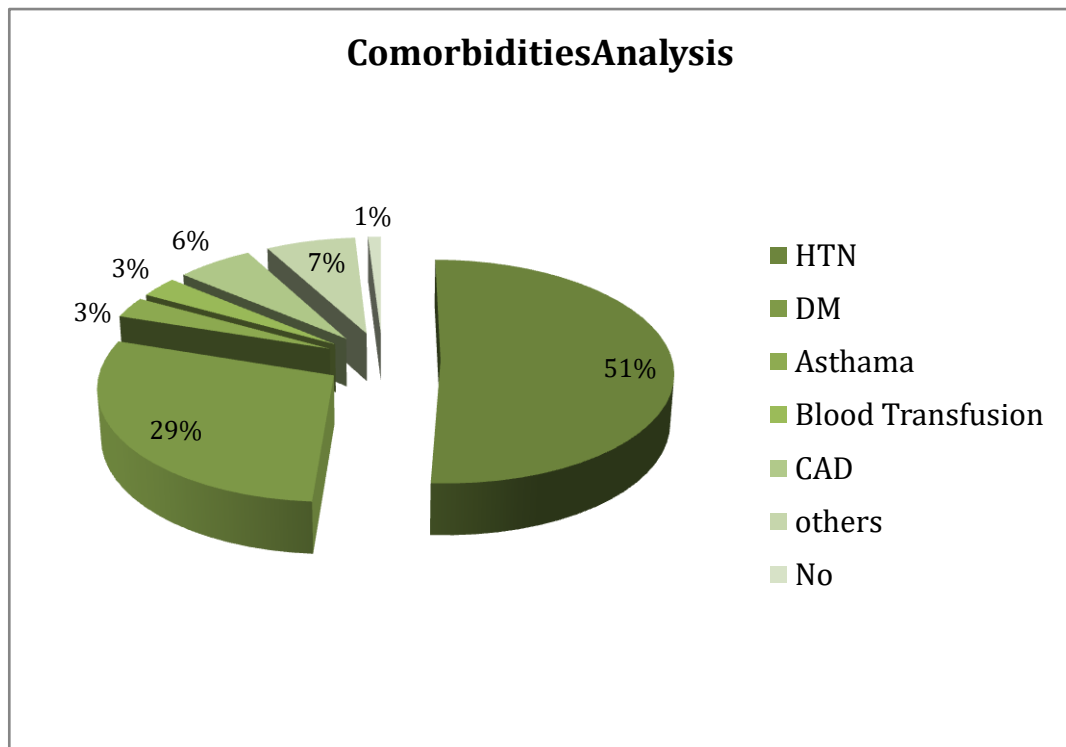
Pie Chart No: 07 Occupational Analysis

8. Co morbidities Analysis

According to the survey we have observed Hypertension was 109 patients (51%), Diabetes was 62 patients (29%), CAD was 13 patients (6%), Blood Transfusion was 7 patients (3%), Asthma was 7 patients (3%), and Others was 15 patients (1%). As compared to Hypertension, Diabetes was more affected than Asthma, and others. As shown in table no-08 and pie chart no-08.

Table No: 08 Co morbidities Analysis

S.NO	Comorbidities	No. of Participants	Percentage
1	Hypertension	109	51%
2	Diabetes	62	29%
3	CAD	13	6%
4	Blood transfusion	7	3%
5	Asthma	7	3%
6	others	15	7%
7	No	1	1%



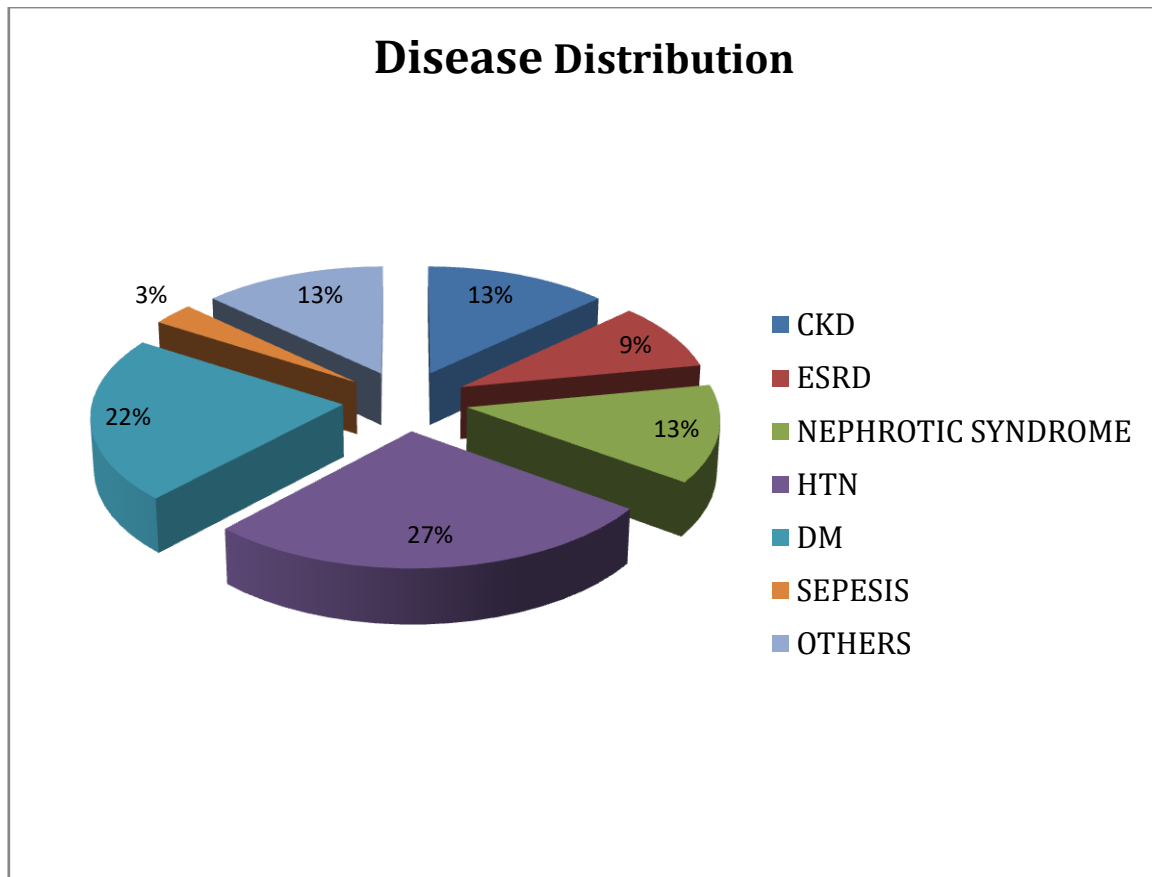
Pie Chart No: 08 Co morbidities Analysis

9. Disease Distribution

According to the survey we have observed Chronic Kidney Disease (CKD) was 41 patients (13%), End Stage Renal Disease (ESRD) was 31 patients (9%), Hypertension in 100 patients (27%), Diabetes was 80 patients (22%), Nephrotic syndrome was 50 patients (13%), Sepsis was 10 patients (3%), and Others (Acute gastritis, acute febrile illness, glomerular nephritis, glomerular pancreatitis, AVF, chest infection, demographic fever, ESWL for uterine stone, High fever with chills, left obstructive uropathy, post renal transplant renal biopsy) was 48 patients (13%). As compared to Hypertension, Diabetes was more affected than asthma, and others. As shown in table no- 9 and pie chart no 9.

Table No: 09 Disease Distributions

S. No	Diagnosis	No. of Participants	Percentage %
1	Chronic Kidney Disease	41	12%
2	End Stage Renal Disease	31	9%
3	Hypertension	100	27%
4	Diabetes	80	22%
5	Nephrotic Syndrome	50	13%
6	Sepsis	10	4%
7	others	48	13%



Pie Chart No: 09 Disease Distributions

DISCUSSION

underlined the importance of evaluating factors such as gender analysis. In these studies, males lupus nephritis, which is strongly female-predominant. Age, alcohol consumption, obesity, and smoking are the main causes of the occurrence of nephrology diseases. Focusing efforts to understand the factors of counseling services regarding these techniques along with awareness programs associated with kidney diseases could also assist individuals with good health. When a study is conducted on the Development of Cell Therapies for Renal Diseases and Regenerative Medicine and they concluded that everyday more people are being diagnosed with kidney injuries, such as acute kidney disease [AKI] and chronic kidney disease [CKD]. Reduced renal function, associated with the development of CKD and leads to the accumulation of collagen brought on by fibrosis and inflammation, is the primary feature of AKI.

In gender analysis, as per our case study, we found males 102 (68%) are more affected than females 48 (32%) respectively which is almost similar to other studies reported by Beckwith et.al. The age group of 1-20 4 (3%), 21-40 32 (21%), 41-60 72 (48%), 61-80 34 (23%), and 81-100 8 (5%). 41-60 72 (23%) are more affected than other age groups which are almost similar to other studies reported by AlwahaibiNY et.al (2019).

People belonging to urban areas 80 [53%] are more affected than people living in rural environments [47%]. According to this, we concluded that people living in urban environments are more prone to pollution, stress, etc. Based on our case study on social habits like alcohol our results found that non-alcoholic persons 132 [88%] are more than alcoholic persons 18 [12%].

According to the smoking analysis, we found that non-smokers 148 [99%] are more among the smoking persons 2 [%]. As compared to tobacco and non-tobacco consumers, tobacco-consuming persons 3 [2%] are less when compared to non-tobacco consumers 147 [98%].

Based on our study people having a family history 13 [%] are more when compared to people not having any family history 137 [91%]. Based on the literacy analysis we found that people having literacy from 1-10th and others are more affected than the people who are illiterate 31 [20%] and also intermediate 24 [16%].

Compared to all the variables of occupation, we have observed that job persons were 49 [23%], educated were 10 [7%], farmers are 40 [27], people living in homes 6 [4%], and housewives are 45 [30%]. Among all these persons with jobs, 49 [32%] were affected compared to other occupations.

According to the analysis of co morbidities, we have observed that patients having hypertension 109 [51%], diabetes 62 [29%], CAD 13 [6%], blood transfusion 7 [3%], asthma 7 [3%], and others 1 [%]. As compared to all the factors hypertension, and diabetes were more affected than asthma and others which is almost similar to other studies reported Yahr J et.al (2022).

Based on disease distribution we have observed that patients with Chronic Kidney Disease[CKD] 41[13%], End Stage Renal Disease[ESRD] 31[%], Hypertension 100[27%], Diabetes 80[22%], Nephrotic Syndrome 50[13%], Sepsis 10[4%], Others [Acute gastroenteritis, acute febrile illness, glomerular nephritis, glomerular pantries, AVF, chest infection, demographic fever, ESWL for uterine stone, high fever chills, left obstructive uropathy, post renal transplant, renal biopsy] 48 patients[13%]. As compared to hypertension, diabetes patients with asthma were more affected. This is similar to other studies reported by *Chen TK et.al*(2019).

Conclusion

The study accordance with the conclusion that is similar to many other studies conducted on nephrology diseases among patients with hypertension, addiction to alcohol, and smoking in India the results of the study underlined the importance of evaluating factors such as comorbidities, family history, and environmental analysis. These are all factors which are influencing the effectiveness of the kidneys. Focusing efforts to understand these factors further would be helpful for patients in enhancing their health of the people. Efficient counseling services regarding these techniques along with health awareness programs could also assist

Total, we have taken 150 patients on variable factors like gender analysis, age analysis, and environment analysis, social habits like alcohol, smoking, and tobacco, family history, literacy analysis, occupational analysis, comorbidities, and disease distribution. In gender analysis males more actively participated in our case study 102[68%] for females 48[32%].

We found males 102 (68%) are more affected than females 48 (32%) respectively which is almost similar to other studies reported by Beckwith et.al. The age group of 1-20 4 (3%), 21-40 32 (21%), 41-60 72 (48%), 61-80 34 (23%), and 81-100 8 (5%). 41-60 72 (23%) are more affected than others.

People belonging to urban areas 80[53%] are more affected than people living in rural environments [47%]. According to this, we concluded that people living in urban environments are more prone to pollution, stress, etc. Based on our case study on social habits like alcohol our 18[12%]. Based on the smoking analysis, we found that non-smokers 148[99%] are more among results found that non-alcoholic persons 132[88%] are more than alcoholic persons the smoking persons 2[%]. As compared to tobacco and non-tobacco consumers, tobacco-consuming persons 3[2%] are less when compared to non-tobacco consumers 147[98%].

In our study, people having a family history 13[%] are more when compared to people not having any family history 137[91%]. Based on the literacy analysis we found that people having literacy from 1-10th and others are more affected than the people who are illiterate 31[20%] and also intermediate 24[16%].

Compared to all the variables of occupation, we have observed that job persons were 49[23%], educated were 10[7%], farmers are 40[27], people living in homes 6[4%], and housewives are 45[30%]. Among all these persons with jobs, 49[32%] were affected compared to other occupations. This is because of work stress in the particular job.

We have observed that patients having hypertension 109[51%], diabetes 62[29%], CAD 13[6%], blood transfusion 7[3%], asthma 7[3%], and others 1[%]. As compared to all the factors hypertension and diabetes were more affected than asthma and others.

Based on disease distribution we have observed that patients with Chronic Kidney Disease[CKD] 41[13%], End Stage Renal Disease[ESRD] 31[%], Hypertension 100[27%], Diabetes 80[22%], Nephrotic Syndrome 50[13%], Sepsis 10[4%], Others [Acute gastroenteritis, acute febrile illness, glomerular nephritis, glomerular pantries, AVF, chest infection, demographic fever, ESWL for uterine stone, high fever chills, left obstructive uropathy, post renal transplant, renal biopsy] 48 patients[13%]. As compared to hypertension, diabetes patients with asthma were more affected.

Compared to all the factors we are concluded that males are more effected than females, individuals with 41-60 age 72[48%] are more effected than the other age group. This is occurring due to lack of awareness among the people about occurrence of diseases, diet plan, and life style.

Conflict of Interest

Authors are declared that no conflict of Interest

Funding

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Author Contribution

All authors are contributed equally.

Ethical approval

Not applicable

Inform Consent

Not applicable

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