

**PATIENT'S KNOWLEDGE, ATTITUDE AND PRACTICES  
REGARDING CHRONIC KIDNEY DISEASE**

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**PATIENT'S KNOWLEDGE, ATTITUDE AND PRACTICES REGARDING CHRONIC  
KIDNEY DISEASE**

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A project submitted in partial fulfillment of the requirements for the degree of Bachelors in  
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## DECLARATION

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I hereby declare that this Project is the result of my own work, except for quotations and summaries, which have been duly acknowledged.

Signature: .....

Date: .....

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## **ABSTRACT**

A cross-sectional descriptive study was conducted to identify the patient knowledge, attitude and practices regarding CKD. The study setting was the nephrology department of IGMH. A total of 102 patients who have consulted to nephrology was conveniently selected for the study. Study was conducted from 2 October 2016 to the 25<sup>th</sup> October 2016. Areas from which data was collected are sociodemographic status, knowledge, attitude and practices regarding the CKD.

Chronic kidney diseases is major health concern in both nationally and internationally. In Maldives context there was very limited studies carried out to find out the actual scenario of the CKD in Maldives , So this study was only formulated to conduct KAP survey regarding CKD.

Result, 68.6% participant in this study was adult, the total male 46.1% and female 53.9%, 56% of the sample population is lack of knowledge regarding the CKD only 44% of participants have proper knowledge regarding CKD. The attitude of the participants had indicated that the 56% of patients was having a positives perspectives regarding the health believes related to the CKD. Only 52% of patients is practicing good health practices which can keep them healthy. However, 48% of patients overall practices not healthy.

Conclusion, to prevent the community from this chronic illness like CKD, health education intervention programs such as social media campaign, TV programs need to be conducted to increases the awareness level of the community. As policy regarding the preventive care need to be strengthen in Maldives community.

**Key words:** Chronic kidney diseases, knowledge, Attitude, practices

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## **LIST OF ABBREVIATIONS**

CKD- Chronic Kidney Disease

WHO- World Health Organization

CVD- Cardiovascular Disease

IGMH- Indira Gandhi Memorial Hospital

KAP- knowledge, Attitude and practices

# CHAPTER 1

## 1.0 INTRODUCTION

### 1.1 Background to the study

The kidney is one of the major vital organs in the human body, which meets the body's needs to maintain water, electrolytes, acid-base balance and to eliminate the products of protein metabolism. Chronic Kidney disease is characterized by the progressive loss of kidney function. In the early stages there may be no symptoms and a significant decline in function generally occurs over months or years (Fiona Oglesby, 2012).

Non communicable disease are increasing worldwide, according to the WHO 38 million people dies due to various type of non-communicable disease each year. Among this disease chronic kidney disease is recognized as one of the public health problem in worldwide. According to the 2010 global burden disease study, chronic kidney disease was ranked 18<sup>th</sup> in list of all cases of total number of deaths worldwide. However, in 1990 when this list was created the CKD's was ranked in 27<sup>th</sup>. (Lancet, Jul 20 2013). This shows how much faster the CKD is becoming a health crisis in worldwide. Patient knowledge of the non-specific nature of symptoms indicative of a decline in kidney function could assist with earlier detection of disease progression.

In 1990 CKD was listed as 25<sup>th</sup> leading cause of death in Maldives however, in 2010 the CKD have been the 14<sup>th</sup> leading cause of death in Maldives. This shows how significantly CKD have affected the community.

KAP survey is conducted because the data collected in this can find the knowledge gapes, cultural believes, efforts or barriers which the community face to control CKD. The KAP survey ca help the program managers to set the priorities and take decisions to address the problems. On the other hand create a baseline to compere the result of the intervention programs regarding CKD (WHO, 2014). Finding how much knowledge dose the patients have regarding the specific symptoms related to the CKD can be a helping tool for the patients in the process of earlier detection of the disease progression (Fiona Oglesby, 2012).

## **1.2 Problem status and justification**

According to the global burden of diseases injuries and risk factors study 2010, in Maldives the chronic kidney disease has become a public health threat, in 1990 when first this list was created chronic kidney disease was raked in 25<sup>th</sup> leading cause of deaths in Maldives which is 0.7% of total deaths on that year. However in 2010 when list was obtained the chronic kidney disease was ranked in 14<sup>th</sup> leading cause of deaths in Maldives which contribute 2.2% of total deaths. This shows from 1990 to 2010 the chronic kidney disease has moved 11 set up on the global burden of disease profile of Maldives. This shows how serious the chronic kidney disease is growing among the general population.

According to the Maldives health report 2012, 34 people have lost their life due to renal failure. Furthermore, in health profile of Maldives 2014 according to this data the number of people losses their life due to renal failure was 23 people. In addition to this,

the number has increased 42 according to 2016 health profile of Maldives. All most the number of people died due to renal failure been doubled in two years period. Since, the mortality rates due renal failure are increasing day by day in Maldives, it is important to conduct research to find out the awareness level of Maldivian community regarding the chronic kidney disease.

### **1.3 Purpose of the study**

Purpose of this study is to find out patients knowledge, attitude and practices regarding chronic kidney disease

The primary objective of this study was to identify the patients, knowledge, attitude and practices regarding chronic kidney disease.

The specific objective of this study was to:

- Find out patients Knowledge regarding CKD
- Assess the attitude of patients regarding CKD
- Explore the level of awareness regarding CKD

### **1.4 Research question**

What are the knowledge, attitude and practices regarding chronic kidney disease, among the patient who is consulting to nephrology department of IGMH?

### **1.5 Significance of the study**

This research will be a helping tool for the health professionals when designing and conducting the awareness program related to CKD. This research can identify how much understanding or knowledge dose the patient have regarding CKD. This research can be

used by other researchers to explore this study area further more, on the other hand study can also be used by the relevant authorities like health ministry and NGOs to understand the risk behavior in the Maldivian society, which leads to CKD in Maldives.

## **1.6 Delimitation**

The CKD is one of the rising public health problem in worldwide and also in Maldives. Each year according to the health statistics the number of people facing this CKD are increasing in this small island nation , 2016 health profile of Maldives have recorded 46 deaths due to renal failure.

The study was only limited to the patient who are consulting to the nephrology department of the IGMH. However, other private hospitals in Male' city also have nephrology departments like ADK hospitals. Why IGMH have been chosen to conduct this study, because it's only tertiary level hospital which is under government and have only Maldivian nephrologist so it was easy to collect the sample during the research period and have highest number of dialysis capacity. This research was focusing on understanding the patient's knowledge, attitude and practices regarding chronic kidney disease. A structured questionnaire was used to identify the patient's awareness level regarding CKD this will be identified by asking question regarding the knowledge, attitude and practices of the patients regarding the CKD. This research was focused only to the assess the awareness level of the patients because in Maldives past histories this area was not studied. So this study will be a gate way for other researchers to study this area.

## **1.7 Definition of terms**

**Age:** age of the participants at the time of the interview

**Sex:** states whether male or female

**Education:** highest level of educational achievement

**Occupation status:** nature of employment status

**Patients:** people who is consulting the nephrologists at IGMH

**Knowledge:** amount of information patients have regarding CKD

**Attitude:** Patients perspective towards CKD

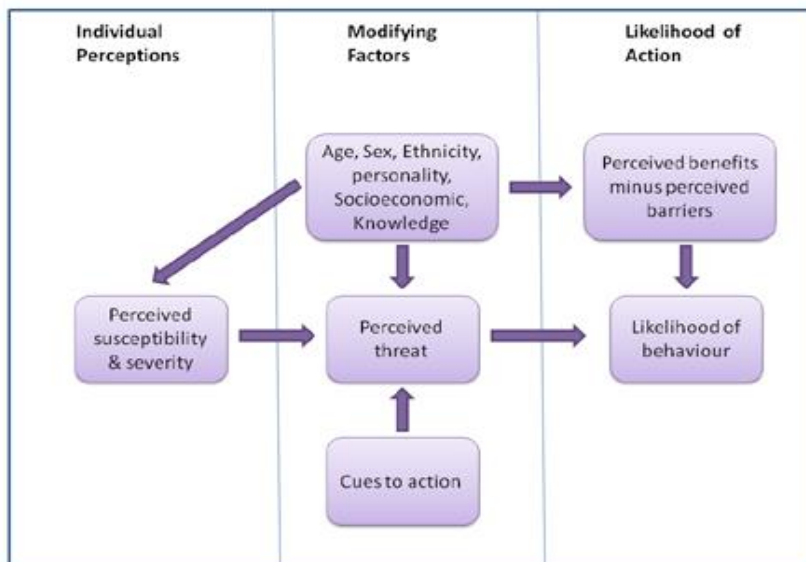
**Practices:** behavior of patient related to the CKD

## CHAPTER 2

### 2.0 LITERATURE REVIEW

#### 2.1 Theoretical Framework

The main theory used in this study is “Healthy Belief Model”. The Health Belief Model (BMH) (Hochbaum, 1958; Rosenstock 1966; Becker, 1974; Sharma and Roams, 2012), this model was first developed by Hochbaum in 1950s to explain why the screening program implemented in the united states of Americana mainly for tuberculosis, were not very success full (Bartlett, nd). This model was father developed by the Rosenstock and others in 1988 so that this model can be better fit in the challenges changing the habits which is consider as unhealthy behaviors such as smoking, overweight and obesity (n.d, 2016)



**Figure 2.1: The Health Belief Model (HBM) Source Glanz, Rimer and Lewis, 2002**

The Health Belief Model is a theory intervention used explain the individual person knowledge and belief regarding the problem. Since 1950s when the theory was developed it is continuous to most commonly used theory used theory in intervention sciences (Burke, nd). The components of health belief model are divided into three main categories. That is individual perceptions, modifying factors and likelihood of action. Individual perceptions include perceived susceptibility of the disease or illness and perceived severity of the disease or illness. Modifying factors are comprised of demographic variables like age and sex, personality, socioeconomic status and knowledge. Finally the last category consists of perceived benefits of preventive action versus perceived barriers to preventive actions and likelihood of behavior change (Karen Glanz, 2008). A variety of health behaviors could be modified or changed by applying HBM and it is useful in changing the patients' awareness regarding illness and would increase the effectiveness of the treatment of those illnesses (Sheeran, 2005).

In turkey 2011 a study was conducted to examine the health belief model of women's attitude to attitudes to cervical cancer and early diagnosis study have shown that they clearly identify with the help of HBM women's awareness are insufficient related to the cervical cancer and early diagnosis (Suleyman Demirel University, 2011). Health belief model review was carried out related to the mammographic or pap screening they have found strong support from the findings that HBM perceived benefit a barrier other aspects of the models (Brown, 2010). The HBM theory will provide pathway to study the health related topics. So the HBM is the perfect theoretical model to analyze the knowledge, attitude and practices of the Patients regarding CKD.

Since development of health belief model in 1950s, this model have been used in many country to create the intervention programs. A study conducted using the health belief model in 2014. The study was conducted to explain the role of health belief model related to puberty this study concluded that improving the susceptibility, barriers and cues to action can lead to physical puberty in teen age group (Shirzadi, 2015).

Most of the health belief models have established cross-sectional survey designs. A research conducted in china regarding the obstacles to colorectal cancer screening use the health belief model have concluded that perceived health behavior and barriers to screening test is higher (JJ, 2007). Another research done by Bloom and Hart (1980) on “the relationship between the health belief model and compliance of persons with Diabetes mellitus” measured the level of patients’ beliefs towards their illness and cues to action. A relationship was found between the overall patients’ compliance level and their health belief motivation.

## **2.2 Brief description of CKD**

Chronic Renal Failure (CRF) is an irreversible and progressive kidney failure where body fails to maintain metabolic and electrolytic balance, resulting in uremia, metabolic acidosis, anemia, electrolyte imbalances and endocrine disorders. Its main causes are diabetes, hypertension, glomerulonephritis and polycystic kidney disease. (Stavroula Gerogianni, 2014).

The National Kidney Foundation defined chronic kidney disease based on specific criteria:

- Kidney damage for greater than or equal to 3 months with or without decreased glomerular filtration rate (GFR) or
- GFR less than 60 mL/min (milliliters per minute) for greater than or equal to 3 months with or without kidney damage (National Kidney foundation , 2016)

Kidney damage is defined as structural or functional abnormalities of the kidney or a large urinary tract infection causing a decrease in circulating blood to the kidney (emedmd, 2015).

The rate at which the CKD effect the health of the patients depend on various factors such as age, gender, type of underlying renal disease and genetics (emedmd, 2015).

As the CKD is slow progressing disease there are 3 types of patients they are asymptomatic, patient with associated disease and patients with symptoms (emedmd, 2015).

There are several indicators of CKD, below there are three indicator of CKD. Medical history of More than 6 months' ill health, long-standing hypertension, proteinuria, nocturnal for more than 6 months, sexual dysfunction, abnormalities previously detected during routine medicals and/or pregnancies, recurrent illness during childhood, finding from medical examination findings like pallor, pigmentation and evidence of long standing hypertension. Nevertheless the investigations which conform that the patients is having CKD are positive find from kidney function test (high blood urea, high creatine phosphate level) and ultrasound test (emedmd, 2015) .

Kidney is a vital organ in human body which will filter the blood to remove the unwanted substances from the body like uric acid, function is carried out by small tiny filter called glomerular nephrons. If this nephrons stop their function this substance will accumulate in

the body. If slowly the function of the kidney stops than this condition is called Chronic Kidney disease (ND, 2016) . The most common causes of the CKD is untreated hypertension for many years and Diabetes Mellitus (type 1 and 2). There are several stage of CKD this is determined by the Glomerular Filtration Rate (GFR) (kidneyresearchuk, kidneyresearchuk, 2015)

### **2.3 Risk factors of CKD**

Diabetes mellitus is one of the common risk factor which can increases of chance that the patient can be effected by CKD in near future. Other risk factor is the hypertension a study conducted in the Dutch two primary care hospital have indicated that the prevalence rate of CKD was 28% in diabetic patients and 21 % was indicated among the hypertensive patients (Meer, 2010).

### **2.3 CKD Global situation**

. About 1 in 10 people worldwide have some degree of CKD which means 10% of worldwide is effected by the chronic kidney disease. Millions of people died due to CKD and 2 million people receive treatment (Foundation, 2016). According to the kidney research UK have mention that over 3 million people in UK face CKD problem (kidneyresearchuk, 2013). Chronic kidney disease (CKD) slowly gets worse over months or years, you may not notice any symptoms for some time. The loss of function may be so slow that you do not have symptoms until your kidneys have almost stopped working (Miller, 2013).

### **2.3 Demographic factors in relation with CKD**

The demographic factors such as the age, sex and occupation have some relationship with CKD. From all this factors age play a vital role. As age increases the chance of getting CKD also increases a study was conducted using 209,622 US veterans with CKD stages have indicated that the GFR rate decrease as the age increase ranging from 45 ml/min per 1.73 m<sup>2</sup> for 18 to 44 year old patients to 15 ml/min per 1.73 m<sup>2</sup> for 65 to 84 year old patients, this indicates that as age increase the kidney function also decreases (Soc, 2007). Some study have indicated that men are more prone to chronic kidney disease compare to women according to the US renal data when all cases was indicated this (Radu Iliescu, 2008) .

### **2.4 Knowledge, attitude and practices in relation with CKD**

As we all know that prevention is better than the cure, so for this every individual in the community must get aware about the major global health issues like CKD. To practically follow this message, community need to have proper information regarding this topics, so that they can take early action or modify the behavior. A majority of CKD cases were not clinically recognize mainly because of the lack of patients' awareness about CKD risk factors (Ferris and colleagues 2009). National kidney foundation Singapore have conduct a study to find out how much knowledge does the primary care patients have regarding CKD. Result have indicated that the education program must be focus to low education level patients which have very limited knowledge regarding the CKD (BMC Nephrology, 2012). A cross-sectional study conducted in Malaysia among the secondary hospital patient have reveler that the Malaysian population is still having inadequate knowledge regarding the CKD especially those people who are at high risk of developing CKD. The study was

conducted among 300 patients only 78.6% people have responded to all question in the questionnaire (Ng, 2016). As illustrated in the Health belief model knowledge of chronic kidney disease underpins the success of disease prevention without adequate basic knowledge of risk factors for developing CKD, and that early CKD can present asymptotically, there would be a low level of perceived susceptibility even among the high-risk population. Being unaware that CKD cannot be cured with medications could also affect the level of perceived seriousness in the individual (BMC Nephrology, 2012). Knowledge is conceptualized as beliefs about specific disease or condition. Patients need to gain knowledge about the kidney and its physiology, signs and symptoms, and risk factors in order to prevent CKD occurrence (Abdalahim, 2014).

A study conducted in US have concluded that the level of awareness and Knowledge play a significant role in prevention of CKD (Plantinga, 2010). Knowledge, attitudes and practices assessment could be an early step forward to assess the extent to which an individual can adopt healthy behaviors (Abdalahim, 2014). A majority of CKD cases were not clinically recognize mainly because of the lack of patients' awareness about CKD risk factors (Ferris and colleagues 2009). The ability of a person with a chronic condition, such as hypertension and diabetes, to follow self-care management process is the key to prevent CKD (Abdalahim, 2014). CKD can be prevented by influencing patients' knowledge and attitudes towards early detection of the disease. Ajzen developed the theory of planned behavior (TPB) to propose how the intention to act guides human behavior (Ajzen 2002). Darawad & Khalil in 2013 have mention that hopefully, this knowledge will help patients in choosing and implementing behaviors that lead to desirable outcomes (Abdalahim, 2014). Attitude are whether positive or negative feeling about practicing the behavior.

Chronic kidney disease (CKD) is a major public health problem worldwide. The social and economic implications of CKD are substantial not only due to morbidity and mortality associated with the progression to kidney failure, but also because of its association with accelerated cardiovascular disease (CVD) (S. Yaqub, 2013 ).

If a patient is severely affected by a disease condition then his or her knowledge regarding the condition also will increase. Patients with mild/moderate disease often expressed a desire to learn more about their CKD, especially if they were not fully aware of their diagnosis (Fiona Oglesby, 2012).

The worldwide rise in the prevalence of CKD demands changes in the global approach towards the insistent prevention of CKD, mainly by detecting the risk factors (El Nahas & MMedSci 2005). Hypertension and diabetes mellitus are the leading important risk factors for CKD in developing countries. Many studies have confirmed this association due to the fact, that these two diseases share risk factors such as smoking and obesity, and promote vascular alterations that increase the risk for developing kidney impairment (Abdalrahim, 2014). Early detection of CKD along with an adequate management of patients is the best strategy to fight this disease (Seck, 2014).

A study conducted to study the attitude and behavior of the African American regarding CKD have revealed that only 2.8% people have reported that CKD is top health concern. This study have concluded that African Americans do not believed that CKD is an important health Problem to be addressed. (DWaterman, 2008).

A similar study was conducted in Iran to study the limited knowledge and its risk factors among the Iranian community have concluded that the Iranian people have lack of knowledge regarding the CKD and its risk factors. Majority of the participants in this study have believed the pain flank and Change in urination is early symptoms of CKD. Only

10.4% people knew that the CKD is silent diseases which means CKD can be Asymptomatic (Roomizadeh, 2014) .

## **CHAPTER 3**

### **3.0 MATHODOLOGY**

#### **3.1 Research Design**

To conduct this study quantitative approach was used. Quantitative research is a formal, objective, systematic process in which numerical data are used to obtain information about the world, this research method is used to describe variables, examine relationships among variables and determine cause-and-effect interactions between variables (Grove, 2005). Reasons why Quantitative method was chosen for this study is because, the data collected for this study was measurable numerical data, so compare to qualitative method the quantitative method was more suitable for generalizing statistical findings of this research. The quantitative research can generalize a research finding when it has been replicated on many different populations and subpopulations (Burke jhonson, 2013). On the other hand, the quantitative method was more reliable to cove the objective of this research.

Descriptive Cross-sectional survey was conducted to obtain data for this research. The Cross-sectional surveys are useful in assessing practices, attitudes, knowledge and beliefs of a population in relation to a particular health related event (Silva, 2015). A KAP survey was conducted regarding CKD.

Cross-sectional surveys are studies aimed at determining the frequency or (level) of a particular attribute, such as a specific exposure, disease or and other health-related event, in a defined population at a particular point in time. (Silva, 2015). Aim of this study was to find out people knowledge, attitude and practices regarding health related event, so according to aim of cross-sectional survey this is the best design to conduct this study. Cross-sectional studies provide a 'snapshot' of the outcome and the characteristics associated with it, at a specific point in time (Levin, 2014). Therefore, by the help of cross-sectional design it was easy to reach the objectives of the study in a relatively short period.

### **3.2 Population and sampling**

This study was conducted at the IGMH nephrology department. This is the study setting from which the maximum number of nephrology patients can be find out in the Maldives. The target population of this study was the patients who are consulting the Nephrology department of the IGMH. The estimated total population consult the nephrology department during the research period was around 500. This includes the patients consulting to the dialysis clinic also.

Convenience sampling method was used to collect data for this research. Convenience sampling, as the name implies is a specific type of non-probability sampling method that relies on data collection from population members who are conveniently available to participate in study (Dudovskiy, 2011). The sample was collected from the nephrology department of the IGMH. Sample for this study was the patients who ware consulting to the nephrologists. The sample was collected using the convenience sampling technic. In

convenient sampling Data, collection can be facilitated in short duration of time and it is Cost effectiveness (Dudovskiy, 2011).

The sample size for this study was calculated by using the **Raosoft** sample size calculator. . According the calculator sample size for this study was 218 patients. This was generated by keeping the margin of error at 5% this is the percentage of error tolerated in this study. Confidence level is the amount of uncertainty which was tolerated in this study, which was kept at 95%. The total number of target population is 500 Response distribution level was 50%. However, because of the limited time the sample size was decreased to 102.

### **3.3 Instrumentation**

Self-administered questionnaire was used to collect data. A self-administered questionnaire (SAQ) refers to a questionnaire that has been designed specifically to be completed by a respondent without intervention of the researchers (e.g. an interviewer) collecting the data (Wolf, 2008). The questionnaire contains four sections, they are section A, B, C, and D. Section A was framed to collect the demographic information like Age, Sex...etc. Sections B was having some knowledge related question regarding CKD. Section C is focused to attitude related question in order to find out the people attitude regarding CKD. Question on section D was focus to find out patients practices regarding CKD. All questions in this questionnaire were mainly close-ended questions. The questionnaire was translated to the local language, because patients who are involved in this research ware all Maldivians so it will be easy for the participant to fill the question which is attached in Appendix.

### **3.4 Pre-testing**

To increase the validity and reliability the questionnaire was pre-tested by conveniently selecting 7 sample from the study setting. Expert opinion was taken before the research instrument is been use to collect data for the research

### **3.5 Validity and reliability**

The questionnaire was be pre-tested in order to increase the validity and reliability. All the objectives of this research is been coved through the questionnaire. Expert opinion was taken before the research instrument is been use to collect data for the research

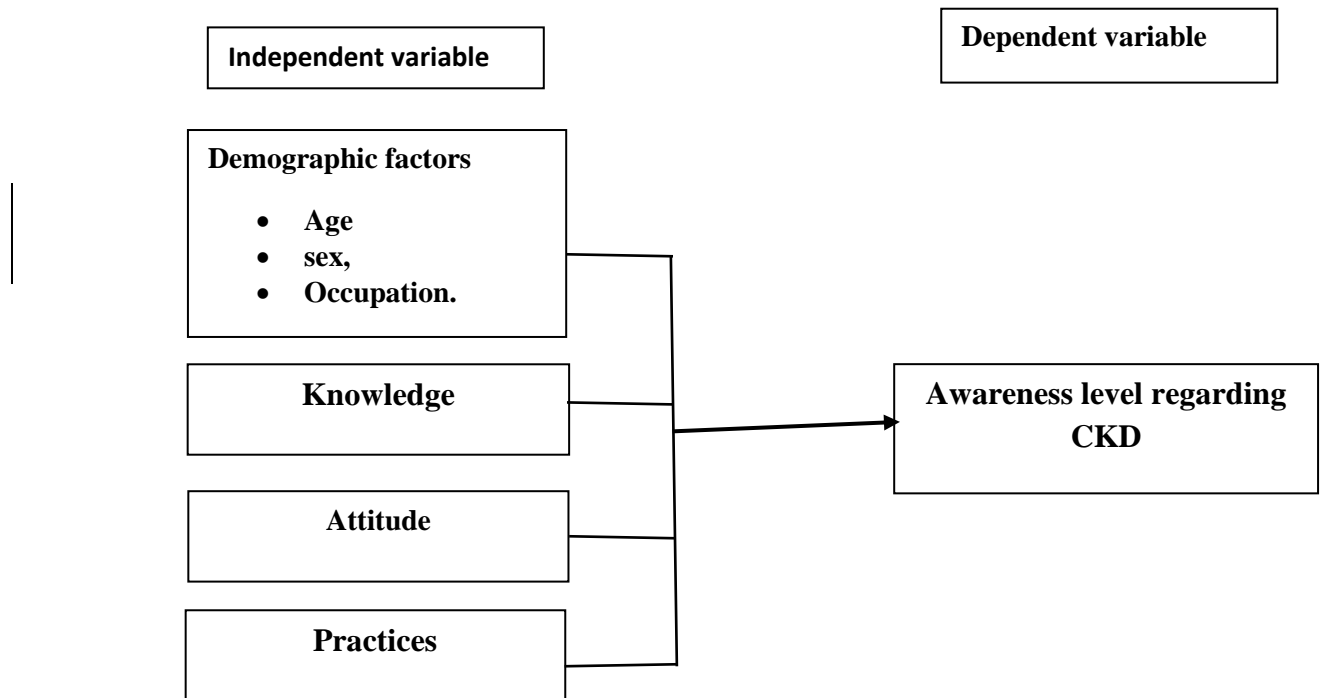
### **3.5 Frame work of data analysis**

The data was analyzed using Statistical Package for the Social Science (SPSS) version 20.0 and Microsoft excel 2013. The descriptive statistics like mean, mode, median and frequency and other related calculation ware carried out. The data was presented in the form of graphs, pie charts and tables.

### **3.6 Ethical consideration**

Before starting the survey process, purpose of the study was clearly explain to the participants and written consent was provided and signed by them. The full privacy and confidentiality was provided to the participants, their personal value was fully respected. They were given the right to terminate the survey at any point.

### 3.7 Conceptual Framework



## CHAPTER 4

### 4.0 DATA ANALYSIS AND RESULT

**Table 4.1 Frequency and percentage of patients by socio-demographic characteristics**

<b>Characteristics</b>	<b>Frequency n = 102</b>	<b>Percent</b>
<b>Age</b>		
Youths (18-24 years)	24	23.5
Adults (25-64 years)	70	68.6
Seniors (65 years)	8	7.8
Mean = 38.93 years    Median= 37 years    Min = 18 years    Max = 70 years		
<b>Gender</b>		
Male	47	46.1
Female	55	53.9
<b>Educational Level (n=102)</b>		
Primary education	36	35.3
Secondary education	24	23.5
Higher secondary education	14	13.7
College/ University	28	27.5
<b>Occupational status (n=102)</b>		
Student	15	14.7

Privet sector	28	27.5
Public sector	23	22.5
Self employed	3	2.9
Unemployed	33	32.4

The first set of questions aim to assess the socio demographic characteristics of the patients. The result indicated in table 4.1 the frequency and percentage of socio-demographic characteristics among 102 subjects the majorities of the patients was adults which means the age between 24 and 64 was 68.6% of total sample, the youth population was 24 which is 23.5%, people who was 65 and above who was involved this study was 7.8%. The highest age was 70 years and the leas age was 18 years on the other hand the, mean age was 38.93 years and mode age is 37 years

It can be seen from the data in table 4.1 that the total number of male was 46.1% and the total number of female was 53.9%.

There was no one involved in the study was illiterate. The participants in this study all of them having completed some kind of education 35.3% have basic primary education, the percentage of patients who have completed secondary education was 23.5% and 13.7% participates have completed higher secondary education. The 33 people from the sample population is unemployed which contribute to 32.4%. There are 27.5% patients work in privet sector. People who are working in public sector was 23 (22.5%).

**Table 4.2: Frequency and percentage of the participants knowledge regarding CKD**

<b>Statements</b>	<b>Frequency n = 102</b>	<b>Percent</b>
<b>What dose chronic kidney disease mean?</b>		
A disease where kidney slowly stop functioning	56	54.9
A disease which cost person to urinate too much	35	34.3
A disease condition which effects the function of the heart	2	2.0
<b>Is the dialysis is the only treatment available for Chronic Kidney disease?</b>		
Yes	56	54.9
No	46	45.1
<b>What is the Primary function of the Kidney?</b>		
To break down blood cells	24	23.5
To filter the unwanted substance in the blood	59	57.8
To store glucose	6	5.9
Don't know	13	12.7

The knowledge of the patients was assessed by asking questions regarding the (causes, symptoms, investigations, treatments) of CKD. The first knowledge question asses was, t what does CKD means 54.9 % of patients have mention that it is a disease which slowly

stop the function of kidney and 34.3% of patients said that CKD is disease which let the effected person to urinate too much. The percentage of people who mentioned that CKD is a diseases which effect the function of the heart is 2%. There are 8% of patients from the total population which does not have any idea regarding what does CKD means. As mention in the above table 4.2, 54.9 % of patients have said that dialyses is the only treatment which is available for CKD, however 45.1% of patients have said that dialysis not the only treatment for CKD. A higher percentage of patients have said that the primary function of the kidney is to filter unwanted substances from the blood which is 57.8% from the total sample population. 23.5% people have mention that the primary function of the kidney is to break down the blood cells. On the other hand, 5.9% mention that the primary function of the kidney is to store glucose in the body and also 12.7% patients don not have any knowledge regarding the function of the kidney.

**Table 4.3: The frequency and percentage of patient’s knowledge regarding the causes and symptoms of CKD**

<b>Statements</b>	<b>Frequency n = 102</b>	<b>Percent</b>	<b>Percent of cases</b>
<b>Common causes of CKD</b>			
Diabetes( Type 1 & 2)	61	39.9	59.8
Gastritis	10	6.5	9.8
Heart attack	14	9.2	13.7
High blood pressure	68	44.4	66.7
<b>Common symptoms related to CKD</b>			
Change in urination	67	20.6	66.3

Swelling in the legs, ankles, feet, face and hands	57	17.5	56.4
Fatigue	62	19.0	61.4
Nausea and vomiting	47	14.4	46.5
Metallic taste in mouth/ ammonia breath	38	11.7	37.6
Feeling cold	40	12.3	39.6
Pain in arm	14	4.3	13.9
Diarrhea	1	3	1

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As illustrated in above table 4.3 among the 102 patients the highest percentage of people have mentioned that high blood pressure is the most common cause CKD which is 44.4% , however the case percentage of this 66.7%. Second highest common cause according to the sample was diabetic mellitus (type 1 and 2) which is 39.9%, the total percentage of people who have responded to this answer is 59.8%.

According to the above table 4.3 the most of people from the sample have mentioned that change in urination and fatigue is the most common symptoms of the CKD. 20% of patients have identified that changing urination is a one of common symptom of CKD. The total percentage of people who have marked changing urination is a common symptom was 66.3%. Second highest marked symptom was fatigue which is 19% of total population however the cases was 61.4%.

**Table 4.4: Likert scale of patients attitudes towards CKD**

<b>Statement</b> <b>n = 102</b>	<b>5</b> <b>%</b>	<b>4</b> <b>%</b>	<b>3</b> <b>%</b>	<b>2</b> <b>%</b>	<b>1</b> <b>%</b>	<b>Mean</b>	<b>SD</b>
I will be shocked if I get kidney disease	0.0	1.0	23.5	38.2	38.2	1.87	.829
I will talk to my friends about kidney disease	0.0	1.0	15.7	49.0	34.3	1.83	.719
I will go to a healthcare provider if I have signs and symptoms of kidney disease	0.0	0.0	4.9	61.8	33.3	1.72	.552
Kidney disease is expensive to diagnose and treat	0.0	0.0	5.9	50	44.1	1.62	.598
Maintaining good health is extremely important	0.0	0.0	3.9	55.9	40.2	1.64	.559
I should search for more information to improve the health status of me	0.0	0.0	3.9	57.8	38.2	1.66	.554
I feel it is important to carry out activities which will improve my health.	0.0	0.0	2.0	62.7	35.3	1.67	.514
Having a routine check-up makes me less worried about my health	0.0	3.9	6.9	49.0	40.2	1.75	.754

I want to discover my health problems in the early stages	0.0	0.0	2	52.9	45.1	1.57	.536
I feel I will get CKD in the future.	0.0	2.9	35.3	27.5	34.3	2.07	.904
Doctors and nurses should have given me more information about kidney disease	0.0	2.9	8.8	59.8	28.4	1.86	.690
Preventing kidney disease needs money and efforts	0.0	2.0	9.8	56.9	31.4	1.82	.681

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Score: 5 = Strongly Disagree, 4 = Disagree, 3 = Neutral, 2 = Strongly Agree, 1 = Agree

According to the above data on Table 4.4 a higher percentage of patients believe that they will get a shock if they came to know that they have CKD the total percentage of people who agree and strongly agreed for this statement was equal which was 38.2%. Among all patients 49% of patients strongly agree that they will talk to their friends about CKD, 61.8% patients believe that they will go to a healthcare provider if they found any kind of signs and symptoms of CKD. From the total sample population 50% of participants have said that they strongly agree that CKD is a disease which is expensive to diagnose and treat along with it 55.9% believed that maintaining a good health is extremely important, on the other hand 55.9% patients have mentioned that they should search for more information in order to maintain good health. 62.7% of people strongly agree that they should carry out more activities which will improve their health status. 49% of people had strong belief

that having a routinely health checkups make them less worried about the health, 52.9% of people had mention that they strongly agree that they want discover their health problems at early stage .The most of the people from the sample population have said that they are unsure that they will get CKD in future (35.3%), although the unsure percentage is highest compare to the agree there was a only 1% difference between this two. The 59.8% people strongly agreed that doctors and nurses should give more information regarding the kidney disease. . From the total sample population 56.9% people strongly Agree that the prevention from kidney disease need money and effort

**Table 4.5: Patients practices regarding CKD**

<b>Statement</b> <b>n = 102</b>	<b>4</b> <b>%</b>	<b>3</b> <b>%</b>	<b>2</b> <b>%</b>	<b>1</b> <b>%</b>	<b>Mean</b>	<b>SD</b>
I eat well-balanced meals	2.0	21.6	69.6	6.9	2.19	.576
I exercise regularly, such as walking and jogging	2.0	4.9	65.7	27.5	1.81	.609
I have regular check-ups even when I'm not sick	1.0	7.8	46.1	45.1	1.65	.670
I keep my weight within normal range	9.8	15.7	51.0	23.5	2.12	.882
I do not smoke	12.7	6.9	22.5	57.8	1.75	1.050
I take only the medication with prescription	23.5	37.3	33.3	5.9	2.78	.875

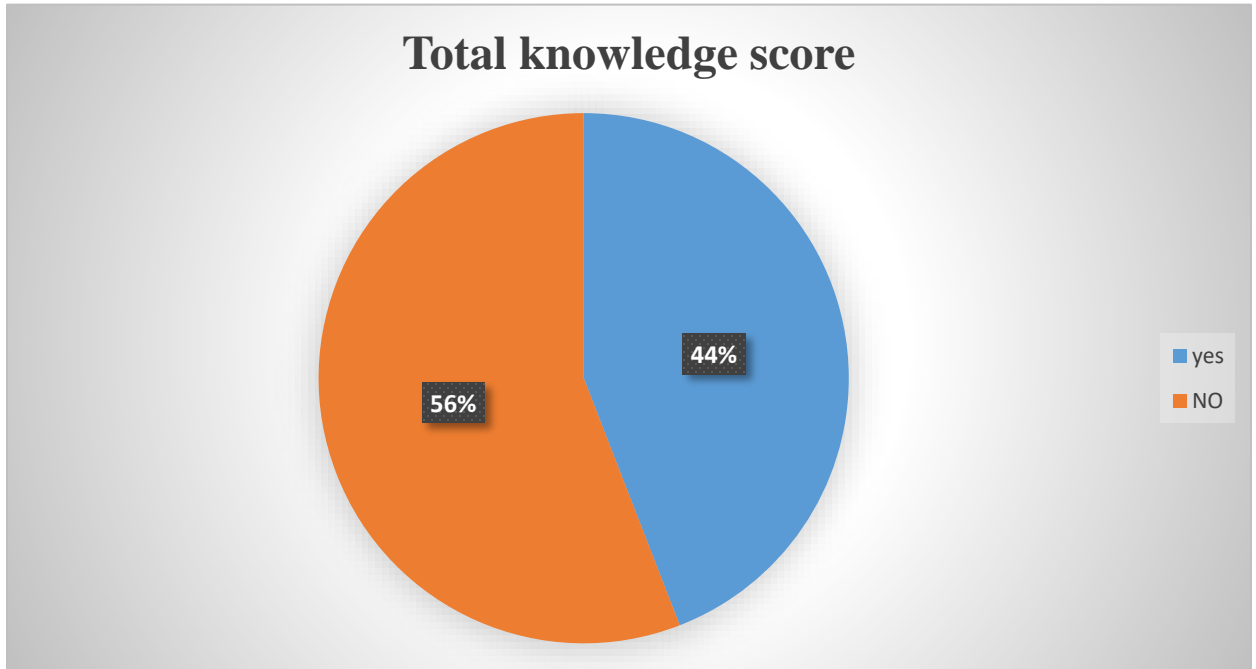
I will seek medical help when sing of CKD	38.2	22.5	34.3	4.9	2.94	.963
I follow my food restrictions, such as low salt diet and diabetic diet	29.4	22.5	35.3	12.7	2.69	1.034
I get family help and support if I get CKD.	59.8	27.5	9.8	2.9	3.44	.791

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Score: 4= Always 3= Most of the times 2= Sometimes 1= Not at all

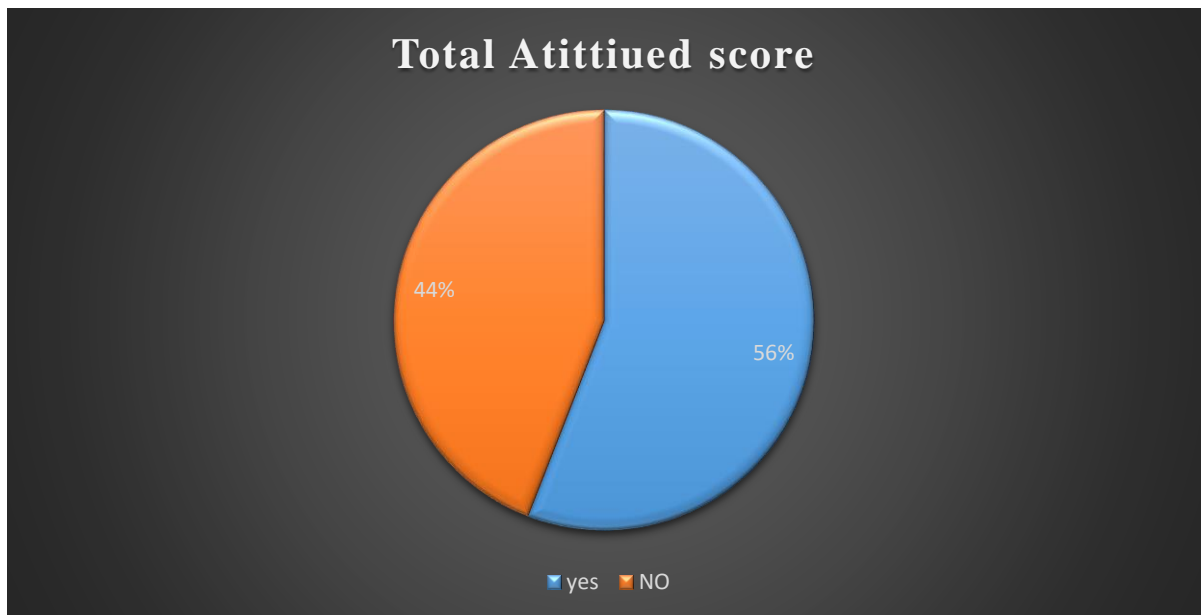
As mention in the above table 4.5 from the total population of 102 higher percentage of (69.6% ) people eat balance diet sometimes. The patient’s practices regarding the excises have given that 65.7% people excises sometimes, only 2% of people excises regularly. 46.1% people do health checkup sometimes even when they are not sick 45.1% of people have mentioned they have never done health checkup if they are not sick. From the total sample 51% have said that only sometimes they were able to keep the body weight at normal rage. 57.8% have said that they have never smoked. The percentage of people who have said that most of the time they take medication with the instruction from a health care provider are 37.3% on the other hand 33.3% patient have mention that sometimes the medication they take are prescribe by a healthcare provider. According to the table above 38.2% people have said they will always seek medical help if they found any signs CKD. The practices regarding the food restriction have shown that 35.3% of people sometimes take food that are restricted to them and also 29.4% people always eat that foods which are restricted for them to take. Among the total of 102 people 59.8% patients have said they will get support from their family and friends if they are diagnosed for CKD.

**Figure 4.6: The Total knowledge score**



The above pie chart shows the total knowledge score of the 102 patients. Yes indicates the total percentage of patients who have good information regarding chronic kidney disease which is 44% of total population. The NO percentage indicates the total percentage of people who do not have information or knowledge regarding chronic kidney disease which is 56% of the total sample population.

**Figure 4.7: The total attitude score**



The figure 4.7 illustrate the total attitude score of the patient it clearly shows that 56% of patients have a positive personal attitude towards the CKD which is the number of yes percentage. However it also indicates that 44% have negative personal perspective towards chronic kidney disease

**Figure 4.7 Total practices score**



The above pie chart give snap shot of the practices of the 102 related to CKD. The 52% of the patient have good health practices, however the practices of the patients which is not healthy is 48% of the total population

## **CHAPTER 5**

### **5.0 DISCUSSION AND CONCLUSION**

#### **5.1 Summary**

This was a descriptive Cross-sectional survey conducted to study the patient knowledge, attitude and practices regarding CKD. Study was conducted in the nephrology department of IGMH. The data was collected from 102 patients who visited to the department for consultation. A pretested, self-administered questionnaire was used which have question to assess the patients knowledge attitude and practices. The overall result have indicated that 56 % of participant is lack of knowledge regarding the CKD, 56 have a positive attitude regarding the health believes related to CKD and the 52% patient have health practices .

#### **5.2 Discussion**

In this study the youngest age recoded was the 18 years and the oldest age of the participants was 70 years, with in the mean age of 38.93 years and the most frequent age was 23 years old. Among the 102 patients the highest percentage contributed by the adult population age between 25 and 64 years which was 70 patient (68.6%) of the total sample. This means that as age increases the risk of patients getting the CKD also increases this is because the most common CKD causing factors like diabetes and hypertension are most common in this age group.

The prevalence rate of CKD increases as age increases because older age group are most frequently diagnosed for the chronic medical condition such as hypertension, Diabetic and other cardiovascular disease as CKD is disease which is usually caused by the uncontrolled diabetes and hypertension (Alan S. Go, 2004).

The other factor in the result have indicated that the total population which was involve in the study have not enough knowledge regarding the CKD. The question used to assess the knowledge was about the symptoms, function of the kidney and other general question regarding the chronic kidney disease. The total percentage of population which do not have enough information regarding the CKD was 56%. Which indicates that the more than the half of the population from the 102 patient is lack of general knowledge regarding CKD. Knowledge is important because if the general population having knowledge regarding the topic they can take preventive measures or there will be higher chance that they disease can be diagnosed at early stage. So the worst case scenario can be prevented. A study conducted in Adu Dabi to assess the patient knowledge have indicated that the population which was involved in the study do not have correct knowledge regarding the CKD so they have concluded that they should take more effort on public health to increase the health education regarding the CKD. So that the patient have correct information regarding the risk factors of CKD to increase the preventive care (White, 2008).

Attitude is the way in which somebody apply what they believe in their life. Result of the study have indicated that higher percentage of people believed that they will be in shock if they come to know that they have CKD the total percentage of people agreed and strongly agreed that they will be in shock was 76.4%. This is because they believe that CKD is very ruthless condition which will threat all other aspects of life. The 57.8% people have

believed that they should search for more information regarding the health this is a positive sign that they believe that the information they have is not sufficient to keep them health. So they will try to learn more about CKD and other health related issues. The total of the attitude score was indicated that among the 102 patients they had a very positive perspectives towards the health beliefs. 56% participants had a very positive attitudes towards the health believes regarding CKD. Which indicates that people believes had a role to play regarding the health status of individual. A similar study conducted in Tanzania have shown that nearly all participants are interested in learning about the kidney disease, more than the quarter of patients are concerned about their on kidney problems, three fourth are worried about cost of kidney disease treatment irrespective to their occupation the study was conducted by using a valid instrument which contain 25 items which was used to assess the knowledge ,attitude and practices of the patients, a 606 participants was involved in this study (stafnifar, 2016).

The study have identified that the most of the people in the sample use well balanced diet sometimes 68.9% of the total population. Which indicates that participants were not aware about the use of well balance diet in their day today life. Use of well balance diet is important, because to keep your body healthy so that you will be protected from the disease conditions which can threat your life. Balance diet is important because our body organs needs nutrition to perform the functions efficiently without this nutrition our body is more prone to disease on the other hand the unbalance diet can lead to obesity and overweight which will increases the person risk of getting chronic illnesses (Natalie Butler, 2016). According this study the percentage of people who exercise regularly always are only 2% which means that the only this much percentage of people exercises on regular base, 4.9%

exercises most of the times and participants exercises sometimes was (65.7%), However, there are more than quarter of patients which do not perform any excises. Exercising is impotent to improve the body functions and to keep your body in ideal weight. The study carried out find out the importance of excises in CKD patient have reveler that it help the patients to improve the quality of health related life which shows a physiological benefits such decreases in anxiety, depression and stress (Danielle L. Kirkman, 2014).

Smoking is a risk factor which can cause chronic disease like hypertension and cardiovascular disease. Which is two main cause of CKD, according to the result 42.2% are smokers or ex-smokers this percentage is high percentage for this small sample. Nevertheless, this can be a wrong sign that CKD can be increased in the community. Smoking can have bitter impact on the general health of the person so the smoking can increase the risk of having CKD. A study conducted to find out the association between smoking and chronic kidney disease have revealed that smoking increases the risk of having overall CKD also which other classification of CKD like hypotensive nephropathy and diabetic nephropathy (yacoub, 2010).

The overall practices result indicates 52 % people have healthy practices regarding the CKD this indicates that almost the half of the population having unhealthy practices which can increases the prevalence rate of CKD in the community. So for this we need to educate the community regarding the proper health behavior

### **5.3 Conclusion**

The result of this study indicated that people do not have enough knowledge regarding the CKD. The overall knowledge score shows that 56 % of population is lack of knowledge

which is the half of the sample population. However, the sample population attitude was very positive regarding CKD and the almost half which is (48%) of people health practices related to CKD is very poor. So the policy makers or the public health related people need to increase the health education program to increase the awareness level of the general public regarding the general knowledge of CKD and also intervention program can implemented to decrease the unhealthy behavior among the population.

#### **5.4 limitation**

The biggest limitation faced was the time. Due to limited time and resources the sample size was constructed to its minimum value. From, which a valid result can be obtained. Sample was only collected from the IGMH so result obtained may not be representative of whole Maldivian community.

## **CHAPTER 6**

### **6.0 RECOMMENDATION**

#### **6.1 Recommendation for implementation**

As result of this study have indicated the sample population is lack of general knowledge regarding CKD. An intervention program can be implemented to provide information to the general public regarding CKD which includes TV programs for different Age groups. Power point presentation sessions and workshops also can be conducted across the country. Leaflets can also be a tool to provide information. On the other hand social media campaign also can be implemented to increase the awareness level.

#### **6.2 Recommendation for policy makers**

Policy makers make policy to make a change in the community. This can be implemented by the government to increases the overall health status of the community. Policy can be made to strengthen the public policy regarding the preventive care. Policy to implement a proper health checkup mechanism in the community.

#### **6.3 Recommendation for further research**

Since, today in Maldives there was no research conducted to find out the CKD knowledge of the all Maldivian community regarding CKD this can be further illustrated by the researchers. The practices of the community related to the CKD can be separately studied. Relationship between the CKD and diet can be further studied in the Maldivian context.

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APPENDIX A

Consent form in Dhivehi

ހަލާސަތު (އަލްލާހު ޖަބްރު) ގައި ފަލްޖަ ހަދާ ފަދަ ސަލާސަތުގައި ބައިވެރިވާ ފަރާތްތަކުގެ  
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ސަލާސަތު

އަލްލާހު ޖަބްރު

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ހަލާސަތު ..... ޖަހަވާ ބަލާ ފަރާތްތަކުގެ ފަރާތުން ފަދަ ފަރާތްތަކުގެ  
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שְׂדֵה מַשְׁכָּנֶיךָ (דְּבָרִים י"ג)

1) בְּרִי דְלִמְדָּתְךָ לֹא תִּשְׁמַע בְּכִלְשֵׁי הַיָּם וְלֹא תִּשְׁמַע בְּכִלְשֵׁי הַיָּם

(א) וְלֹא תִּשְׁמַע בְּכִלְשֵׁי הַיָּם וְלֹא תִּשְׁמַע בְּכִלְשֵׁי הַיָּם

(ב) וְלֹא תִּשְׁמַע בְּכִלְשֵׁי הַיָּם וְלֹא תִּשְׁמַע בְּכִלְשֵׁי הַיָּם

(ג) וְלֹא תִּשְׁמַע בְּכִלְשֵׁי הַיָּם וְלֹא תִּשְׁמַע בְּכִלְשֵׁי הַיָּם

(ד) וְלֹא תִּשְׁמַע בְּכִלְשֵׁי הַיָּם וְלֹא תִּשְׁמַע בְּכִלְשֵׁי הַיָּם

2) אֲלֵךְ בְּדֵרֶכְיָהּ בְּרִי דְלִמְדָּתְךָ לֹא תִּשְׁמַע בְּכִלְשֵׁי הַיָּם וְלֹא תִּשְׁמַע בְּכִלְשֵׁי הַיָּם?

(א) אֲלֵךְ בְּדֵרֶכְיָהּ

(ב) אֲלֵךְ בְּדֵרֶכְיָהּ

3) בְּרִי דְלִמְדָּתְךָ לֹא תִּשְׁמַע בְּכִלְשֵׁי הַיָּם וְלֹא תִּשְׁמַע בְּכִלְשֵׁי הַיָּם

(א) וְלֹא תִּשְׁמַע בְּכִלְשֵׁי הַיָּם וְלֹא תִּשְׁמַע בְּכִלְשֵׁי הַיָּם

(ב) וְלֹא תִּשְׁמַע בְּכִלְשֵׁי הַיָּם וְלֹא תִּשְׁמַע בְּכִלְשֵׁי הַיָּם

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4) בְּרִי דְלִמְדָּתְךָ לֹא תִּשְׁמַע בְּכִלְשֵׁי הַיָּם וְלֹא תִּשְׁמַע בְּכִלְשֵׁי הַיָּם (אֲלֵךְ בְּדֵרֶכְיָהּ)

וְלֹא תִּשְׁמַע בְּכִלְשֵׁי הַיָּם וְלֹא תִּשְׁמַע בְּכִלְשֵׁי הַיָּם (אֲלֵךְ בְּדֵרֶכְיָהּ)

(א) וְלֹא תִּשְׁמַע בְּכִלְשֵׁי הַיָּם וְלֹא תִּשְׁמַע בְּכִלְשֵׁי הַיָּם (אֲלֵךְ בְּדֵרֶכְיָהּ 1 אֲלֵךְ בְּדֵרֶכְיָהּ 2)

(ב) וְלֹא תִּשְׁמַע בְּכִלְשֵׁי הַיָּם וְלֹא תִּשְׁמַע בְּכִלְשֵׁי הַיָּם

(ג) וְלֹא תִּשְׁמַע בְּכִלְשֵׁי הַיָּם וְלֹא תִּשְׁמַע בְּכִלְשֵׁי הַיָּם

(ד) וְלֹא תִּשְׁמַע בְּכִלְשֵׁי הַיָּם וְלֹא תִּשְׁמַע בְּכִלְשֵׁי הַיָּם

5) פּוֹרְטָרַי וְשֹׁמֵר אֲרָזָיו וְשֹׁמֵר אֲרָזֵי הַיַּם הַגָּדוֹל וְשֹׁמֵר אֲרָזֵי הַיַּם הַקָּטָן וְשֹׁמֵר אֲרָזֵי הַיַּם הַקָּטָן (אֲרָזֵי הַיַּם הַקָּטָן וְשֹׁמֵר אֲרָזֵי הַיַּם הַקָּטָן)

א) נֶאֱמַר וְשֹׁמֵר אֲרָזֵי הַיַּם הַקָּטָן

ב) וְשֹׁמֵר אֲרָזֵי הַיַּם הַקָּטָן וְשֹׁמֵר אֲרָזֵי הַיַּם הַקָּטָן

ג) וְשֹׁמֵר אֲרָזֵי הַיַּם הַקָּטָן

ד) וְשֹׁמֵר אֲרָזֵי הַיַּם הַקָּטָן

ה) וְשֹׁמֵר אֲרָזֵי הַיַּם הַקָּטָן וְשֹׁמֵר אֲרָזֵי הַיַּם הַקָּטָן

ו) וְשֹׁמֵר אֲרָזֵי הַיַּם הַקָּטָן

ז) וְשֹׁמֵר אֲרָזֵי הַיַּם הַקָּטָן

ח) וְשֹׁמֵר אֲרָזֵי הַיַּם הַקָּטָן

שְׁנוֹנֵי שְׁמוֹת סוּר ( תַּרְסֵי )

אָלוֹס וְעָלָס יְשׁוֹנֵי שְׁמוֹת	יְשׁוֹנֵי שְׁמוֹת	סוּר	וְעָלָס יְשׁוֹנֵי שְׁמוֹת	יְשׁוֹנֵי שְׁמוֹת	#
					1) אָלָס וְעָלָס יְשׁוֹנֵי שְׁמוֹת אָלוֹס וְעָלָס יְשׁוֹנֵי שְׁמוֹת
					2) אָלָס וְעָלָס יְשׁוֹנֵי שְׁמוֹת אָלוֹס וְעָלָס יְשׁוֹנֵי שְׁמוֹת
					3) אָלָס וְעָלָס יְשׁוֹנֵי שְׁמוֹת אָלוֹס וְעָלָס יְשׁוֹנֵי שְׁמוֹת יְשׁוֹנֵי שְׁמוֹת אָלוֹס וְעָלָס יְשׁוֹנֵי שְׁמוֹת
					4) אָלָס וְעָלָס יְשׁוֹנֵי שְׁמוֹת אָלוֹס וְעָלָס יְשׁוֹנֵי שְׁמוֹת יְשׁוֹנֵי שְׁמוֹת אָלוֹס וְעָלָס יְשׁוֹנֵי שְׁמוֹת
					5) אָלָס וְעָלָס יְשׁוֹנֵי שְׁמוֹת אָלוֹס וְעָלָס יְשׁוֹנֵי שְׁמוֹת
					6) אָלָס וְעָלָס יְשׁוֹנֵי שְׁמוֹת אָלוֹס וְעָלָס יְשׁוֹנֵי שְׁמוֹת יְשׁוֹנֵי שְׁמוֹת אָלוֹס וְעָלָס יְשׁוֹנֵי שְׁמוֹת
					7) אָלָס וְעָלָס יְשׁוֹנֵי שְׁמוֹת אָלוֹס וְעָלָס יְשׁוֹנֵי שְׁמוֹת יְשׁוֹנֵי שְׁמוֹת אָלוֹס וְעָלָס יְשׁוֹנֵי שְׁמוֹת





**APPENDIX C**

**The Maldives national university**

**Faculty of health science**

**Knowledge, attitude and practice regarding chronic kidney disease  
among patients consulting to Nephrology department of IGMG**

**Questionnaire**

**SECTION A (Socio-Demographic information)**

1) Age.....

2) Sex: Male  Female

**3) Educational status**

Primary education

Secondary education

Higher secondary education

College/ University

Illiterate

**4) Occupational status**

Student

Privet sector

Public sector

Self employed

Unemployed

## SECTION B (KNOWLEDGE)

- 1) What does chronic kidney disease mean
  - a) A disease where kidney slowly stop functioning
  - b) A disease which cost person to urinate too much
  - c) A disease condition which effects the function of the heart
  - d) Don't know
  
- 2) Is dialysis the only treatment available for Chronic Kidney disease?
  - a) True
  - b) False
  
- 3) What is the Primary function of the Kidney? ( select one answer)
  - a) To break down blood cells
  - b) To filter the unwanted substance in the blood
  - c) To store glucose
  - d) Don't know
  
- 4) What are the most common causes of Chronic Kidney Disease?
  - a) Diabetes (types 1 and 2)
  - b) Gastritis
  - c) Heart attach
  - d) high blood pressure
  
- 5) Below are list of symptoms, tick common symptoms related to CKD
  - a) Changes in urination
  - b) Swelling in the legs, ankles, feet, face, and/or hands
  - c) Fatigue
  - d) Nausea and vomiting
  - e) Metallic taste in mouth/ammonia breath
  - f) Feeling cold
  - g) Arm pain
  - h) Diarrh

SECTION C (ATTITUDE )

	Strongly Disagree	Disagree	Unsure	agree	Strongly Agree
1- I will be shocked if I get kidney disease					
2- I will talk to my friends about kidney disease					
3- I will go to a healthcare provider if I have signs and symptoms of kidney disease					
4- Kidney disease is an expensive to diagnose and treat					
5- Maintaining good health is extremely important.					
6- I should search for more information to improve the health status of me					
7- I feel it is important to carry out activities which will improve my health.					
8- Having a routine check-up makes me less worried about my health					
9 - I want to discover my health problems in the early stages.					
10- I feel I will get CKD in the future.					
11- Doctors and nurses should have given me more information about kidney disease.					
12- Preventing kidney disease needs money and efforts.					

## SECTION D (PRACTICES)

	<b>Not at all</b>	<b>Sometimes</b>	<b>Most of the times</b>	<b>Always</b>
1) I eat well-balanced meals.				
2) I exercise regularly, such as walking and jogging				
3) I have regular check-ups even when I'm not sick.				
4) I keep my weight within normal range				
5) I do not smoke				
6) I take only the medication with prescription.				
7) I will seek medical help when I find out I have CKD				
8) I follow my food restrictions, such as low salt diet and diabetic diet				
9) I get family help and support if I get CKD.				





