

**Knowledge, Attitude and Practices of Chronic Kidney Disease  
among hypertensive patients living in Kashipur region, Udham  
Singh Nagar**

**MPH Integrated Experience Project**

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by

Gurpreet Kaur, MD(c), MPH(c)

Advising team:

Tsovinar Harutyunyan, MPH, PhD

Varduhi Hayrumyan, MS, MPH

Gerald and Patricia Turpanjian School of Public Health

American University of Armenia

Yerevan

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## **LIST OF ABBREVIATIONS**

CKD – Chronic Kidney Disease

DM – Diabetes Mellitus

GFR – Glomerular Filtration Rate

KAP – Knowledge, Attitude and Practice

NFHS – National Family Health Survey

NSAIDS – Non Steroidal Anti Inflammatory Drugs

RAAS – Renin Angiotensin Aldosterone System

UG- Undergraduate

WHO – World Health Organization

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## ABSTRACT

**Background:** Non-communicable diseases (NCDs) have been highlighted as the major causes for death and disability. WHO has prioritized four metabolic risk factors which contribute to the development of different NCDs; elevated blood pressure, overweight/obesity, hyperglycemia and hyperlipidemia. Hypertension and its complications have become major public health problems globally contributing to numerous cardiovascular and renal consequences such as ischemic heart disease, chronic kidney disease etc. Hypertension and chronic renal disease are risk factors for each other. Globally, the burden of hypertension is increasing and this is contributing to the rise in incidence of chronic kidney disease. CKD has become a global health burden as it imposes high cost on health and financial condition of an individual. Appropriate pharmacologic control of hypertension and different life style interventions can reduce the burden of chronic kidney disease attributable to hypertension. No studies have assessed knowledge, attitude and practice related to CKD among hypertensive patients in India.

**Aim:** The study explored the knowledge, attitude and practice (KAP) of hypertensive patients related to chronic kidney disease in Kashipur region of Udham Singh Nagar district of Uttarakhand.

**Methods:** A cross sectional survey design using self-administered questionnaires was used for this study. The study population included adult hypertensive patients attending outpatient departments of the public and the two largest private hospitals in Kashipur region. Convenience sampling was used to recruit participants for the study. The study instrument consisted of five main domains: 1) Knowledge of CKD, 2) Attitude related to CKD, 3) Practices related to CKD, 4) Socio-demographic factors and 5) Presence of risk factors related to chronic kidney disease. Descriptive analysis was done to report the socio demographic characteristics, while linear regression analysis explored association of different independent variables with the practice score.

**Results:** The mean age of the population was 50.85 years (SD 11.7). Males constituted the majority of the sample (61.8%). Around 85% of the study participants were married. The mean knowledge, attitude, practice and KAP percent scores were 50.6%, 65.5%, 47.64% and 51.70%, respectively. Socio economic status, educational status, employment status and type of hospital were significantly associated with the practice percent score in the adjusted analysis. Belonging to middle socio economic status as compared to low socio economic status was significantly associated with the practice score ( $\beta = -3.62$ ,  $p$  value = 0.025, CI: -6.788, -0.449). Having higher education as compared to primary education was negatively associated with the practice score (for secondary education,  $\beta = -4.67$ ,  $p$  value = 0.003, CI: -7.728, -1.619, for graduate and undergraduate education,  $\beta = -7.58$ ,  $p$  value = 0.000, CI: -11.744, -3.148). Type of hospital for hypertension care maintained significant association with the outcome in the final adjusted

model ( $\beta = 5.51$ , P value = 0.000, CI: 2.881, 8.131). Gender, place of residence and presence of comorbidities or other risk factors of CKD were not associated with the practice score.

**Conclusions:** This was the first kind of study conducted in Uttarakhand which aimed to assess knowledge, attitude and practice related to chronic kidney disease. The results showed that the KAP related to CKD was inadequate among the hypertensive patients in Kashipur region. The findings of this study can be used for formulating new intervention programs to prevent CKD among hypertensive patients.

## 1. INTRODUCTION

Non-communicable diseases (NCDs) have been highlighted as the major causes for mortality and morbidity in the global burden of diseases study 2016.<sup>1</sup> NCDs led to approximately 39.5 million deaths (70%) out of a total of 56.4 million global deaths in 2015.<sup>2</sup> Burden on health due to non-communicable disease has increased disproportionately in developing countries recently due to the socioeconomic and demographic transitions.<sup>3</sup> Three-fourth of all deaths due to NCDs in 2015 took place in developing countries.<sup>2</sup> WHO has prioritized four metabolic risk factors which contribute to development of different NCDs; elevated blood pressure, overweight/obesity, hyperglycemia and hyperlipidemia. Among these four metabolic risk factors, 19% of global deaths can be attributed to high blood pressure.<sup>4</sup> Hypertension and its complications have become major public health problems globally contributing to numerous cardiovascular and renal consequences such as ischemic heart disease, chronic kidney disease etc.<sup>5</sup>

Hypertension is the “silent killer” among all the cardiovascular diseases.<sup>6</sup> It remains undiagnosed for a long time; it is revealed accidentally on medical checkups or after complications develop due to it. According to WHO, hypertension, generally known as high blood pressure is defined as “a condition in which blood vessels have persistently raised pressure.”<sup>7</sup> The blood pressure cutoffs for diagnosing hypertension are “140mm/hg or more and 90mm/hg or more for systolic and diastolic blood pressures respectively”.<sup>8</sup> The number of people diagnosed with hypertension has risen from 600 million in 1980 to 1 billion in the year 2008.<sup>6</sup> Recent trends show that by the year 2025, over 1.5 billion people will suffer from hypertension.<sup>6</sup> About 9.4 billion deaths occur every year due to complications of hypertension.<sup>6</sup> Elevated blood pressure leads to 57 million disability adjusted life years (DALYS).<sup>9</sup> The major organs that suffer hypertensive damage are brain (stroke, transient ischemic attack), heart (left ventricular hypertrophy, heart failure, angina),



eyes (retinopathy) and kidneys(chronic kidney disease).<sup>10</sup> About 10% of health care spending can be attributed to raised blood pressure and complications due to hypertension.<sup>11</sup> Treatment of complications of hypertension with costly interventions like cardiac bypass surgery, dialysis etc puts huge economic burden on individuals in developing countries.<sup>9</sup> Globally, the incidence of diabetes and hypertension is increasing and this is contributing to the rise in incidence of chronic kidney disease.<sup>11</sup>

## **1.1 Chronic Kidney Disease**

Chronic kidney disease is defined as “kidney damage  $\geq$  3 months or glomerular filtration rate (GFR)  $< 60$  ml/min/1.73 m<sup>2</sup> for 3 months or more irrespective of cause.”<sup>12</sup> The main risk factors for developing chronic kidney disease are: diabetes mellitus, hypertension, old age(age>60 years), hyperlipidemia, family history of chronic kidney disease, smoking, kidney infections(glomerulonephritis), congenital kidney diseases(polycystic kidney disease), urinary tract stones, and chronic analgesia that is long term use of non-steroidal anti-inflammatory medicines(NSAIDS).<sup>13</sup> Diabetes mellitus and hypertension are the two major causes of chronic kidney disease.<sup>14</sup> The main complications associated with chronic kidney disease are: anemia, osteodystrophy(bone and mineral disorders), hyperlipidemia, nutrition disorders and increased cardiovascular risk.<sup>15</sup>

## **1.2 CKD and Hypertension: Pathophysiology**

Hypertension and chronic renal disease are strongly correlated with each other, they are risk factors for each other.<sup>16</sup> Hypertension has harmful effects on the vessels of kidneys.<sup>13</sup>

Uncontrolled blood pressure for a long term leads to thickening of intima of small and large blood vessels of the kidney. This response to uncontrolled blood pressure is hypertrophic (a

compensatory mechanism) in nature. At later stages, this leads to damage of the glomeruli which in turn leads to abnormal filtration of proteins into urine (proteinuria).<sup>17</sup> Hypertension leads to a decline in glomerular filtration rate in patients with kidney damage irrespective of having diabetes or not.<sup>18</sup> Studies have shown a strong association between systolic and diastolic blood pressure and end stage renal disease.<sup>18</sup> Conversely, chronic renal disease can lead to secondary hypertension, thus increasing the risk of adverse cardiovascular events.<sup>16</sup> The major pathophysiologic mechanisms that lead to hypertension development in chronic kidney disease patients are: extracellular volume expansion, increased release of endothelin-1 mediator, increased activity of the renin angiotensin aldosterone system (RAAS), and increased activity of the sympathetic nervous system.<sup>19</sup> Uncontrolled hypertension in CKD patients can lead to high morbidity and mortality due to adverse cardiovascular events.<sup>19</sup>

### **1.3 CKD: Global burden**

CKD has become a global health burden as it imposes high cost on health and financial condition of an individual.<sup>20</sup> Impaired kidney function is a risk factor for hospitalization,<sup>21</sup> cognitive dysfunction<sup>22</sup> and poor quality of life.<sup>23</sup> The global annual mortality rate due to chronic kidney disease is 15.8/100,000 people. The global annual years of healthy life lost due to chronic kidney disease is 496.6/100,000 people.<sup>24</sup> The global annual mortality rate of chronic kidney disease due to hypertension is 4.6/100,000 people.<sup>25</sup> According to the global burden of disease report released by World Health Organization, “annually chronic kidney disease leads to 850,000 deaths and 115,010,107 disability adjusted life years.”<sup>26</sup> Among all the causes of death and disability, chronic kidney disease ranks 12<sup>th</sup> and 17<sup>th</sup> on the respective lists globally.<sup>26</sup> Progression of kidney disease can lead to kidney failure or end stage renal disease (ESRD). The expense of treating ESRD is currently over \$32 billion each year.<sup>27</sup>

## 1.4 CKD Prevention and control

Appropriate pharmacologic control of hypertension and different life style interventions can reduce the burden of chronic kidney disease attributable to hypertension.<sup>28</sup> Non pharmacologic interventions like salt reduction in diet, reduction of obesity, regular physical exercise, reduction of alcohol intake etc would lead to decrease in blood pressure levels and chronic kidney disease incidence among hypertensive patients.<sup>16</sup> Awareness about risk factors and management practices related to chronic kidney disease is necessary among hypertensive patients to slow the progression of kidney disease among them.

## 1.5 CKD awareness

Studies done in different countries indicate there is scarcity of knowledge related to chronic kidney disease among the general public.<sup>12</sup> In some national level studies, low awareness of public regarding hypertension as a risk factor for CKD has been documented.<sup>29,30,31</sup> The awareness of kidney disease is low even among people who are at high risk (those who have DM and hypertension) of having CKD.<sup>32</sup> Hypertensive patients were more concerned about developing cancer or cardiovascular disease, rather than risk of developing chronic kidney disease in one of the studies among primary care patients.<sup>32</sup> Few hypertensive patients in this study (20%) felt “very likely to develop CKD” and only one-third of all hypertensive patients (33%) were “very concerned about developing CKD”.<sup>32</sup> We can infer that high risk patients have less knowledge of the CKD’s serious health implications as compared with their knowledge related to other health problems. Assessing knowledge, attitudes and practices of chronic kidney disease among hypertensive patients will aid in developing future interventions to reduce burden of both hypertension and chronic kidney disease.<sup>32</sup>

## 1.6 CKD and hypertension in India

According to WHO estimates, about 32.5% men were hypertensive and about 31.7% women were hypertensive in 2008.<sup>33</sup> According to National Family Health Survey 4(2015) estimates, the prevalence of hypertension among Indian males is 13.6% and prevalence of hypertension among Indian females is 8.8%.<sup>34</sup> In India, the annual mortality rate due to chronic kidney disease is 10.9/100,000 people. The annual mortality rate of chronic kidney disease attributable to hypertension in India is 3.1/100,000 people.<sup>25</sup> There are no reports at national or state level in India to document chronic kidney disease burden in India.<sup>35</sup> The Indian society of nephrology set up an Indian CKD registry to collect nationwide data about chronic kidney disease. According to a CKD report published using the data from this registry, hypertensive nephrosclerosis was the second most common cause of chronic kidney disease in India.<sup>35</sup> The population of India is currently about 1 billion and following the recent trends, the burden of chronic diseases like diabetes and hypertension will rise. The burden of chronic renal disease will rise as about 25-40% of these patients will develop CKD at some stage of their lives.<sup>26</sup> Studies done in India related to chronic kidney disease have focused on its prevalence, epidemiology, trends etc.<sup>36</sup>

## 1.7 CKD and hypertension in the state of Uttarakhand, India

Uttarakhand is a hilly state in northern region of India. There are thirteen districts in this state.<sup>37</sup> In Udham Singh Nagar district of Uttarakhand, according to the data from NFHS 4, proportion of hypertensive men and women is 14.1% and 8.1% respectively.<sup>34</sup> In a study conducted in Uttarakhand, the serum creatinine levels were high in hypertensive patients compared with normotensive people.<sup>38</sup> No studies were found out during literature review that focused on knowledge, attitude and practice of chronic kidney disease among hypertensive patients in Uttarakhand.

The specific aim of this study is to assess the knowledge, attitude and practice (KAP) of hypertensive patients related to chronic kidney disease in Kashipur region of Udham Singh Nagar district of Uttarakhand. The results of this study can be used to develop new interventions to improve knowledge and awareness of people of Udham Singh Nagar regarding prevention and progression of chronic kidney disease and better self-management practices among high risk patients.

### **1.8 Research Questions:**

- What is the level of KAP(score) of chronic kidney disease among hypertensive patients in Kashipur region of Udham Singh Nagar district?
- Is there an association between knowledge of CKD and attitude towards CKD with practice related to CKD among hypertensive patients?
- Is there an association between demographic variables, including age, gender, education, place of residence (urban/rural), marital status, and socio economic status with the practice score of chronic kidney disease?
- Is there an association of other risk factors of CKD, including family history of CKD, hyperlipidemia, diabetes mellitus, kidney infection and presence of urinary tract stones with the practice score of CKD?

## **2. METHODS**

### **2.1 Study Design**

A cross-sectional survey using self-administered structured questionnaire was used to assess KAP of chronic kidney disease among hypertensive patients seeking care at the outpatient

departments of the public and private hospitals in Kashipur region. A cross sectional survey design was chosen because it is relatively inexpensive and time efficient method.<sup>39</sup> Self-administered mode helps prevent interviewer bias and saves time and expenses.<sup>40</sup>

## **2.2. Study population and settings**

Target population included adult hypertensive patients attending outpatient departments of the public and private hospitals in Kashipur region.

Inclusion criteria for study population were the following:

1. Being an adult >18 years of age
2. Having systolic blood pressure  $\geq 140$  and diastolic blood pressure  $\geq 90$
3. Being a resident of Kashipur region or nearby villages
4. Being able to read and speak in English/Hindi language

## **2.3. Sampling methodology and data collection**

Participants were recruited from the public hospital (LD Bhatt Hospital) and the largest two private clinics serving the majority of patients in the Kashipur region. The overall sample was divided equally between the public and private hospitals. The study team used convenience sampling to reach the required sample size at the premises of each clinic. Self-administered interviews were completed in the waiting areas of the outpatient departments at the selected hospitals where patients wait for their appointment with the physician in a queue. A trained interviewer approached the tenth person in the waiting area from the start of the waiting queue and provided the screening part of the instrument to the person. The interviewers obtained a verbal consent from the eligible participants and guided the participants to a separate room near

the waiting room where the survey instrument was provided to the person. The interviewers kept track of the appointment numbers so that the participants do not miss their appointments. If the person was not eligible, the interviewer approached the next person. The interviewers used this recruitment approach in the outpatient departments of all selected hospitals included in this study until the required sample size for each hospital was reached.

## 2.4. Sample size

The student calculated the sample size using the formula for the comparison of two sample means.

$$\begin{aligned}n &= (Z_{\alpha/2} + Z_{\beta})^2 * 2 * \sigma^2 / d^2 \\ &= (1.96 + 0.84)^2 * 2 * (5.6)^2 / 2^2 \\ &= 122.93 = 123\end{aligned}$$

$$N = 2 * 123 = 246$$

Here, we took level of significance ( $\alpha$ ) = 0.05 and power = 80

We aimed to detect a difference of two points in the knowledge scores between men and women.

The value of standard deviation of mean knowledge score ( $\sigma = 5.6$ ) was taken from a KAP study conducted among hypertensive patients in India.<sup>27</sup>

## 2.6. Study instrument

The student investigator developed the survey instrument based on the studies conducted on this topic internationally.<sup>29,32,41,42,43,44,45</sup> The survey instrument consisted of five domains, including: 1) Knowledge of CKD, 2) Attitude related to CKD, 3) Practices related to CKD, 4) Socio-demographic factors and 5) Presence of risk factors related to CKD. The self-administered

instrument was translated into Hindi language and pretested. After conducting the pretest among five hypertensive people, the questionnaire was revised and finalized.

## **2.7. Study variables**

The dependent variables for this study were

- Practice score and combined KAP score

The independent variables for this study were:

- Knowledge and attitude score
- Socio demographic factors: age(continuous), gender(binary), education(ordinal), marital status(nominal), employment(binary), place of residence(binary) and socioeconomic status(ordinal).
- Other risk factors related to CKD (family history of CKD, hyperlipidemia, diabetes mellitus, kidney infection and urinary tract stones). These were analyzed as binary variables (yes/no).

## **2.8. Data management and analysis**

Data entry was done into the SPSS software and for data analysis, SPSS and STATA soft wares were used. Data cleaning was done by randomly comparing 10% of questionnaires with the entered data in the dataset; visual check-ups were done to see inconsistent values and outliers. In order to find out missing values and outliers, descriptive statistics were used (frequencies).

For obtaining the knowledge scores, we scored each 'yes' as 1 and each 'no' and 'I don't know' as 0. The scores of all knowledge questions were added up to get the total knowledge score. For the attitudes domain, positive answers were scored as (1), while negative attitudes were scored



(0). For the practices domain, each item was scored as ‘Yes’ (1), ‘No’ (0), and all ‘I don’t know’ were considered as missing values. The overall compliance score was calculated, the persons who were adherent to the antihypertensive regime were given a score of (1), and others who were not adherent to antihypertensive regimen were given a score of (0). Participants who followed the recommended physical activity regime were given a score of (1) and others were given a score of (0). Nonsmokers and participants who did not consume alcohol were given a score of (1) while smokers and participants who abused alcohol were given a score of (0). Descriptive analysis was done to report the socio demographic characteristics. All continuous variables were reported as means and standard deviations and all categorical variables were reported as percentages. Linear regression analysis was done to check if there was a significant association between the practice score and different characteristics of the participants: demographic characteristics (including age, gender, socioeconomic status, place of residence (urban/rural), marital status, employment) and other risk factors of CKD (family history of CKD, hyperlipidemia, smoking, Diabetes Mellitus, kidney infection and urinary tract stones). First, simple linear regression was used for univariate analysis. All the variables which were significant in the univariate analysis were tested for significant associations in the multiple linear regression analysis.

## **2.9. Ethical considerations**

This study was approved by the Institutional Review Board of American University of Armenia. Permission was taken from the heads of the clinics before conducting the surveys. Oral informed consent was asked from the participants before starting the interviews. Only ID numbers were used in the questionnaires for the participants. The data collected from the participants was kept

in a secure place. Nobody had access to data except the research team. Data safety was ensured by a strong password on the dataset.

## **3. RESULTS**

### **3.1 Administrative results**

Overall one thousand three hundred seventeen attempts were made to reach the final sample size. Eight hundred eighty five potential participants did not fulfill the eligibility criteria. Around 186 people directly refused to participate in the survey.

### **3.2 Descriptive statistics**

#### *Socio-demographic characteristics*

Table 1 shows the socio-demographic characteristics of the study population. The mean age of the population was 50.85 years (SD 11.7). Males constituted the majority of the study population (61.8%). Around 85% of the study participants were married. About half of the participants were rural residents, rest lived in urban areas. Majority of the study population belonged to middle socio economic status (family monthly income range: 33001-150000 INR (USD 500-2400) (79.2%). Most of the participants (70%) had higher secondary or above higher secondary education. Around 60% of the participants were employed.

#### *Health characteristics*

Table 2 shows the health characteristics of the study population. The mean self-reported values for systolic and diastolic BP were 161.2 (SD 14.4) and 103.25 (SD 10.1) respectively. Around 37% of the participants had a family history of chronic kidney disease. A little more than half of

the participants had hypercholesterolemia along with hypertension. DM was present in 18% of the sample.

### ***Knowledge related to CKD***

The responses to knowledge questions are provided in Table 5. About 85% of participants were aware of the fact that a person has two kidneys. Most of the participants were not able to provide correct answers to the questions related to kidneys functions (Table 4). When asked about risk factors of CKD, majority of the participants identified smoking (77.2%) and alcohol consumption (74.4). Only 56.6 % identified DM as a risk factor of CKD, while 54.1 % identified hypertension as a cause of CKD. About 19% of the participants identified herbal medicines as a cause of renal damage.

Forty eight percent of respondents correctly identified CKD as a risk factor for hypertension. Most participants knew about the necessity to follow healthy lifestyles to avoid CKD in future including following dietary salt restriction (63.8%), exercising daily (66.3%), avoiding smoking (61%), not drinking alcohol (68.3%), complying with antihypertensive medicines (67.5%), and going for regular BP checkups (71.5%). Most of the participants (64.6) knew about treatment of late stages of CKD by kidney transplant or dialysis. Eighty seven percent identified frequent urination as a symptom of CKD. Only two participants were able to correctly answer all the questions on symptoms of CKD.

The mean knowledge score was 15.2 (SD 3.2) (Table 3). The mean knowledge percent score was 50.6%.

### ***Attitude related to CKD***

Table 6 shows the participants' attitude to CKD. Only 35.8 % of the participants thought that kidney disease is a major problem among hypertensive patients in India. Most of the participants (83%) agreed that they may get kidney disease in future if they do not follow healthy lifestyle. About 73% of the participants believed that kidney disease can be prevented. Around 66% of the participants thought there is a need to have more information on CKD prevention from doctors and nurses.

The mean attitude score was 5.9(SD 1.2). The mean attitude percent score was 65.5%.

### ***Practice related to prevention of CKD***

#### *Practice related to medical checkups and following doctors' advice*

The majority of hypertensive patients (83.7%) went for BP checkups every 2-4 weeks (Table 7). Around 64% reported not going for their kidney checkups once per year. Most of the patients (74%) took painkiller medicines on a doctor's prescription, but only 69.5% followed instructions given by the doctor regarding the dosage of painkillers to be taken.

#### *Practice related to following dietary recommendations*

Only 24.4% patients followed healthy recommendations on eating fruits every day (Table 8). What refers to regular vegetable intake, only 37.0% of the participants had vegetables every day. Most of the patients did not follow dietary restriction of high fat dairy products (87%), butter or ghee (78.5%) and fried food (62.2%).

#### *Practice related to dietary salt restriction*

About 89% of the participants followed the practice of adding recommended amount of salt while cooking (Table 9). Only 36.2% looked at salt labels while buying foods. None of the participants followed all dietary salt restrictions.

### Compliance with antihypertensive medicines

Only 14 participants (5.6%) were adherent to the antihypertensive medicine regime prescribed to them. (Table 10)

### Practice related to physical activity, smoking and alcohol consumption

Only 35.0% reported adhering to the recommended physical activity level (Table 11). Majority of the participants (75.2%) were non-smokers. Also, most of them did not drink alcohol (74.0%).

The overall mean practice score was 8.10 (SD 1.83) (Table 3). The mean percent practice score was 47.64%.

### ***Mean KAP score***

The total mean KAP score for the study was 29.00 (SD 3.59) (Table 3). The mean percent KAP score was 51.7%.

## **3.3 Correlation analysis**

The knowledge percent score was not correlated with the attitude percent score ( $\rho = 0.242$ ,  $p$  value = 0.000) and with practice percent score ( $\rho = -0.169$ ,  $p$  value = 0.010) (Table 14). Attitude percent score was also not correlated with practice percent score ( $\rho = -0.2$ ,  $p$  value = 0.009).

## **3.4 Regression analysis**

### ***Unadjusted regression analysis***

In the unadjusted analysis keeping practice percent outcome as the outcome variable, gender was significantly associated with the practice percent score (Table 12). Being a female increased the practice percent score by 5.08 as compared to being a male ( $p$  value = 0.000, CI: 2.301, 7.864).

Place of residence was associated with the practice percent score, with an urban resident

decreasing the practice percent score by 3.44 (p value = 0.015, CI: -6.191, - 0.681). Belonging to middle and high socio economic status as compared to belonging to low socio economic status was significantly associated with the practice percent score (for middle socio economic status,  $\beta$  = -9.76, p value = 0.000 , CI: -12.619, -6.899 and for high socio economic status,  $\beta$  = -10.36, p value = 0.000 , CI: -13.801, -6.923). Having higher education as compared to primary education was negatively associated with the practice percent score (for secondary education,  $\beta$  = -9.55, p value = 0.000, CI: -12.467,-6.627, for graduate and undergraduate education,  $\beta$  = -12.48, p value = 0.000, CI: -16.381, -8.595). Being unemployed increased the practice percent score by 8.53 when compared to being employed (P value = 0.000, CI: 5.890, 11.160). Participants visiting private hospitals had higher practice percent scores ( $\beta$  = 8.91, p value = 0.000, CI: 6.371, 11.447). Age, marital status and presence of comorbidities were not significantly associated with the practice percent score.

### ***Adjusted regression analysis***

The variables which demonstrated significant association with the practice percent score in unadjusted analysis were included in the adjusted model (Table 13). Belonging to middle socio economic status as compared to belonging to low socio economic status was significantly associated with the practice percent score in the final adjusted model (  $\beta$  = -3.62, p value = 0.023 , CI: -6.788, -0.449). Having higher education as compared to primary education was negatively associated with the practice percent score after adjusting for other variables (for secondary education,  $\beta$  = -4.67, p value = 0.003, CI: -7.728, - 1.619, for graduate and undergraduate education,  $\beta$  = -7.58, p value = 0.000, CI: -11.744, -3.148). Employment status was marginally significant in the final adjusted model ( $\beta$  = 2.78, p value = 0.052, CI: -0.011, 5.579). Type of hospital for hypertension care maintained significant association with the outcome in the final

adjusted model ( $\beta = 5.51$ , P value = 0.000, CI: 2.881, 8.131). Gender and place of residence were not significantly associated with the practice percent score in the adjusted model.

#### 4. DISCUSSION

This study assessed knowledge, attitude and practice related to chronic kidney disease among hypertensive patients of Kashipur region, Udham Singh Nagar district, India. The mean knowledge percent score of the study participants was 50.6%, which is quite low as compared to the results of studies conducted in other countries.<sup>42</sup> For example in study conducted among high risk patients in Jordan, the mean knowledge percent score was around 80%.<sup>42</sup> These differences could be due to the differences in sample characteristics of the two study populations as the Jordanian sample included all high risk patients for CKD (patients with hypertension, DM, age >65 years, family history of CKD, chronicity with analgesia).<sup>42</sup> Also, in the study conducted among hypertensive patients in Palestine, the mean percent knowledge score related to CKD was around 62%.<sup>46</sup> However our results are in line with the results obtained in the study among primary care patients in Singapore in 2012, where the mean knowledge percent score of the study participants was around 49%.<sup>30</sup> Also, this score is higher than the mean knowledge percent scores of similar studies conducted in Malaysia and Tanzania where mean knowledge percent scores were 34%<sup>12</sup> and 33%<sup>44</sup> respectively.

Overall, our study participants demonstrated quite poor knowledge about risk factors and symptoms of CKD. None of the participants could give correct responses to all questions about risk factors and symptoms of CKD. In the study conducted in Jordan, around 70% participants could recognize swollen feet and ankles as a symptom of CKD,<sup>42</sup> while in our study, only 56%

could do so. These differences may be due to lack of appropriate education and counseling provided by physicians to hypertensive patients in India. This also reflects the absence of an awareness increasing and educational programs for high risk patients regarding prevention of CKD in India.<sup>47</sup> In our study, around 54% patients could identify hypertension as a risk factor of CKD but in a study conducted in Australia, only 3% diabetic patients could identify hypertension as a risk factor for CKD.<sup>30</sup> Around 57% patients in our sample could identify diabetes as a risk factor for CKD but in a study conducted in United States, only 12% primary care patients could do so.<sup>31</sup>

The mean attitude score of the study participants was 65.52%. It is lower compared to 78.67 % reported for Jordanian participants.<sup>42</sup> Just 65% participants thought that doctors and nurses should provide more information regarding prevention of CKD, whereas in Jordan around 91% patients agreed to this statement.<sup>42</sup> Only 51% participants in our study thought that kidney disease is expensive to treat. This proportion is quite low when compared to 91% Jordanian patients<sup>42</sup> and 71% of diabetic patients in Rwanda<sup>48</sup> who thought that kidney disease is expensive to treat. However, it is higher when compared to the results of the study conducted in the community in Indiana, United States where this proportion was 21%.<sup>49</sup> It can be assumed that high risk patients have a better attitude towards prevention of CKD than the community.<sup>49</sup>

The mean percent practice score in our sample was approximately 48% which is low compared to 64.58% mean percent practice score obtained in Jordan.<sup>42</sup> However, some of the practices were more common in our sample, for example, 84% of patients in our study sample went for regular checkups as compared to 36% among the Jordanian population.<sup>42</sup> Around 15% of the study respondents followed all dietary salt restrictions as compared to 30% of Jordanian participants.<sup>42</sup> The proportion of participants who were adherent to the anti-hypertensive



medicine regime(14%) was very low when compared to Jordanian participants (63%)<sup>42</sup>, participants from a study conducted in Rwanda (82%)<sup>48</sup> and in a study conducted among high cardiovascular risk population in United States(95%)<sup>50</sup>. What refers to practices related to smoking and alcohol consumption, they were better in our sample as compared to the Jordanian participants. Around 75% were nonsmokers in our sample as compared to 11 % in the study conducted in Jordan, while, around 74% participants did not consume alcohol (1% in the Jordanian participants).<sup>42</sup> These differences could be due to culturally not acceptable practice of smoking and alcoholism in India.<sup>51</sup> However, the proportion of non-smokers in the study conducted among diabetic patients in Rwanda was 95%.<sup>48</sup>

Around 37% participants in our study had family history of dialysis or kidney transplant which is higher when compared to a community based study conducted in Indiana where the proportion of participants with family history of CKD was around 29%. Around 18% of patients in our study had coexisting DM, this proportion is higher than a community based study conducted in Tanzania, where the proportion of participants with diabetes was around 10%.<sup>52</sup>

Socio economic status, educational status, employment status and type of hospital were significantly associated with the practice percent score in the adjusted analysis in our study.

Employment status were associated with practice percent scores in our study, with unemployed people having a higher practice percent score than employed people ( $\beta = 2.78$ , p value = 0.052, CI: -0.011, 5.579) which might be explained by the busy schedules of employed people which does not allow them to follow healthy lifestyle required for prevention of CKD.<sup>53</sup> Higher education led to decrease in the practice percent score when compared to primary education. (For secondary education,  $\beta = -4.67$ , p value = 0.003, CI: -7.728, - 1.619, for graduate and undergraduate education,  $\beta = -7.58$ , p value = 0.000, CI: -11.744, -3.148), which was a surprising

result. Also, people with higher socio economic status had lower practice percent scores when compared to those with lower socio economic status ( $\beta = -3.62$ , p value = 0.025, CI: -6.788, -0.449). This could be due to the fact that high socio economic status might negatively affect a person's lifestyle related to CKD, while we are not able to check for all aspects of the respondents' lifestyle in our study.<sup>42,54</sup>

Patients attending private clinics for hypertension care had a higher practice percent score than patients going to public clinics ( $\beta = 5.51$ , P value = 0.000, CI: 2.881, 8.131). This difference could be explained by better individual care and better counseling provided by private health care providers, and higher burden among physicians in public hospitals due to inappropriate doctor:patient ratios in public hospitals.<sup>55,56</sup> Gender, place of residence and presence of comorbidities or other risk factors of CKD were not associated with the practice percent score in the adjusted model.

The major strength of this study is that it was the first study conducted in Uttarakhand to explore knowledge, attitude and practice related to chronic kidney disease. The findings of this study can be used for formulating new intervention programs with the aim of prevention of CKD among hypertensive patients. Another strength is the use of self-administered instruments which prevented interviewer bias.

As this was a cross sectional survey, causal inferences cannot be derived from this survey. Also many associations could be affected by unexplored variables. For example, we did not explore the effect of variables like BMI, duration of hypertension, use of health insurance, and traditional medicine. Since we used convenience sampling to involve participants, we could not obtain a fully representative sample of the target population. A stronger sampling methodology would enhance the internal validity of results. Use of self-reported hypertension for screening of

eligibility of participants was a limitation as there could be some people suffering from hypertension who were not aware of hypertension as their diagnosis at that point of time. Also, use of self-reported hypertension might have led to overestimation or underestimation of the hypertension status by the patients. Around one hundred eighty six people refused to participate in the study and we do not know how these patients differed from our study participants, as they refused to participate even before the screening questions were asked. The results of the study have limited generalizability due to huge cultural differences between different states of India and other countries.

## **5. CONCLUSION**

The results of the study show that the knowledge, attitude and practices related to CKD are inadequate among the hypertensive patients in Kashipur region. There is a strong need for a comprehensive intervention that would encompass an educational program for hypertensive patients in the clinics, and better counseling programs by physicians regarding good practices targeting behavioral factors, particularly in the public hospitals. A similar study can be conducted among the general population and other high risk group patients to see the differences in KAP between general population and high risk groups.

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## Tables

**Table 1: Study sample characteristics**

**Socio demographic characteristics**

		<b>% (N)</b>
<b>Age (Mean, SD)</b>		50.9(11.7)
<b>Gender</b>	<i>Male</i>	61.8% (152)
	<i>Female</i>	39.2% (94)
<b>Marital status</b>	<i>Single/unmarried</i>	5.7% (14)
	<i>Married</i>	85.4% (210)
	<i>Divorced</i>	4.5% (11)
	<i>widowed</i>	4.5% (11)
<b>Place of residence</b>	<i>Urban</i>	50.8% (125)
	<i>Rural</i>	49.2% (121)
<b>Family's monthly expenses</b>	<i>1000 to 33000 INR</i>	19.9% (49)
	<i>33001 to 55000 INR</i>	14.2% (35)
	<i>55001 to 88800 INR</i>	44.7% (110)
	<i>88801 to 150000 INR</i>	20.2% (50)
	<i>Above 150000 INR</i>	0.8% (2)
<b>Socio economic status</b>	<i>Low</i>	34.1% (84)
	<i>Middle</i>	44.7% (110)
	<i>High</i>	21.2% (52)
<b>Education status</b>	<i>Primary education</i>	11.8% (29)
	<i>Middle school education</i>	15.4% (38)
	<i>Secondary education</i>	23.2% (57)
	<i>Higher secondary education</i>	32.1% (79)
	<i>Undergraduate</i>	13.8% (34)
	<i>Graduate</i>	3.7% (9)
<b>Medical education</b>	<i>Yes</i>	4.9% (12)
	<i>No</i>	95.1% (234)
<b>Employment status</b>	<i>Yes</i>	60.6% (149)
	<i>No</i>	39.4% (97)
<b>Type of hospital</b>	<i>Public</i>	50.0% (123)
	<i>Private</i>	50.0% (123)

**Table 2: Health status**

		Mean (SD)
<b>BP measurement</b>	<i>Systolic BP</i>	161.2 (14.4)
	<i>Diastolic BP</i>	103.3 (10.1)
		<b>% (N)</b>
<b>Presence of comorbidities (other risk factors for CKD)</b>	<i>Family history of dialysis/kidney transplant</i>	15.0% (37)
	<i>Hypercholesterolemia</i>	59.3% (146)
	<i>Kidney infection</i>	19.5% (48)
	<i>Kidney stones</i>	15.9% (39)
	<i>Diabetes Mellitus</i>	18.3% (45)

**Table 3: Mean scores for knowledge, Attitude, Practice and KAP related to CKD**

Variables	Mean	SD	Mean % scores
<b>Knowledge score</b>	15.21	3.22	50.60
<b>Attitude score</b>	5.92	1.16	65.52
<b>Practice score</b>	8.10	1.83	47.64
<b>KAP score</b>	29.00	3.59	51.70

**Table 4: Knowledge, attitude, practice and KAP scores by gender, place of residence, marital status, education status, socioeconomic status, employment status and presence of risk factors**

	N	Mean knowledge percent score(SD)	Mean attitude percent score(SD)	N	Mean practice percent score(SD)	Mean KAP percent score(SD)
<b>Gender</b>						
<i>Male</i>	152	50.06(11.04)	65.28(13.24)	143	45.66(10.49)	50.67(6.38)
<i>Female</i>	94	51.73(10.18)	66.54(12.46)	91	50.74(10.58)	53.55(6.10)
<b>Place of residence</b>						
<i>Urban</i>	125	50.45(9.77)	65.15(10.01)	123	46.00(9.79)	51.24(5.47)
<i>Rural</i>	121	50.96(11.67)	66.39(15.41)	111	49.44(11.58)	52.39(7.30)
<b>Socioeconomic status</b>						
<i>Low</i>	84	49.40(11.83)	63.89(15.98)	80	54.19(9.67)	52.67(7.39)
<i>Middle</i>	160	49.66(9.86)	65.45(11.59)	152	44.43(10.47)	50.05(5.31)
<i>high</i>	2	55.00(9.67)	69.44(9.04)	2	43.82(8.18)	53.92(6.01)
<b>Educational Status</b>						
<i>Primary education</i>	67	46.26(10.14)	64.51(13.29)	65	55.02(11.02)	51.70(6.14)
<i>Secondary</i>	136	50.02(9.62)	65.27(12.71)	130	45.47(9.84)	50.81(6.32)
<i>Undergraduate and Graduate</i>	43	59.76(9.76)	69.25(12.79)	39	42.53(6.67)	55.21(6.17)
<b>Marital Status</b>						
<i>Married</i>	210	50.68(10.44)	66.03(12.47)	200	47.55(10.71)	51.83(6.17)
<i>Others</i>	36	50.83(12.45)	64.19(15.51)	34	48.09(11.44)	51.57(7.84)
<b>Employment status</b>						
<i>Yes</i>	149	51.34(10.36)	67.11(10.89)	142	44.28(8.82)	51.43(6.05)
<i>No</i>	97	49.72(11.26)	63.68(14.21)	92	52.81(11.53)	52.34(6.94)
<b>Comorbidities</b>						
<i>Family history of CKD</i>	37	50.99(10.79)	60.66(14.49)	36	45.52(10.67)	50.74(6.67)
<i>Hypercholesterolemia</i>	146	50.54(10.32)	65.44(12.24)	136	46.62(10.31)	51.31(6.02)

	<b>N</b>	<b>Mean knowledge percent score(SD)</b>	<b>Mean attitude percent score(SD)</b>	<b>N</b>	<b>Mean practice percent score(SD)</b>	<b>Mean KAP percent score(SD)</b>
<i>Kidney infection</i>	48	50.27(11.13)	65.74(12.72)	47	45.93(10.16)	51.44(8.03)
<i>Kidney stones</i>	39	48.29(10.48)	66.38(12.61)	39	47.36(10.71)	50.91(5.97)
<i>Diabetes</i>	45	50.44(12.18)	66.41(11.72)	42	47.48(12.07)	51.27(6.48)

**Table 5: Percentage of responses to knowledge questions**

	<b>Yes % (N)</b>	<b>No % (N)</b>	<b>I don't know % (N)</b>
<i>11. A person has two kidneys</i>	84.6% (208)	10.2% (25)	5.3% (13)
<i>12. Kidneys filter waste products and toxins from the blood</i>	35.4% (87)	26.4% (65)	38.2% (94)
<i>13. Kidneys regulate body's water balance</i>	40.7% (100)	18.7% (46)	40.6% (100)
<i>14. Kidneys regulate chemical balance of the body</i>	33.3% (82)	18.7% (46)	48.0% (118)
<i>15. Kidneys release hormones to regulate blood pressure</i>	32.5% (80)	21.1% (52)	46.3% (114)
<i>16. Kidneys help in the production of red blood cells</i>	35.0% (86)	24.8% (61)	40.2% (99)
<i>17. Kidneys release hormones to develop strong bones.</i>	37.4% (92)	22.4% (55)	40.2% (99)
<i>18. Obesity can lead to kidney disease.</i>	47.2% (116)	28.5% (70)	24.4% (60)
<i>19. Uncontrolled high blood pressure can damage kidneys and lead to chronic kidney disease.</i>	54.1% (113)	28.0% (69)	17.9% (44)
<i>20. Having diabetes can damage kidneys and lead to chronic kidney disease</i>	56.9% (140)	22.4% (55)	20.7% (51)
<i>21. The function of kidneys decreases with increasing age of a person.</i>	41.9% (103)	28.0% (69)	30.1% (74)
<i>22. Having a family member with kidney disease increases the chances of having kidney disease.</i>	45.5% (112)	30.5% (75)	24.0% (59)
<i>23. Smoking cigarettes can lead to kidney disease</i>	77.2% (190)	10.6% (26)	12.2% (30)
<i>24. Drinking alcohol can lead to kidney disease</i>	74.4% (183)	11.0% (27)	14.6% (36)
<i>25. Ingestion of too many pain killers can damage kidneys</i>	40.7% (100)	38.6% (95)	20.7% (51)

26. <i>Use of herbal medicines can lead to kidney damage</i>	18.7% (46)	66.7% (164)	14.6% (36)
27. <i>Sometimes chronic kidney disease can have no symptoms until it reaches advanced stages</i>	33.3% (82)	19.9% (49)	46.7% (115)
28. <i>Having chronic kidney disease can lead to uncontrolled hypertension, which can in turn damage different organs (heart, brain, eyes)</i>	48.0% (118)	25.6% (63)	26.4% (65)
29. <i>Hypertensive people should follow dietary salt restrictions in order to avoid chronic kidney disease in future.</i>	3.8% (157)	15.9% (39)	20.3% (50)
30. <i>Hypertensive people should exercise daily in order to avoid chronic kidney disease in future.</i>	66.2% (163)	14.2% (35)	19.5% (48)
31. <i>Hypertensive people should not smoke in order to avoid chronic kidney disease in future.</i>	61.8% (152)	19.1% (47)	19.1% (47)
32. <i>Hypertensive people should not drink alcohol order to avoid chronic kidney disease in future.</i>	68.3% (168)	16.3% (40)	15.4% (38)
33. <i>Hypertensive people should take their antihypertensive medicines regularly to prevent chronic kidney disease in future.</i>	67.5% (166)	15.9% (39)	16.7% (41)
34. <i>Hypertensive people should regularly get their check their blood pressure checked.</i>	71.5% (176)	12.6% (31)	15.9% (39)
35. <i>Hypertensive people should go for regular kidney tests (blood and urine) to avoid kidney disease in future.</i>	57.3% (141)	15.9% (39)	26.8% (66)
36. <i>Early stages of chronic kidney disease can be treated by medicines.</i>	51.2% (126)	14.6% (36)	34.1% (84)
37. <i>Early stages of chronic kidney disease can be treated by lifestyle changes.</i>	45.5% (112)	24.0% (59)	30.5% (75)
38. <i>Late stages of chronic kidney disease can be treated with dialysis or kidney transplant.</i>	64.6% (159)	14.6% (36)	20.7% (51)
39. <i>Chronic kidney disease can lead to death if left untreated.</i>	65.9% (162)	12.2% (30)	22.0% (54)
40. <i>symptoms of CKD</i>	52.8% (130)	35.0% (86)	12.2% (30)
<i>a) Tiredness and loss of concentration</i>			
<i>b) Poor appetite</i>	41.1% (101)	35.8% (88)	23.2% (57)
<i>c) Loss of sleep</i>	41.5% (102)	45.9% (113)	12.6% (31)
<i>d) muscle cramps</i>	57.7% (142)	30.9% (76)	11.4% (28)
<i>e) Swollen feet and ankles</i>	56.1% (138)	36.2% (89)	7.7% (19)
<i>f) Dry and itchy skin</i>	33.7% (83)	54.9% (135)	11.4% (28)



<i>h) Frequent urination</i>	87.0% (214)	8.9% (22)	4.1% (10)
<i>i) Malnutrition</i>	24.4% (60)	39.0% (96)	36.6% (90)

**Table 6: Percentages of responses to attitude questions**

	<b>Agree N (%)</b>	<b>Disagree N (%)</b>	<b>Uncertain N (%)</b>
<i>41. I think kidney disease is a major problem among hypertensive people in India</i>	35.8% (88)	43.9% (108)	20.3% (50)
<i>42. I may acquire kidney disease in future if I do not follow healthy lifestyle</i>	82.5% (203)	10.2% (25)	7.3% (18)
<i>43. I may acquire kidney disease in future if I do not take my antihypertensive medications regularly</i>	73.6% (181)	11.8% (29)	14.6% (36)
<i>44. I think that kidney disease can be prevented</i>	73.2% (180)	16.3% (40)	10.6% (26)
<i>45. I will be worried if I get kidney disease in future</i>	73.2% (180)	16.3% (40)	10.6% (26)
<i>46. I will go a doctor if I have signs and symptoms of chronic kidney disease</i>	80.7% (169)	17.9% (44)	13.4% (33)
<i>47. I believe kidney disease is expensive to treat.</i>	51.6% (127)	26.0% (64)	22.4% (55)
<i>48. I think doctors and nurses should provide more information regarding prevention of kidney disease.</i>	65.9% (162)	19.5% (48)	14.6% (36)
<i>49. Having kidney disease would reduce my ability to work</i>	67.5% (166)	17.1% (420)	15.4% (38)

**Table 7: Practice related to medical checkups and following doctor's advice**

	<b>Yes % (N)</b>	<b>No % (N)</b>	<b>I don't know % (N)</b>
<i>50. Do you go for BP checkups every 2-4 weeks even if you don't have problems?</i>	83.7% (206)	15.0% (37)	1.2% (3)
<i>51. Do you go for checkup for your kidneys for at least once a year?</i>	36.2% (89)	63.4% (156)	0.4% (1)
<i>52. Do you take pain killer medicines on a doctor's prescription?</i>	74.0% (182)	25.2% (62)	0.8% (2)
<i>53. Do you always follow instructions given by your doctor regarding the dosage of pain killer medicines?</i>	69.5% (171)	27.2% (67)	3.3% (8)

**Table 8: Practice related to diet**

<i>Please, can you specify how often do you usually eat:</i>	<b>Everyday</b>	<b>5 times per week</b>	<b>3 times per week</b>	<b>1 time per week</b>	<b>Never</b>	<b>Don't know</b>
	<b>%(N)</b>	<b>%(N)</b>	<b>% (N)</b>	<b>%(N)</b>	<b>%(N)</b>	<b>%(N)</b>
<i>Fruits(including fresh fruits and juices)</i>	24.4(60)	49.6 (122)	13.0(32)	9.3(23)	3.7(9)	0.0(0)
<i>vegetables</i>	37.0(91)	23.6 (58)	37.0(91)	2.0(5)	0.4(1)	0.0(0)
<i>High fat dairy products(milk, cheese, cottage cheese)</i>	26.8(66)	41.5(102)	18.7(46)	6.5(16)	16.5(16)	0.0(0)
<i>Butter or ghee or vegetable oil</i>	17.8(43)	39.0(96)	22.0(54)	9.3(23)	12.2(30)	0.0(0)
<i>Fried food</i>	9.8(24)	26.0(64)	26.4(65)	13.4(33)	24.4(60)	0.0(0)

**Table 9: Practice related to salt intake**

	<b>Yes</b>	<b>No</b>
	<b>% (N)</b>	<b>% (N)</b>
<i>a) Add less amount of salt while cooking</i>	(89.0%)219	(11.0%)27
<i>b) Avoid adding salt to meals on my plate</i>	(76.4%)188	(23.6%)58
<i>c) Look at salt labels before buying food items</i>	(36.2%)89	(63.8%)157
<i>d) Avoid consumption of processed foods</i>	(52.4%)129	(47.6%)117

**Table 10: Compliance with antihypertensive medicine**

	<b>Yes % (N)</b>	<b>No % (N)</b>
<i>a) Do you ever forget to take your prescription drugs?</i>	84.6% (208)	15.4% (38)
<i>b) Are you careless at times about taking your drug?</i>	55.7% (137)	44.3% (109)
<i>c) Do you sometimes stop taking your drugs when you feel better?</i>	33.7% (83)	66.3% (163)
<i>d) Do you sometimes stop taking your drugs if they make you feel worse?</i>	51.6% (127)	48.4% (118)

**Table 11: Practice related to physical activity, smoking and alcohol consumption**

	<b>% (N)</b>
<b>Physical activity</b>	
<i>Doing recommended physical activity</i>	35.0% (86)
<i>Not doing recommended physical activity</i>	65.0% (160)
<b>Smoking</b>	
<i>Smokers</i>	24.8% (61)
<i>Non-smokers</i>	75.2% (185)
<b>Alcohol Consumption</b>	
<i>Yes</i>	26.0% (64)
<i>No</i>	74.0% (182)

**Table 12: SLR results for association between socio demographic characteristics and presence of risk factors for chronic kidney disease with practice percent score**

<b>Variable</b>	<b>Regression coefficient</b>	<b>P value</b>	<b>CI interval</b>
<b>Age</b>	0.02	0.734	-0.099,0.140
<b>Gender</b>	5.08	0.000	2.301,7.864
<b>Marital status</b>	-0.54	0.789	-4.491,3.145
<b>Place of residence</b>	-3.44	0.015	-6.191,-0.681
<b>SES</b>			
<i>Low</i>	reference		

<i>Middle</i>	-9.76	0.000	-12.619,-6.899
<i>high</i>	-10.36	0.000	-13.801,-6.923
<b>Educational status</b>			
<i>Primary</i>	Reference		
<i>Secondary</i>	-9.55	0.000	-12.467,-6.627
<i>UG and graduate</i>	-12.48	0.000	-16.381,-8.595
<b>Employment status</b>	8.53	0.000	5.899,11.160
<b>Type of hospital</b>	8.91	0.000	6.371,11.447
<b>Risk factors of CKD</b>			
<b>family history of CKD</b>	-2.61	0.182	-6.461,1.232
<b>hypercholesterolemia</b>	-2.41	0.092	-5.220,0.393
<b>Kidney infection</b>	-2.13	0.227	-5.660,1.334
<b>Kidney stones</b>	-0.33	0.861	-4.070,3.406
<b>Diabetes</b>	-0.19	0.917	-3.823,3.438

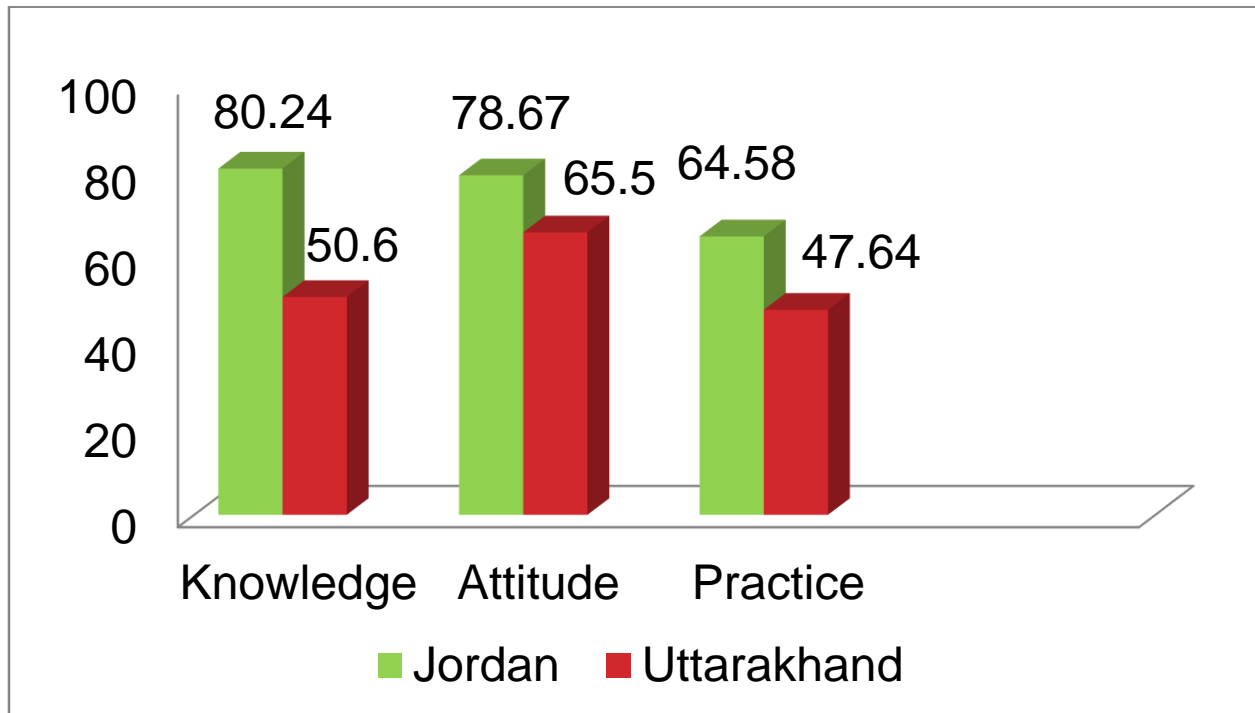
**Table 13: MLR results for association between socio demographic characteristics and presence of risk factors for chronic kidney disease with practice percent score**

<b>Variable</b>	<b>Regression coefficient</b>	<b>P value</b>	<b>CI interval</b>
<b>Gender</b>	2.06	0.100	-0.407,4.523
<b>Place of residence</b>	0.28	0.808	-2.209,2.774
<b>SES</b>			
<i>Low</i>	reference		
<i>Middle</i>	-3.62	0.023	-6.788,-0.449
<i>high</i>	-3.42	0.651	-7.280,0.439
<b>Educational status</b>			
<i>Primary</i>	Reference		
<i>Secondary</i>	-4.67	0.003	-7.728,-1.619
<i>UG and graduate</i>	-7.58	0.000	-11.744,-3.418
<b>Employment status</b>	2.78	0.052	-0.011,5.579
<b>Type of hospital</b>	5.51	0.000	2.811,8.131

**Table 14: Correlation analysis between Knowledge, Attitude and Practice percent scores**

	<b>Attitude score(<math>\rho</math>, p value)</b>	<b>Practice score(<math>\rho</math>, p value)</b>
<b>Knowledge score</b>	0.242(0.000)	-0.169(0.010)
<b>Attitude score</b>	1	-0.171(0.009)

*Graph 1: Mean knowledge, attitude and practice percent scores compared to similar study in Jordan*



## Appendix

### Questionnaire (English)

ID no \_\_\_\_\_

#### Screening questions

1. Have you ever been told by your doctor that you have high blood pressure level?
2. What is your blood pressure reading normally before taking medications or without taking them?  
Systolic blood pressure \_\_\_\_\_  
Diastolic blood pressure \_\_\_\_\_
3. Where do you live? \_\_\_\_\_
4. What is your age? \_\_\_\_\_
5. Are you able to read and understand Hindi/ English? \_\_\_\_\_
6. Are you currently on dialysis or did you receive a kidney transplant? \_\_\_\_\_

*If the respondent is eligible for the study, hand the questionnaire to the respondent and give them time to complete the survey.*

American University of Armenia

Gerald and Patricia Turpanjian School of Public Health

*Knowledge, Attitude and Practice of chronic kidney disease among hypertensive patients*

ID \_\_\_\_\_ Start Time (hh/mm) \_\_\_\_\_

Date (DD/MM/YY) \_\_\_\_/\_\_\_\_/\_\_\_\_ Type of hospital \_\_\_\_\_

**Instructions for Completing the Questionnaire**

*First, carefully read each question and the possible responses. Choose the option that best represents your response and check (✓) the box next to the option number. Some questions should be answered by words or by a number. There are blank lines next to these questions for you to write your response.*

*Please follow the instructions in Italics. These instructions will help you to complete the questionnaire and indicate which questions to skip for your particular case. Some questions may look like others, but each one is different. Please, take time to answer each of them.*

*Check the boxes with a pencil. If you make a mistake or change your mind, erase completely and check the correct box. Answer, please, ALL THE questions.*

*Example In many questions, you will be asked to choose and check response options provided in tables. The following example shows how to check the responses in tables:*

	Yes	No	I don't know
1. India's capital is Mumbai.	<input type="checkbox"/> 1	<input checked="" type="checkbox"/> 2	<input type="checkbox"/> 3
2. Cigarette smoking can lead to lung cancer	<input checked="" type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3

**Answer the questions starting from here!**

**Socio-demographic information**

1. What is your age? \_\_\_\_\_

2. What is your gender?

1. Male

2. Female



**3. What is your marital status?**

- 1. Single/unmarried
- 2. Married
- 3. Divorced
- 4. Widowed

**4. Where do you live?**

- 1. Rural area
- 2. Urban area

**5. What are your family's monthly expenses?**

- 1) 1000 to 33000 INR
- 2) 33001 to 55000 INR
- 3) 55001 to 88800 INR
- 4) 88801 to 150,000 INR
- 5) above 150,000 INR

**6. Your highest level of education?**

- 1. Primary education (1-5 years)
- 2. Middle-school education (6-8 years)
- 3. Secondary education (9-10 years)
- 4. Higher secondary education (11-12 years)
- 5. Undergraduate
- 6. Graduate/Post graduate

**7. Do you have a medical education? (Medicine/nursing)**

- 1. Yes
- 2. No

**8. Are you employed?**

- 1. Yes
- 2. No

3. Retired

9. Please specify your occupation. \_\_\_\_\_

10. Where do you usually go for your hypertensive care?

1. Government hospital

2. Private hospital

3. Others (specify)\_\_\_\_\_

### Knowledge of chronic kidney disease

*(The following questions ask about your knowledge about kidneys and chronic kidney disease. Please answer yes, no or I don't know to the following statements by ticking  boxes in front of the responses that you think is correct. Please answer all the questions.*

	Yes	No	I don't know
11. A person has two kidneys	<input type="checkbox"/> 1. Yes	<input type="checkbox"/> 2. No	<input type="checkbox"/> 3. I don't know
12. Kidneys filter waste products and toxins from the blood	<input type="checkbox"/> 1. Yes	<input type="checkbox"/> 2. No	<input type="checkbox"/> 3. I don't know
13. Kidneys regulate body's water balance	<input type="checkbox"/> 1. Yes	<input type="checkbox"/> 2. No	<input type="checkbox"/> 3. I don't know
14. Kidneys regulate chemical balance of the body	<input type="checkbox"/> 1. Yes	<input type="checkbox"/> 2. No	<input type="checkbox"/> 3. I don't know
15. Kidneys release hormones to regulate blood pressure	<input type="checkbox"/> 1. Yes	<input type="checkbox"/> 2. No	<input type="checkbox"/> 3. I don't know
16. Kidneys help in the production of red blood cells	<input type="checkbox"/> 1. Yes	<input type="checkbox"/> 2. No	<input type="checkbox"/> 3. I don't know
17. Kidneys release hormones to develop strong bones.	<input type="checkbox"/> 1. Yes	<input type="checkbox"/> 2. No	<input type="checkbox"/> 3. I don't know
18. Obesity can lead to kidney disease.	<input type="checkbox"/> 1. Yes	<input type="checkbox"/> 2. No	<input type="checkbox"/> 3. I don't know
19. Uncontrolled high blood pressure can damage kidneys and lead to chronic kidney disease.	<input type="checkbox"/> 1. Yes	<input type="checkbox"/> 2. No	<input type="checkbox"/> 3. I don't know
20. Having diabetes can damage kidneys and lead to chronic kidney disease	<input type="checkbox"/> 1. Yes	<input type="checkbox"/> 2. No	<input type="checkbox"/> 3. I don't know

21. The function of kidneys decreases with increasing age of a person.	<input type="checkbox"/> 1. Yes	<input type="checkbox"/> 2. No	<input type="checkbox"/> 3. I don't know
22. Having a family member with kidney disease increases the chances of having kidney disease.	<input type="checkbox"/> 1. Yes	<input type="checkbox"/> 2. No	<input type="checkbox"/> 3. I don't know
23. Smoking cigarettes can lead to kidney disease	<input type="checkbox"/> 1. Yes	<input type="checkbox"/> 2. No	<input type="checkbox"/> 3. I don't know
24. Drinking alcohol can lead to kidney disease	<input type="checkbox"/> 1. Yes	<input type="checkbox"/> 2. No	<input type="checkbox"/> 3. I don't know
25. Ingestion of too many pain killers can damage kidneys	<input type="checkbox"/> 1. Yes	<input type="checkbox"/> 2. No	<input type="checkbox"/> 3. I don't know
26. Use of herbal medicines can lead to kidney damage	<input type="checkbox"/> 1. Yes	<input type="checkbox"/> 2. No	<input type="checkbox"/> 3. I don't know
27. Sometimes chronic kidney disease can have no symptoms until it reaches advanced stages	<input type="checkbox"/> 1. Yes	<input type="checkbox"/> 2. No	<input type="checkbox"/> 3. I don't know
28. Having chronic kidney disease can lead to uncontrolled hypertension, which can in turn damage different organs (heart, brain, eyes)	<input type="checkbox"/> 1. Yes	<input type="checkbox"/> 2. No	<input type="checkbox"/> 3. I don't know
29. Hypertensive people should follow dietary salt restrictions in order to avoid chronic kidney disease in future.	<input type="checkbox"/> 1. Yes	<input type="checkbox"/> 2. No	<input type="checkbox"/> 3. I don't know
30. Hypertensive people should exercise daily in order to avoid chronic kidney disease in future.	<input type="checkbox"/> 1. Yes	<input type="checkbox"/> 2. No	<input type="checkbox"/> 3. I don't know
31. Hypertensive people should not smoke in order to avoid chronic kidney disease in future.	<input type="checkbox"/> 1. Yes	<input type="checkbox"/> 2. No	<input type="checkbox"/> 3. I don't know
32. Hypertensive people should not drink alcohol order to avoid chronic kidney disease in future.	<input type="checkbox"/> 1. Yes	<input type="checkbox"/> 2. No	<input type="checkbox"/> 3. I don't know
33. Hypertensive people should take their antihypertensive medicines regularly to prevent chronic kidney disease in future.	<input type="checkbox"/> 1. Yes	<input type="checkbox"/> 2. No	<input type="checkbox"/> 3. I don't know
34. Hypertensive people should regularly get their check their blood pressure checked.	<input type="checkbox"/> 1. Yes	<input type="checkbox"/> 2. No	<input type="checkbox"/> 3. I don't know
35. Hypertensive people should go for regular kidney tests (blood and urine) to avoid kidney disease in future.	<input type="checkbox"/> 1. Yes	<input type="checkbox"/> 2. No	<input type="checkbox"/> 3. I don't know
36. Early stages of chronic kidney disease can be treated by medicines.	<input type="checkbox"/> 1. Yes	<input type="checkbox"/> 2. No	<input type="checkbox"/> 3. I don't know
37. Early stages of chronic kidney disease can be treated by lifestyle changes.	<input type="checkbox"/> 1. Yes	<input type="checkbox"/> 2. No	<input type="checkbox"/> 3. I don't know
38. Late stages of chronic kidney disease can be treated with dialysis or kidney transplant.	<input type="checkbox"/> 1. Yes	<input type="checkbox"/> 2. No	<input type="checkbox"/> 3. I don't know
39. Chronic kidney disease can lead to death if left untreated.	<input type="checkbox"/> 1. Yes	<input type="checkbox"/> 2. No	<input type="checkbox"/> 3. I don't know

**40. The following sections asks you about the symptoms of chronic kidney disease.**

**(Different kinds of symptoms are listed below. Please answer yes, no or I don't know by ticking boxes  according to what you know about the symptoms of chronic kidney disease.**

	Yes	No	I don't know
a) Tiredness and loss of concentration	<input type="checkbox"/> 1. Yes	<input type="checkbox"/> 2. No	<input type="checkbox"/> 3. I don't know
b) Poor appetite	<input type="checkbox"/> 1. Yes	<input type="checkbox"/> 2. No	<input type="checkbox"/> 3. I don't know
c) Loss of sleep	<input type="checkbox"/> 1. Yes	<input type="checkbox"/> 2. No	<input type="checkbox"/> 3. I don't know
d) muscle cramps	<input type="checkbox"/> 1. Yes	<input type="checkbox"/> 2. No	<input type="checkbox"/> 3. I don't know
e) Swollen feet and ankles	<input type="checkbox"/> 1. Yes	<input type="checkbox"/> 2. No	<input type="checkbox"/> 3. I don't know
f) Dry and itchy skin	<input type="checkbox"/> 1. Yes	<input type="checkbox"/> 2. No	<input type="checkbox"/> 3. I don't know
g) Puffiness around eyes	<input type="checkbox"/> 1. Yes	<input type="checkbox"/> 2. No	<input type="checkbox"/> 3. I don't know
h) Frequent urination	<input type="checkbox"/> 1. Yes	<input type="checkbox"/> 2. No	<input type="checkbox"/> 3. I don't know
i) Malnutrition	<input type="checkbox"/> 1. Yes	<input type="checkbox"/> 2. No	<input type="checkbox"/> 3. I don't know

### **Attitude related to chronic kidney disease**

**Please express your attitude to the following statements regarding chronic kidney disease by ticking  boxes in front of "agree", "Disagree" or "uncertain".**

	Agree	Disagree	Uncertain
41. I think kidney disease is a major problem among hypertensive people in India	<input type="checkbox"/> 1. Agree	<input type="checkbox"/> 2. Disagree	<input type="checkbox"/> 3. Uncertain
42. I may acquire kidney disease in future if I do not follow healthy lifestyle	<input type="checkbox"/> 1. Agree	<input type="checkbox"/> 2. Disagree	<input type="checkbox"/> 3. Uncertain
43. I may acquire kidney disease in future if I do not take my antihypertensive medications regularly	<input type="checkbox"/> 1. Agree	<input type="checkbox"/> 2. Disagree	<input type="checkbox"/> 3. Uncertain
44. I think that kidney disease can be prevented	<input type="checkbox"/> 1. Agree	<input type="checkbox"/> 2. Disagree	<input type="checkbox"/> 3. Uncertain
45. I will be worried if I get kidney disease in future	<input type="checkbox"/> 1. Agree	<input type="checkbox"/> 2. Disagree	<input type="checkbox"/> 3. Uncertain
46. I will go a doctor if I have signs and symptoms of chronic kidney disease	<input type="checkbox"/> 1. Agree	<input type="checkbox"/> 2. Disagree	<input type="checkbox"/> 3. Uncertain
47. I believe kidney disease is expensive to treat.	<input type="checkbox"/> 1. Agree	<input type="checkbox"/> 2. Disagree	<input type="checkbox"/> 3. Uncertain
48. I think doctors and nurses should provide more information regarding prevention of kidney disease.	<input type="checkbox"/> 1. Agree	<input type="checkbox"/> 2. Disagree	<input type="checkbox"/> 3. Uncertain
49. Having kidney disease would reduce my ability to work	<input type="checkbox"/> 1. Agree	<input type="checkbox"/> 2. Disagree	<input type="checkbox"/> 3. Uncertain

## Practice related to chronic kidney disease

***(Rad the questions carefully and please answer yes, no or I don't know to the following statements by ticking  boxes in front of the desired response.)***

	Yes	No	I don't know
50. Do you go for BP checkups every 2-4 weeks even if you don't have problems?	<input type="checkbox"/> 1. Yes	<input type="checkbox"/> 2. No	<input type="checkbox"/> 3. I don't know
51. Do you go for checkup for your kidneys for at least once a year?	<input type="checkbox"/> 1. Yes	<input type="checkbox"/> 2. No	<input type="checkbox"/> 3. I don't know
52. Do you take pain killer medicines on a doctor's prescription?	<input type="checkbox"/> 1. Yes	<input type="checkbox"/> 2. No	<input type="checkbox"/> 3. I don't know
53. Do you always follow instructions given by your doctor regarding the dosage of pain killer medicines?	<input type="checkbox"/> 1. Yes	<input type="checkbox"/> 2. No	<input type="checkbox"/> 3. I don't know

**54. Please tick  the correct response regarding your diet.**

***You have to tick the correct response regarding how often you eat these food items.***

<i>Please, can you specify how often do you usually eat:</i>	everyday	5 times per week	3 times per week	1 time per week	never	Don't know
<b>Fruits(including fresh fruits and juices)</b>	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6
<b>vegetables</b>	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6
<b>High fat dairy products(milk, cheese, cottage cheese)</b>	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6
<b>Butter or ghee or vegetable oil</b>	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6
<b>Fried food</b>	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6

**55. Which of the following activities you do to restrict your salt intake?**

***(Please answer if you do or don't do these activities to restrict your salt intake by ticking  yes or no boxes.)***

	Yes	No
a) Add less amount of salt while cooking	<input type="checkbox"/> 1. Yes	<input type="checkbox"/> 2. No
b) Avoid adding salt to meals on my plate	<input type="checkbox"/> 1. Yes	<input type="checkbox"/> 2. No
c) Look at salt labels before buying food items	<input type="checkbox"/> 1. Yes	<input type="checkbox"/> 2. No
d) Avoid consumption of processed foods	<input type="checkbox"/> 1. Yes	<input type="checkbox"/> 2. No

**56. The following question is related to your compliance with the antihypertensive medications.**

***(Read the questions carefully and please answer yes or no to the following statements by ticking  boxes in front of the desired response.)***

	Yes	No
a) Do you ever forget to take your prescription drugs?	<input type="checkbox"/> 1. Yes	<input type="checkbox"/> 2. No
b) Are you careless at times about taking your drug?	<input type="checkbox"/> 1. Yes	<input type="checkbox"/> 2. No
c) Do you sometimes stop taking your drugs when you feel better?	<input type="checkbox"/> 1. Yes	<input type="checkbox"/> 2. No
d) Do you sometimes stop taking your drugs if they make you feel worse?	<input type="checkbox"/> 1. Yes	<input type="checkbox"/> 2. No

**57. In a usual week, do you do moderate physical activities for at least 30 minutes at a time, such as brisk walking, bicycling, gardening, jogging, or anything else that causes some increase in breathing or heart rate?**

1. Yes

2. No ***(If no, then go to question number 59)***

**58. How many days in a usual week do you do these moderate physical activities for at least 30 minutes at a time?**

1. Once in a week

2. two times in a week

3. three times in a week

4. More than three times a week

5. I don't know

**59. Have you ever smoked cigarettes?**

- 1. Yes
- 2. No (**Go to Question no 62**)

**60. Do you currently smoke cigarettes?**

- 1. Yes
- 2. No (**Go to Question no 62**)

**61. How many cigarettes per day do you smoke?**

\_\_\_\_\_ Cigarettes

**62. On average, how often do you drink (having at least 1 glass of wine; can/bottle of beer; shot of liquor, whiskey or vodka, or mixed drink)?**

- 1. Never (**go to question no 65**)
- 2. Less than one drink a week
- 3. One to three drinks a week
- 4. Four to six drinks a week
- 5. Seven to thirteen drinks a week
- 6. Fourteen drinks or more a week

**63. During the last 30 days how many times did you drink 5 or more portions of alcoholic drinks in a single day? (**Put approximate number if you do not remember exactly**)**

\_\_\_\_\_ times (**Put 0 if none**)

**64. Was there ever a time or times in your life when you drank 5 or more portions of any kind of alcoholic beverage almost every day?**

- 1. Yes
- 2. No

**65. The following section asks questions on presence of risk factors of chronic kidney disease in you.**

**Please carefully read the question and answer yes or no or I don't know to the following statements by ticking (✓) boxes in front of the desired response.**

	Yes	No	I don't know
a) Do any of your family members go for dialysis or have had a kidney transplant?	<input type="checkbox"/> 1. Yes	<input type="checkbox"/> 2. No	<input type="checkbox"/> 3. I don't know
b) Do you have high amount of cholesterol (fat) in your blood as told by your doctor?	<input type="checkbox"/> 1. Yes	<input type="checkbox"/> 2. No	<input type="checkbox"/> 3. I don't know
c) Did you ever have a kidney infection in the past or in the present as told by the doctor?	<input type="checkbox"/> 1. Yes	<input type="checkbox"/> 2. No	<input type="checkbox"/> 3. I don't know
d) Did you ever have kidney stones in the present or past as told by your doctor?	<input type="checkbox"/> 1. Yes	<input type="checkbox"/> 2. No	<input type="checkbox"/> 3. I don't know
e) Do you have diabetes (high blood glucose) as told by your doctor?	<input type="checkbox"/> 1. Yes	<input type="checkbox"/> 2. No	<input type="checkbox"/> 3. I don't know

*Thank you for your participation!*



## Hindi questionnaire

हिंदी प्रश्नावली

ID no \_\_\_\_\_

### स्क्रीनिंग प्रश्न

1. क्या आपके डॉक्टर ने कभी आपसे से कहा है कि आपका रक्तचाप (ब्लड प्रेशर) उच्च स्तर पर है?
2. दवाई लेने से पहले या बिना दवाई लिए आपका रक्तचाप (ब्लड प्रेशर) कितना रहता है?  
सिस्टोलिक रक्तचाप \_\_\_\_\_  
डायस्टोलिक रक्तचाप \_\_\_\_\_
3. आप कहां रहते हो? \_\_\_\_\_
4. आपकी उम्र क्या है? \_\_\_\_\_
5. क्या आप हिंदी या अंग्रेजी पढ़ और समझ पाते हैं? \_\_\_\_\_
6. क्या वर्तमान में आप डायलिसिस पर हैं या आपका गुर्दा प्रत्यारोपण हुआ है? \_\_\_\_\_

**यदि प्रतिवादी अध्ययन का पात्र है, तो प्रतिवादी को प्रश्नावली हाथ में दे और उन्हें सर्वेक्षण पूरा करने के लिए समय दें।**

आर्मेनिया का अमेरिकी विश्वविद्यालय  
गेराल्ड और पेट्रीसिया तुरपांजियान स्कूल ऑफ पब्लिक हेल्थ  
उच्च रक्तचाप रोगियों के बीच गुर्दे की पुरानी बीमारी से सम्बंधित ज्ञान, मनोवृत्ति और अभ्यास

ID \_\_\_\_\_ प्रारंभ समय (hh/mm) \_\_\_\_\_  
दिनांक (DD/MM/YY) \_\_\_\_/\_\_\_\_/\_\_\_\_ अस्पताल का प्रकार \_\_\_\_\_

**प्रश्नावली को पूर्ण करने का निर्देश**

सबसे पहले, ध्यान से प्रत्येक प्रश्न और संभव विकल्पों को पढ़ें। उस विकल्प को चुनें जो आपकी सबसे अच्छी प्रतिक्रिया का प्रतिनिधित्व करता है और विकल्प संख्या के बगल वाले बॉक्स में (√) चिन्हित करें। कुछ प्रश्नों के उत्तर शब्दों से या किसी संख्या के आधार पर दें। आपकी प्रतिक्रिया लिखने के लिए इन प्रश्नों के आगे रिक्त पंक्तियाँ हैं।

कृपया इटैलिक्स में दिए गए निर्देशों का पालन करें। इन निर्देशों से आपको प्रश्नावली को पूरा करने में मदद मिलेगी और आपको जो सवाल आपके विशेष मामले में छोड़ने हैं, उनके लिए संकेत मिलेंगे। कुछ सवाल दूसरों की तरह लग सकते हैं, लेकिन हर एक अलग है। कृपया, उनमें से प्रत्येक का जवाब देने के लिए समय लीजिए।

पेंसिल से बक्से चिन्हित करें। अगर आप कोई गलती करते हैं या अपनी राय बदलते हैं तो आप पूरी तरह से गलती मिटाएँ और सही बॉक्स चिन्हित करें। कृपया, सभी प्रश्नों के उत्तर दें।

उदाहरण - कई प्रश्नों में, आपको तालिकाओं में प्रदान किये गए विकल्पों को चुनने और जाँचने के लिए कहा जाएगा। नीचे दिया गया उदाहरण आपको तालिकाओं में विकल्पों को चुनने का तरीका दिखाता है:

	हाँ	नहीं	मुझे नहीं पता
1. भारत की राजधानी मुंबई है।	<input type="checkbox"/> 1	<input checked="" type="checkbox"/> 2	<input type="checkbox"/> 3
2. सिगरेट धूम्रपान से फेफड़ों का कैंसर होता है।	<input checked="" type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3

**कृपया यहां से सवालों के जवाब देने शुरू करें!**

**सामाजिक-जनसांख्यिकी जानकारी**

**1. आपकी उम्र क्या है? \_\_\_\_\_**

**2. आपका लिंग क्या है?**

- 1. पुरुष
- 2. महिला

**3. आपकी वैवाहिक स्थिति क्या है?**

- 1. एकल/अविवाहित
- 2. शादीशुदा
- 3. तलाकशुदा
- 4. विधवा/विधुर

**4. आप कहां रहते हैं?**

- 1. ग्रामीण क्षेत्र
- 2. शहरी क्षेत्र

**5. आपके परिवार का मासिक खर्च क्या है?**

- 1) 1000 to 33000 रूपए
- 2) 33001 से 55000 रूपए
- 3) 55001 से 88800 रूपए
- 4) 88801 से 150000 रूपए
- 5) 150000 रूपए से उपर

**6. आपकी शिक्षा का उच्चतम स्तर क्या है?**

- 1. प्राथमिक शिक्षा (1-5 कक्षा)
- 2. माध्यमिक विद्यालय शिक्षा (6-8 कक्षा)
- 3. उच्च शिक्षा (9-10 कक्षा )
- 4. वरिष्ठ माध्यमिक शिक्षा (11-12 कक्षा)
- 5. स्नातक( कालेज)
- 6. ग्रेजुएट/पोस्ट ग्रेजुएट

7. क्या आपने चिकित्सा शिक्षा प्राप्त की है? (नर्सिंग/ चिकित्सा)

1. हाँ  
 2. नहीं

8. क्या आप कार्यरत हैं?

1. हाँ  
 2. नहीं  
 3. सेवानिवृत्त( रिटायरड)

9. कृपया अपने व्यवसाय के बारे में बताएं। \_\_\_\_\_

10. आप अपने उच्च रक्तचाप की देखभाल के लिए आमतौर पर कहाँ जाते हैं?

1. सरकारी अस्पताल  
 2. निजी (प्राइवेट) अस्पताल  
 3. अन्य (विस्तार में बताएं) \_\_\_\_\_

### जीर्ण गुर्दे की बीमारी का ज्ञान

(निम्नलिखित प्रश्न आपसे आपके गुर्दे और गुर्दे की जीर्ण बीमारी से सम्बंधित ज्ञान के बारे में पूछते हैं। नीचे दिये गये वाक्यों के जवाब हाँ, नहीं, या मुझे नहीं पता के रूप में दें। जो जवाब आपको सही लगता है, उसके सामने वाले बक्से में  चिन्हित करें। कृपया सभी प्रश्नों के उत्तर दें।)

	हाँ	नहीं	मुझे नहीं पता
11. एक व्यक्ति के दो गुर्दे (किडनी) होती है।	<input type="checkbox"/> 1. हाँ	<input type="checkbox"/> 2. नहीं	<input type="checkbox"/> 3. मुझे नहीं पता
12. गुर्दे खून से बेकार उत्पादों और जहरीले पदार्थों को फिल्टर करते हैं।	<input type="checkbox"/> 1. हाँ	<input type="checkbox"/> 2. नहीं	<input type="checkbox"/> 3. मुझे नहीं पता
13. गुर्दे शरीर के जल संतुलन को बनाये रखते हैं।	<input type="checkbox"/> 1. हाँ	<input type="checkbox"/> 2. नहीं	<input type="checkbox"/> 3. मुझे नहीं पता
14. गुर्दे शरीर के रासायनिक(केमिकल) संतुलन को बनाये रखते हैं।	<input type="checkbox"/> 1. हाँ	<input type="checkbox"/> 2. नहीं	<input type="checkbox"/> 3. मुझे नहीं पता

15. गुर्दे रक्त दबाव को विनियमित( सही स्तर पर रखना) करने के लिए हार्मोन जारी करते हैं।	<input type="checkbox"/> 1. हां	<input type="checkbox"/> 2. नहीं	<input type="checkbox"/> 3. मुझे नहीं पता
16. गुर्दे लाल रक्त कोशिकाओं के उत्पादन में मदद करते हैं।	<input type="checkbox"/> 1. हां	<input type="checkbox"/> 2. नहीं	<input type="checkbox"/> 3. मुझे नहीं पता
17. गुर्दे मजबूत हड्डियों को विकसित करने के लिए हार्मोन जारी करते हैं ।	<input type="checkbox"/> 1. हां	<input type="checkbox"/> 2. नहीं	<input type="checkbox"/> 3. मुझे नहीं पता
18. मोटापा से गुर्दे की बीमारी हो सकती है ।	<input type="checkbox"/> 1. हां	<input type="checkbox"/> 2. नहीं	<input type="checkbox"/> 3. मुझे नहीं पता
19. अनियंत्रित उच्च रक्तचाप गुर्दे को नुकसान पहुंचा सकता है और जीर्ण गुर्दे की बीमारी कर सकता है ।	<input type="checkbox"/> 1. हां	<input type="checkbox"/> 2. नहीं	<input type="checkbox"/> 3. मुझे नहीं पता
20. मधुमेह (शुगर की बीमारी) गुर्दे को नुकसान पहुंचा सकता है और जीर्ण गुर्दे की बीमारी कर सकता है।	<input type="checkbox"/> 1. हां	<input type="checkbox"/> 2. नहीं	<input type="checkbox"/> 3. मुझे नहीं पता
21. गुर्दे का कार्य एक व्यक्ति की बढ़ती उम्र के साथ कम हो जाता है।	<input type="checkbox"/> 1. हां	<input type="checkbox"/> 2. नहीं	<input type="checkbox"/> 3. मुझे नहीं पता
22. परिवार के किसी सदस्य में गुर्दे की बीमारी होने से गुर्दे की बीमारी होने की संभावना बढ़ जाती है।	<input type="checkbox"/> 1. हां	<input type="checkbox"/> 2. नहीं	<input type="checkbox"/> 3. मुझे नहीं पता
23. सिगरेट धूम्रपान करने से गुर्दे की बीमारी हो सकती है ।	<input type="checkbox"/> 1. हां	<input type="checkbox"/> 2. नहीं	<input type="checkbox"/> 3. मुझे नहीं पता
24. शराब पीने से गुर्दे की बीमारी हो सकती है।	<input type="checkbox"/> 1. हां	<input type="checkbox"/> 2. नहीं	<input type="checkbox"/> 3. मुझे नहीं पता
25. दर्द निवारक दवाइयों की अधिक मात्रा का सेवन करने से गुर्दों को नुकसान पहुंचा सकता है।	<input type="checkbox"/> 1. हां	<input type="checkbox"/> 2. नहीं	<input type="checkbox"/> 3. मुझे नहीं पता
26. हर्बल दवाओं का उपयोग गुर्दे को हानि पहुंचा सकता है।	<input type="checkbox"/> 1. हां	<input type="checkbox"/> 2. नहीं	<input type="checkbox"/> 3. मुझे नहीं पता
27. कई बार जीर्ण गुर्दे की बीमारी के कोई लक्षण नहीं आते जब तक यह आखिरी चरणों तक नहीं पहुंच जाता।	<input type="checkbox"/> 1. हां	<input type="checkbox"/> 2. नहीं	<input type="checkbox"/> 3. मुझे नहीं पता
28. जीर्ण गुर्दे की बीमारी होने से अनियंत्रित उच्च रक्तचाप हो जाता है, जोकि विभिन्न अंगों (दिल, मस्तिष्क, आंखें)को नुकसान पहुंचा सकता है।	<input type="checkbox"/> 1. हां	<input type="checkbox"/> 2. नहीं	<input type="checkbox"/> 3. मुझे नहीं पता
29. उच्च रक्तचाप रोगियों को आहार संबंधी नमक प्रतिबंधों का पालन करना चाहिए ताकि भविष्य में जीर्ण गुर्दे की बीमारी से बचा जा सके ।	<input type="checkbox"/> 1. हां	<input type="checkbox"/> 2. नहीं	<input type="checkbox"/> 3. मुझे नहीं पता
30. उच्च रक्तचाप रोगियों को रोजाना व्यायाम करना	<input type="checkbox"/> 1. हां	<input type="checkbox"/> 2. नहीं	<input type="checkbox"/> 3. मुझे नहीं पता

चाहिए ताकि भविष्य में जीर्ण गुर्दे की बीमारी से बचा जा सके ।			
31. उच्च रक्तचाप रोगियों को धूम्रपान नहीं करना चाहिए ताकि भविष्य में जीर्ण गुर्दे की बीमारी से बचा जा सके ।	<input type="checkbox"/> 1. हां	<input type="checkbox"/> 2. नहीं	<input type="checkbox"/> 3. मुझे नहीं पता
32. उच्च रक्तचाप रोगियों को शराब नहीं पीना चाहिए ताकि भविष्य में जीर्ण गुर्दे की बीमारी से बचा जा सके ।	<input type="checkbox"/> 1. हां	<input type="checkbox"/> 2. नहीं	<input type="checkbox"/> 3. मुझे नहीं पता
33. उच्च रक्तचाप रोगियों को भविष्य में जीर्ण गुर्दे की बीमारी की रोकथाम के लिए अपनी उच्च रक्तचाप को कम करने वाली दवाइयाँ नियमित रूप से लेनी चाहिए।	<input type="checkbox"/> 1. हां	<input type="checkbox"/> 2. नहीं	<input type="checkbox"/> 3. मुझे नहीं पता
34. उच्च रक्तचाप रोगियों को नियमित रूप से अपने ब्लड प्रेशर की जाँच करवाना चाहिए।	<input type="checkbox"/> 1. हां	<input type="checkbox"/> 2. नहीं	<input type="checkbox"/> 3. मुझे नहीं पता
35. उच्च रक्तचाप रोगियों को भविष्य में गुर्दे की बीमारी से बचने के लिए नियमित रूप से गुर्दे की जांच (रक्त और मूत्र) के लिए जाना चाहिए ।	<input type="checkbox"/> 1. हां	<input type="checkbox"/> 2. नहीं	<input type="checkbox"/> 3. मुझे नहीं पता
36. जीर्ण गुर्दे की बीमारी की प्रारंभिक अवस्था का दवाइयों द्वारा इलाज किया जा सकता है।	<input type="checkbox"/> 1. हां	<input type="checkbox"/> 2. नहीं	<input type="checkbox"/> 3. मुझे नहीं पता
37. जीर्ण गुर्दे की बीमारी के प्रारंभिक दौर में जीवनशैली में परिवर्तन करके इलाज किया जा सकता है ।	<input type="checkbox"/> 1. हां	<input type="checkbox"/> 2. नहीं	<input type="checkbox"/> 3. मुझे नहीं पता
38. जीर्ण गुर्दे की बीमारी के आखिरी चरणों का इलाज डायलिसिस या गुर्दे प्रत्यारोपण से किया जा सकता है ।	<input type="checkbox"/> 1. हां	<input type="checkbox"/> 2. नहीं	<input type="checkbox"/> 3. मुझे नहीं पता
39. जीर्ण गुर्दे की बीमारी का इलाज ना किये जाये जाने से मौत हो सकती है।	<input type="checkbox"/> 1. हां	<input type="checkbox"/> 2. नहीं	<input type="checkbox"/> 3. मुझे नहीं पता

40. निम्नलिखित अनुभाग आपको जीर्ण गुर्दा रोग के लक्षणों के बारे में पूछता है।

***(विभिन्न प्रकार के लक्षणों नीचे सूचीबद्ध हैं। जीर्ण गुर्दे की बीमारी के लक्षणों के बारे में आपकी जानकारी के अनुसार कृपया अपना जवाब हाँ, नहीं, या मुझे नहीं पता है के सामने वाले वाले बक्सों को  चिन्हित करके दें।***

	हाँ	नहीं	मुझे नहीं पता
a) थकान और एकाग्रता की हानि	<input type="checkbox"/> 1. हां	<input type="checkbox"/> 2. नहीं	<input type="checkbox"/> 3. मुझे नहीं पता

b) भूख का कम होना	<input type="checkbox"/> 1. हां	<input type="checkbox"/> 2. नहीं	<input type="checkbox"/> 3. मुझे नहीं पता
c) नींद न आना	<input type="checkbox"/> 1. हां	<input type="checkbox"/> 2. नहीं	<input type="checkbox"/> 3. मुझे नहीं पता
d) मांसपेशियों में ऐंठन	<input type="checkbox"/> 1. हां	<input type="checkbox"/> 2. नहीं	<input type="checkbox"/> 3. मुझे नहीं पता
e) पैरों और एड़ियों में सूजन	<input type="checkbox"/> 1. हां	<input type="checkbox"/> 2. नहीं	<input type="checkbox"/> 3. मुझे नहीं पता
f) शुष्क और खुजली वाली त्वचा	<input type="checkbox"/> 1. हां	<input type="checkbox"/> 2. नहीं	<input type="checkbox"/> 3. मुझे नहीं पता
g) आँखों के आसपास सूजन	<input type="checkbox"/> 1. हां	<input type="checkbox"/> 2. नहीं	<input type="checkbox"/> 3. मुझे नहीं पता
h) लगातार पेशाब आना	<input type="checkbox"/> 1. हां	<input type="checkbox"/> 2. नहीं	<input type="checkbox"/> 3. मुझे नहीं पता
i) कुपोषण	<input type="checkbox"/> 1. हां	<input type="checkbox"/> 2. नहीं	<input type="checkbox"/> 3. मुझे नहीं पता

### जीर्ण गुर्दा रोग से संबंधित मनोवृत्ति

**जीर्ण गुर्दे की बीमारी के बारे में निम्नलिखित बयानों के लिए अपने दृष्टिकोण को 'सहमत'/'असहमत' या 'अनिश्चित' के सामने वाले बक्से को  चिन्हित करके व्यक्त करें**

	सहमत	असहमत	अनिश्चित
41. मुझे लगता है कि गुर्दे की बीमारी भारत में उच्च रक्तचाप रोगियों के बीच एक बड़ी समस्या है	<input type="checkbox"/> 1. सहमत	<input type="checkbox"/> 2. असहमत	<input type="checkbox"/> 3. अनिश्चित
42. अगर हम स्वस्थ जीवन शैली का पालन नहीं करेंगे तो भविष्य में हम गुर्दे की बीमारी हो सकती है	<input type="checkbox"/> 1. सहमत	<input type="checkbox"/> 2. असहमत	<input type="checkbox"/> 3. अनिश्चित
43. अगर मैं अपनी उच्च रक्तचाप को कम करने वाली दवाइयाँ नियमित रूप से न लूँ तो मुझे भविष्य में गुर्दे की बीमारी हो सकती है	<input type="checkbox"/> 1. सहमत	<input type="checkbox"/> 2. असहमत	<input type="checkbox"/> 3. अनिश्चित
44. मुझे लगता है कि गुर्दे की बीमारी को रोका जा सकता है	<input type="checkbox"/> 1. सहमत	<input type="checkbox"/> 2. असहमत	<input type="checkbox"/> 3. अनिश्चित
45. मुझे भविष्य में गुर्दे की बीमारी हो तो मैं चिंतित हो जाऊंगा	<input type="checkbox"/> 1. सहमत	<input type="checkbox"/> 2. असहमत	<input type="checkbox"/> 3. अनिश्चित
46. अगर मुझे अपने में जीर्ण गुर्दे की बीमारी के लक्षण	<input type="checkbox"/> 1.	<input type="checkbox"/> 2. असहमत	<input type="checkbox"/> 3.

और संकेतो का आभास होगा,तो मैं डाक्टर के पास जाऊँगा	सहमत		अनिश्चित
47. मेरा मानना है कि गुर्दे की बीमारी का इलाज महंगा है	<input type="checkbox"/> 1. सहमत	<input type="checkbox"/> 2. असहमत	<input type="checkbox"/> 3. अनिश्चित
48. मुझे लगता है कि डॉक्टरों और नर्सों को गुर्दे की बीमारी की रोकथाम के संबंध में अधिक जानकारी देनी चाहिए	<input type="checkbox"/> 1. सहमत	<input type="checkbox"/> 2. असहमत	<input type="checkbox"/> 3. अनिश्चित
49. गुर्दे की बीमारी होने से मेरे काम करने की क्षमता कम हो सकती है	<input type="checkbox"/> 1. सहमत	<input type="checkbox"/> 2. असहमत	<input type="checkbox"/> 3. अनिश्चित

### जीर्ण गुर्दा रोग से संबंधित अभ्यास

*( इन सवालों को ध्यान से पढ़े और कृपया निम्नलिखित प्रश्नों का जवाब हाँ, नहीं या मैं मुझे नहीं पता के सामने वाले बक्से को  चिन्हित करके दो )*

	हाँ	नहीं	मुझे नहीं पता
50. क्या आप बी.पी. जांच के लिए हर 2-4 सप्ताह में जाते हैं, भले ही आपको समस्या न हो?	<input type="checkbox"/> 1. हाँ	<input type="checkbox"/> 2. नहीं	<input type="checkbox"/> 3. मुझे नहीं पता
51. क्या आप अपने गुर्दे के लिए चेकअप के लिए साल में कम से कम एक बार जाते हैं?	<input type="checkbox"/> 1. हाँ	<input type="checkbox"/> 2. नहीं	<input type="checkbox"/> 3. मुझे नहीं पता
52. क्या आप एक डॉक्टर के पर्चे पर ही दर्द निवारक दवाएं लेते हैं?	<input type="checkbox"/> 1. हाँ	<input type="checkbox"/> 2. नहीं	<input type="checkbox"/> 3. मुझे नहीं पता
53. क्या आप हमेशा दर्द निवारक दवाओं की खुराक के बारे में अपने चिकित्सक द्वारा दिए गए निर्देशों का पालन करते हैं?	<input type="checkbox"/> 1. हाँ	<input type="checkbox"/> 2. नहीं	<input type="checkbox"/> 3. मुझे नहीं पता

54. कृपया अपनी डाइट के संबंध में सही विकल्प को  चिन्हित करे

*आप कितनी बार इन खाद्य वस्तुओं को खाते हैं, उसके अनुसार सही विकल्प को  चिन्हित करे*

कृपया, क्या आप बता सकते हैं कि कितनी बार आप आमतौर पर ये सब	रोज़ाना	प्रति सप्ताह 5	प्रति सप्ताह	प्रति सप्ताह	कभी नहीं	नहीं मालूम
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खाते हैं:		बार	3 बार	1 बार		
फल (ताजे फल और जूस सहित)	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6
सब्जियाँ	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6
उच्च वसा वाले डेयरी उत्पाद (दूध, पनीर, कॉटेज चीज़)	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6
मक्खन या घी या वनस्पति तेल	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6
तला हुआ खाना	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input type="checkbox"/> 6

55. निम्नलिखित में से कौन सी क्रियाएं आप अपने नमक के सेवन को प्रतिबंधित करने के लिए करते हैं?  
(अगर आप अपने नमक के सेवन को प्रतिबंधित करने के लए ये गतिविधियाँ करते हैं या नहीं करते हैं, तो हाँ या नहीं के सामने वाले बक्से को  चिन्हित करें)

	हाँ	नहीं
a) खाना बनाते समय कम मात्रा में नमक डालना	<input type="checkbox"/> 1. हाँ	<input type="checkbox"/> 2. नहीं
b) परोसे हुए भोजन पर नमक नहीं डालना	<input type="checkbox"/> 1. हाँ	<input type="checkbox"/> 2. नहीं
c) खाद्य वस्तुओं को खरीदने से पहले नमक के लेबल को देखना	<input type="checkbox"/> 1. हाँ	<input type="checkbox"/> 2. नहीं
d) प्रसंस्कृत खाद्य पदार्थों की खपत ना करना	<input type="checkbox"/> 1. हाँ	<input type="checkbox"/> 2. नहीं

56. निम्नलिखित प्रश्न उच्च रक्तचाप को कम करने वाली दवाइयाँ दवाओं के साथ आपके अनुपालन से संबंधित है.

(इन प्रश्नों को ध्यान से पढ़ें और कृपया उत्तर हाँ या नहीं के सामने वाले बक्से को  चिन्हित करके दें)

	हाँ	नहीं
क) क्या आप कभी अपने डॉक्टर द्वारा दी हुई दवाओं को लेना भूल जाते हैं?	<input type="checkbox"/> 1. हाँ	<input type="checkbox"/> 2. नहीं
ख) क्या आप कभी-कभार अपनी दवा लेने में लापरवाह हो जाते हैं?	<input type="checkbox"/> 1. हाँ	<input type="checkbox"/> 2. नहीं
ग) क्या आप कभी-कभार अपनी दवाओं को लेना बंद कर देते हैं जब आप बेहतर महसूस करते हैं?	<input type="checkbox"/> 1. हाँ	<input type="checkbox"/> 2. नहीं

घ) क्या आप कभी-कभार अपनी दवाओं को लेना बंद कर देते हैं यदि वे आपको बुरा महसूस कराती हैं?	<input type="checkbox"/> 1. हां	<input type="checkbox"/> 2. नहीं
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57. एक सामान्य सप्ताह में, क्या आप एक समय में कम से कम 30 मिनट के लिए मध्यम शारीरिक गतिविधियाँ करते हैं, जैसे कि तेज घूमना, साइकिल से चलना, बागवानी, टहलना, या कुछ और जिससे कि आपकी श्वास या हृदय की दर बढ़ जाती हो?

1. हां

2. नहीं (यदि नहीं, तो प्रश्न संख्या 59 पर जाएं)

58. एक सामान्य सप्ताह में कितने दिन तक आप ऐसी मध्यम शारीरिक गतिविधियों को एक समय में कम से कम 30 मिनट के लिए करते हैं?

1. सप्ताह में एक बार

2. एक सप्ताह में दो बार

3. एक सप्ताह में तीन बार

4. सप्ताह में तीन बार से अधिक

5. मुझे नहीं पता

59. क्या आपने कभी सिगरेट पिए हैं?

1. हाँ

2. नहीं (यदि नहीं, तो प्रश्न संख्या 62 पर जाएं)

60. क्या आप वर्तमान में सिगरेट पीते हैं?

1. हां

2. नहीं (यदि नहीं, तो प्रश्न संख्या 59 पर जाएं)

61. आप प्रति दिन कितनी सिगरेट पीते हैं जब आप धूमपान करते हैं?

\_\_\_\_\_ सिगरेट

62. औसत पर, कितनी बार आप शराब पीते हैं (कम से कम वाइन का 1 गिलास ; बियर की 1 कैन या बोतल; शराब , व्हिस्की या वोदका, या मिश्रित पेय का 1 शॉट) ?

1. कभी नहीं (यदि नहीं, तो प्रश्न संख्या 65 पर जाएं)
2. एक सप्ताह में एक कम ड्रिंक से कम
3. एक सप्ताह में एक से तीन ड्रिंक्स
4. एक सप्ताह में चार से छह ड्रिंक्स
5. एक सप्ताह में सात से तेरह ड्रिंक्स
6. एक सप्ताह में चौदह या उससे अधिक ड्रिंक्स

63. पिछले 30 दिनों के दौरान कितनी बार आपने शराब के 5 या अधिक ड्रिंक्स एक ही दिन में पीए थे? (यदि आपको ठीक से याद नहीं आ रहा, तो अनुमानित संख्या लखें)

\_\_\_\_\_ बार (यदि कोई नहीं है तो 0 लिखें)

64. क्या आपके जीवन में कभी ऐसा समय आया जब आपने किसी भी शराब वाले पेय के 5 या अधिक ड्रिंक्स अकसर रोज़ पिये हो?

1. हां
2. नहीं

65. निम्नलिखित अनुभाग आप में जीर्ण गुर्दे की बीमारी के जोखिम कारकों की उपस्थिति पर सवाल पूछता है.

(प्रश्नों को ध्यान से पढ़ें और कृपया उत्तर हां, नहीं या मुझे नहीं पता के सामने वाले बक्से को  चिन्हित करें)

	हाँ	नहीं	मुझे नहीं पता
क) क्या आपके परिवार के किसी भी सदस्य डायलिसिस के लिए जाते हैं या उनका गुर्दा प्रत्यारोपण हुआ है?	<input type="checkbox"/> 1. हां	<input type="checkbox"/> 2. नहीं	<input type="checkbox"/> 3. मुझे नहीं पता
ख) क्या आपके डॉक्टर ने आपसे से कहा है कि आपके रक्त में कोलेस्ट्रॉल (वसा) अधिक मात्रा में है?	<input type="checkbox"/> 1. हां	<input type="checkbox"/> 2. नहीं	<input type="checkbox"/> 3. मुझे नहीं पता

ग) क्या आपके डॉक्टर ने आपको कभी अतीत या वर्तमान में बताया कि आपके गुर्दों में संक्रमण है ?	<input type="checkbox"/> 1. हां	<input type="checkbox"/> 2. नहीं	<input type="checkbox"/> 3. मुझे नहीं पता
घ) क्या आपके डॉक्टर ने आपको कभी अतीत में या वर्तमान में बताया कि आपके गुर्दों में पथरी है?	<input type="checkbox"/> 1. हां	<input type="checkbox"/> 2. नहीं	<input type="checkbox"/> 3. मुझे नहीं पता
ड) क्या आपके डॉक्टर ने आपको मधुमेह (उच्च रक्त शर्करा) है?	<input type="checkbox"/> 1. हां	<input type="checkbox"/> 2. नहीं	<input type="checkbox"/> 3. मुझे नहीं पता

*आपकी भागीदारी के लिए धन्यवाद!*

## Consent form (English)

American University of Armenia

Institutional Review Board #1

### Oral Consent form

#### **Knowledge, attitude and practice of chronic kidney disease among hypertensive patients living in Kashipur region, Udham Singh Nagar ,India**

Hello, my name is \_\_\_\_\_. I am a trained interviewer working for Gurpreet Kaur who is a final year Masters of Public Health student at Gerald and Patricia Turpanjian School of Public Health at American University of Armenia. This university is located in Yerevan, Armenia. This school is conducting a study which aims to assess knowledge, attitude and practice of chronic kidney disease among hypertensive patients living in Kashipur region of Udham Singh Nagar district. Two largest private hospitals and the public hospital have been selected to recruit the participants for our study. Since you are visiting this clinic, I would like to invite you to this study. You will be one out of 246 participants who will participate in this study.

Your participation in the study is voluntary. There will be no risk if you agree to participate. Your participation only involves this interview today. If you agree to participate I will give you a questionnaire to complete which will take no more than 20 minutes. You may skip any question you think is inappropriate and stop it at any moment you want.. There will be no direct benefits for you if you participate in this project, but the information provided by you will be used to develop new interventions to improve knowledge and awareness of people of Udham Singh Nagar regarding prevention and progression of chronic kidney disease and better self-management practices among hypertensive patients. Your name will not be used in this study anywhere and the information that you will provide is confidential. Nobody will have access to this data except the research team. There is no penalty if you refuse to participate in this study.

If you have more questions about this study you can contact Dr. R K Sharma, head of R K Hospital at +91 9837033969. Also, you can contact Dr. Tsovinar Harutyunyan, the principal investigator (+374 60 61 25 92, [tsovinar@aua.am](mailto:tsovinar@aua.am)) for further questions. If you feel you have not been treated fairly or think you have been hurt by joining this study, please contact Varduhi

Hayrumyan (+374 60 61 26 17, [vhayrumyan@aua.am](mailto:vhayrumyan@aua.am)), Human Subject Protection Administrator at the American University of Armenia. If you agree to be involved in this study, could we continue?

Thank you

## Consent form (Hindi)

आर्मेनिया का अमेरिकी विश्वविद्यालय

मौखिक सहमति प्रपत्र

*उच्च रक्तचाप रोगियों के बीच गुर्दे की पुरानी बीमारी से सम्बंधित ज्ञान, मनोवृत्ति और अभ्यास*

नमस्ते, मेरा नाम \_\_\_\_\_ है। मैं एक प्रशिक्षित साक्षात्कारकर्ता हूँ। मैं गुरप्रीत कौर के लिए काम कर रहा हूँ जो कि गेराल्ड और पेट्रीसिया स्कूल ऑफ पब्लिक हेल्थ, आर्मेनिया के अमेरिकी विश्वविद्यालय में सार्वजनिक स्वास्थ्य के कोर्स में अंतिम वर्ष की छात्रा हैं। यह विश्वविद्यालय येरेवन, आर्मेनिया में स्थित है। यह स्कूल एक अध्ययन का आयोजन कर रहा है जिसका उद्देश्य उधमसिंह सिंह नगर जिले के काशीपुर क्षेत्र में रहने वाले उच्च रक्तचाप रोगियों के बीच जीर्ण गुर्दा रोग के ज्ञान, मनोवृत्ति और अभ्यास का आकलन करना है। हमारे अध्ययन के लिए प्रतिभागियों को भर्ती करने के लिए दो सबसे बड़े निजी((प्राइवेट) अस्पतालों और सरकारी अस्पताल का चयन किया गया है। चूंकि आप इस क्लिनिक में आये हैं, इसलिए मैं आपको इस अध्ययन के लिए आमंत्रित करना चाहूंगा। इस अध्ययन में जो 246 प्रतिभागियों भाग लेंगे, आप उन में से एक होंगे।

अध्ययन में आपकी भागीदारी आपकी इच्छा के अनुसार है। आपके भाग लेने के से आपको कोई जोखिम नहीं होगा। आपकी भागीदारी सिर्फ आज के साक्षात्कार तक ही सीमित होगी। अगर आप भाग लेना चाहते हैं तो मैं आपको एक प्रश्नपत्र दूँगा जिसको पूरा करने में अधिकतम 20 मिनट लगेंगे। जो भी सवाल आपको अनुचित लगता है, उसे आप छोड़ सकते हैं और आप किसी भी क्षण पर साक्षात्कार छोड़ सकते हैं। यदि आप इस अध्ययन में भाग लेते हैं तो आपके लिए कोई प्रत्यक्ष लाभ नहीं होगा, लेकिन आपके द्वारा प्रदान की गई जानकारी से उधमसिंह सिंह नगर में उच्च रक्तचाप रोगियों में जीर्ण गुर्दा रोग सम्बंधित ज्ञान और जागरूकता और बेहतर आत्म प्रबंधन में सुधार करने के लिए नए

उपायों का विकास किया जाएगा ताकि जीर्ण गुर्दा रोग की रोकथाम की जा सके। आपका नाम इस अध्ययन में कहीं भी इस्तेमाल नहीं किया जाएगा और आपके द्वारा प्रदान की गई जानकारी गोपनीय है। अनुसंधान टीम के अलावा इस जानकारी के उपयोग की अनुमति किसी और को नहीं है। अगर आप इस अध्ययन में भाग लेने से मना करते हैं तो कोई पेनल्टी नहीं है। यदि आपके इस अध्ययन के बारे में अधिक प्रश्न हैं, तो आप डॉ आर के शर्मा, जोकि आर के अस्पताल के प्रमुख है, उनसे संपर्क कर सकते हैं(+91 9837033969)। अगर आपके मन में और भी प्रश्न है तो आप डॉ सोविनार हारुतसुनियान, (+ 374 60612592, [tsovinar@aua.am](mailto:tsovinar@aua.am)) जो कि प्रमुख अन्वेषक है, उनसे संपर्क कर सकते हैं। यदि आपको लगता है कि आपके साथ अच्छा व्यवहार नहीं किया गया है या लगता है कि आप इस अध्ययन में शामिल होने से मानहानि हुई है, कृपया अमेरिकी विश्वविद्यालय आर्मेनिया में मानव विषय संरक्षण प्रशासक वारदुही हायरुम्यान (+374 60612617, [vhayrumyan@aua.am](mailto:vhayrumyan@aua.am)) से संपर्क करें। यदि आप इस अध्ययन में शामिल होने के लिए सहमत हैं, क्या हम जारी रख सकते हैं?

धन्यवाद !



