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A CROSS-SECTIONAL ASSESSMENT OF KNOWLEDGE, ATTITUDE AND PRACTICES OF CHRONIC KIDNEY DISEASE NGENERAL POPULATION OF PAKISTAN

Omer Mahmood Mumtaz[*1], Ahmad Ibne Yousaf [2], Saif Ullah Khan[3], Sadia Azad[4] Qurratulaen Raza[5], Azzah Khadim Hussain[6]

*[*1,3] Department of Pharmacy, Minhaj University, Lahore.*
[2] School of Human Nutrition and Dietetics / Academic Officer, Minhaj University, Lahore.
[4, 5]Margalla College of Pharmacy, Margalla Institute of Health Sciences.
[6]Department of Pharmacy, University of Central Punjab, Lahore

[*1]omermehmood.pharma@mul.edu.pk

ABSTRACT

This study aimed to assess the knowledge, attitude, and practices (KAP) regarding chronic kidney disease (CKD) among the general population of Lahore, Pakistan. A cross-sectional design was employed, and the study was conducted across five diverse locations in Lahore: Punjab University, corporate offices on Mall Road, Wapda Colony, Samanabad, and Sabzazar. A total of 250 participants, including both males and females aged 18 years and above, were included in the study. The analysis revealed a predominance of male participants (71.6%). The mean scores for knowledge, attitude, and practices were 5.02 ± 1.70, 3.79 ± 1.40, and 5.16 ± 2.00, respectively. Most participants demonstrated inadequate knowledge, negative attitudes, and poor practices regarding CKD. The findings indicate that the levels of knowledge, attitude, and practices related to CKD in the general population of Lahore were unsatisfactory. These results highlight the urgent need for educational seminars and community-based awareness programs to enhance public understanding and improve practices concerning CKD prevention and management.

Keywords: *Chronic Kidney Disease, Diabetes Mellitus, Global Health, Albuminuria, Glomerular Filtration Rate*

INTRODUCTION

Chronic Kidney Disease (CKD) is a significant global health concern characterized by kidney damage or a glomerular filtration rate (GFR) of less than 60 mL/min/1.73 m² for three months or more, regardless of the underlying cause. It is categorized based on GFR and albuminuria levels as per the Kidney Disease Improving Global Outcomes (Levey et al., 2005) guidelines. GFR classification includes five stages ranging from normal or high (≥90 mL/min/1.73 m²) to kidney failure (<15 mL/min/1.73 m²). Similarly, albuminuria is divided into categories: normal to mild increase (ACR <30 mg/gm), moderate increase (ACR 30–300 mg/gm), and severe increase (ACR >300 mg/gm) (KDIGO, 2012).

Several factors predispose individuals to CKD. A family history of CKD increases the risk of developing the condition (Tamizuddin, 2010). Men are more prone to developing end-stage renal disease (ESRD) compared to women (K I, 2005), 2014), and certain ethnic groups, such as African Americans, show a higher prevalence of ESRD than Caucasians (Stanifer, 2016). Renal function naturally declines with age, making the elderly

population particularly vulnerable (Nzerue et al., 2002). Additionally, lifestyle factors such as obesity, smoking, and exposure to nephrotoxins like heavy metals and excessive analgesics contribute significantly to CKD risk through mechanisms involving inflammation, oxidative stress, and endothelial dysfunction (Tamizuddin, 2010; Anees, 2014).

Diabetes mellitus and hypertension are among the leading causes of CKD globally (Falodia et al., 20112). Diabetes accounts for nearly half of ESRD cases in the United States, while hypertension contributes to 27% of ESRD cases in the USA and 28% in Turkey (Song EY et al., 2009). Acute kidney injuries and conditions such as nephrotoxicity further exacerbate the progression of CKD by causing chronic renal deterioration over time (Lea et al., 2002).

Knowledge, attitude, and practice (KAP) studies highlight significant gaps in public awareness regarding CKD. For example, a study conducted in Pakistan found that 73.68% of participants were aware of CKD stages and management, but 64.03% were unaware of the tools used to assess disease severity, such as the MDRD equation (Tamizuddin, 2010). Similarly, in Tanzania, only 11.3% of participants were diagnosed with CKD, but the overall knowledge score among the population was low, emphasizing the need for enhanced educational initiatives (Stanifer, 2016). In a study on healthcare providers in Pakistan, 62.6% of doctors were inadequately trained in nephrology, despite 90% demonstrating knowledge of CKD stages and management (Suleymanlar et al., 2011). This study aims to evaluate the knowledge, attitudes, and practices related to CKD among the general population of Lahore, with the goal of identifying gaps and improving disease awareness and management strategies.

Methodology

Study design, settings and participants of the CKD:

A cross-sectional study design was used and study was conducted at 5 different locations of Lahore city (Punjab University, corporate offices on mall road Lahore, wapda colony, Samanabad and Sabzazar) during a period of 5 months (January-May 2018). Adults (≥18 years) males and females were eligible for inclusionin the current study. Non-adults, people who were not willing to participate in the study, who had overt neurological disorder or cognitive impairment were excluded from the study.

Ethical considerations:

Protocol of the current study was reviewed and approved by the Human Ethical Committee of the Punjab University College of pharmacy, University of the Punjab. A Verbal informed consent was obtained from every individual prior to their involvement in the current study. All the individuals were made secure of the fact thattheir data and personal information will not be shared to third party and will be kept confidential.

Outcome Measurements:

Knowledge, attitude and practices of chronic kidney disease were assessed by a 34 items self-designed questionnaire. Questionnaire was designed after conducting thorough literature research. Part 1 had 9 questions to collect demographic details. Part 2 had 10 questions to evaluate knowledge and Part 3 had 7 questions to evaluateattitudes. Part 4 had 8 questions to evaluate practices of CKD. Each correct response to knowledge, attitude and practices was given 1 point whilezero point as given to every wrong response.

Statistical Analysis:

Continuous variables were expressed as mean ± standard deviation whereas categorical variables were presented as numbers and percentages. Comparisons of categorical variables were made by chi-square test whereas for continuous variables independent T-test and ANOVA was used. All statistical analysis was performed using SPSS version 22 for windows. A ‘p’ value of less than 0.05($p<0.05$) was considered statistically significant.

Results

A total of 300 individuals were approached by the researchers who were explained objectives and nature of the study and 250 willing individuals were recruited, with theresponse rate of 83.3%. The demographic data

of study population are shown in the table 1. The mean age was 30.81±12.12 with pre dominance of males belonging to urban areas. Majority of our study participants were Punjabi whereas pushtoon and Sindhi comprised of the minority.

Table 1: Demographic Data of Study Participants.

Characteristics	N (%)
Age (mean ± SD, years)	30.81 ± 12.12
Gender	
Male	179 (71.6)
Female	71 (28.4)
Locality	
Rural	71 (28.4)
Urban	179 (71.6)
Education	
Primary	43 (17.2)
Secondary	79 (31.6)
Graduation	128 (51.2)
Marital Status	
Married	112 (44.8)
Single	133 (53.2)
Divorced	5 (2.0)
Profession	
Government Employee	32 (12.8)
Private Employee	51 (20.4)
Self-Employed	51 (20.4)
Unemployed	116 (46.4)
Economic Status	
Lower Class	44 (17.6)
Middle Class	187 (74.8)
Upper Class	19 (7.6)
Nationality	
Punjabi	228 (91.2)
Sindhi	2 (0.8)
Pathan	20 (8.0)
Balochi	0 (0.0)
Religion	
Muslim	244 (97.6)
Non-Muslim	6 (2.4)

The Frequencies of correct and incorrect responses to the knowledge items are shownin Table 2.
The mean Knowledge score was 5.02 ±1.70 with approximately 42% individualshaving adequate knowledge regarding chronic kidney disease.

Table 2: Frequency of correct and in-correct response of knowledge

Items/Questions	Correct response N (%)	Incorrect Response N(%)
1	143(57.2)	107(42.8)
2	157(62.8)	93(37.2)
3	186(74.4)	64(25.6)
4	44(17.6)	206(82.4)
5	142(56.8)	108(43.2)
6	211(84.4)	39(15.6)
7	48(19.2)	202(80.8)
8	171(68.4)	79(31.6)
9	110(44.0)	140(56.0)
10	65(26.0)	185(74.0)

The frequency of positive and negative attitudes towards attitude questions has beenshown in Table 3. The mean attitude score was 3.79 ±1.4, with majority of participants having negativeattitude towards chronic kidney disease.

Table 3: Frequency of positive and negative attitudes:

Items/Questions	Positive attitude N (%)	Negative attitude N(%)
1	73(29.2)	177(70.8)
2	178(71.2)	72(28.8)
3	185(74.0)	65(26.0)
4	104(41.6)	146(58.4)
5	184(73.6)	66(26.4)
6	186(74.4)	64(25.6)
7	41(16.4)	209(83.6)

The frequencies of Good and Bad practices towards practices items has been shown intable 4. The mean practices score was 5.16±2.0 with majority of participants were found to have bad practices related to chronic kidney disease.

Table 4: Frequency of good and bad practices

Items/ Questions	Good practices N (%)	Bad practices N(%)
1	157(62.8)	93(37.2)
2	176(70.4)	74(29.6)
3	213(85.2)	37(14.8)
4	226(90.4)	24(9.6)
5	113(45.2)	137(54.8)
6	98(39.2)	152(60.8)
7	152(60.8)	98(39.2)
8	164(65.6)	86(34.4)

Discussion

This study was sought to assess KAP of chronic kidney diseases among general population of second largest metropolitan city of Pakistan (Amini et al.,2012). Our main results indicated that Pakistani public had in-adequate knowledge as well as negative attitudes and bad practices related to CKD. Our findings suggested that the satisfactory knowledge, attitude and practices (KAP) score of CKD in population was (41.6%), (33.6%) and (33.2%) respectively.

Contrary to the findings of previous studies, we found that the CKD knowledge of Pakistani population was far from adequate. However, our findings regarding the knowledge were comparable to the results of earlier study conducted in Pakistan. In our study, the attitude towards CKD was negative among the participants. By contrast, an earlier study conducted in Pakistan reported that urban population had significantly better attitudes as compared to the rural population .A previous study conducted in hospital in Pakistan revealed that medical students had negative attitudestowards CKD with 62.6% of doctors were not taught about nephrology during MBBS and according to 64.5% of the doctors, nephrology services were insufficient in their hospital.

Our study had few limitations .The study was conducted in only one city so our findings may not be the representative of the entire population of the country. Moreover, we used a convenient sampling method so we had disadvantages such as selection biasness, interviewer biasness and non- generalizability.

Conclusion

Our findings revealed that knowledge, attitude and practices among General population of Lahore, Pakistan are not satisfactory. Moreover, findings highlighted the needof educational seminars and community based programs to enhance the awareness among general population. Modest knowledge about the kidneys could serve as abasis upon which to build CKD educational programs to expand knowledge and understanding.

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