Knowledge, Self-Efficacy, Self-Management Behavior of the Patients With Predialysis Chronic Kidney Disease

Satchina Moktan[1, 2], Sirirat Leelacharas[1], Wonnapha Prapaipanich[1]

[1] Ramathibodi School of Nursing, Faculty of Medicine Ramathibodi Hospital, Mahidol University, Bangkok, Thailand

[2] Kathmandu University School of Medical Sciences, Dhulikhel, Nepal

Background: Chronic kidney disease (CKD) is an emerging global public health problem. Control of risk factors and prevention of complications can delay the progression to end-stage renal disease. Self-efficacy and self-management behavior in patients with predialysis CKD has not been investigated in Nepal.

Objectives: To describe knowledge of CKD, self-efficacy, and self-management behavior in patients with predialysis CKD and to determine the relationships between knowledge in CKD and self-efficacy with self-management behavior.

Methods: Ninety-seven predialysis CKD patients visiting nephrology clinic of a tertiary care hospital in Kathmandu, Nepal were recruited from November, 2016 to December 2016. Questionnaires comprised of sociodemographic data, CKD knowledge, self-efficacy, and self-management behavior questionnaires were used. Data were analyzed, using descriptive statistics and Pearson product moment correlation coefficient.

Results: The mean age of 97 participants was 45.67 years. There were 3 stages of CKD among participants: stage G4 (54.64%), stage G3 (42.27%), and stage G2 (3.09%), respectively. Hypertension was the most common comorbidity (81.44%) followed by diabetes mellitus (30.92%). Predialysis CKD patients had a moderate level of knowledge on CKD and self-efficacy and high level of self-management behavior. There were positive relationships between knowledge in CKD and self-management behavior ($r = 0.52$; $P < .05$), and between self-efficacy and self-management behavior ($r = 0.39$; $P < .05$).

Conclusions: This study suggested that education, counseling, workshop to increase the knowledge, self-efficacy, and self-management behavior might be helpful for the predialysis CKD patients. Healthcare providers can educate, motivate, and train the patients to practice self-management behavior to delay the progression of CKD.

Keywords: Knowledge, Self-efficacy, Self-management, Chronic kidney disease

Corresponding Author:

Wonnapha Prapaipanich

Ramathibodi School of Nursing,

Faculty of Medicine

Ramathibodi Hospital,

Mahidol University,

270 Rama VI Road, Ratchathewi,

Bangkok 10400, Thailand.

Telephone: +668 9965 8211

E-mail: wonnapha.pra@mahidol.ac.th

Introduction

Chronic kidney disease (CKD) is an emerging global public health problem. It is an irreversible abnormality in kidney structure or progressive loss of renal function, presenting for more than 3 months with implications for health.[1] According to the KDIGO 2012 Clinical Practice Guideline[1], the classification of the CKD severity is composed of 5 stages, using glomerular filtration rate (GFR): G1, normal or high GFR (> 90 mL/min/1.73 m^2); G2, mildly decreased GFR (60 - 89 mL/min/1.73 m^2); G3a, mildly to moderately decreased GFR (45 - 59 mL/min/ 1.73 m^2); G3b, moderately to severely decreased GFR (30 - 44 mL/min/1.73 m^2); G4, severely decreased GFR (15 - 29 mL/min/1.73 m^2); and G5, kidney failure or end stage renal disease (ESRD) with GFR < 15 mL/min/1.73 m^2.

Globally, hypertension and diabetes mellitus are the most common risk factors of CKD.[2] CKD is the twelfth leading cause of death and seventeenth leading cause of disability.[3] The global prevalence of CKD is estimated to be 11% to 13%.[4] In Nepal, kidney disease ranks as the tenth leading cause of mortality in World Health Rankings.[5] While having scanty data of CKD patients in Nepal, it is assumed that 10.6% of the Nepalese population have suffered from CKD.[6] While limited information about CKD is available in Nepal, an article regards CKD hotspots in South Asia reports about insufficient nephrology services in Nepal.[7] With limited facilities for patients with CKD in Nepal, an increase of awareness of early detection and timely management of kidney disease is necessary to hamper the progression of the CKD stage which is important, especially for patients with predialysis CKD. Unfortunately, it is not known how much knowledge patients with CKD have. Having sufficient knowledge might help patients have more confidences in taking care of their CKD problems.

Early diagnosis, control of risk factors, management, and prevention of complications can delay CKD progression to ESRD.[8] When the disease progresses to the end as ESRD, renal dialysis and transplantation are the treatment methods.[9] For a low-income country like Nepal, the cost of dialysis, which is expensive and lifelong payment, is unaffordable for the majority of Nepalese.[10] Hardly 10% of the patient suffering from ESRD in Nepal can afford their health care expenses.[6] Additionally, physical and mental functions decrease progression with the increase in CKD stages.[11, 12] To reduce physical, psychological and financial burdens, patients have to actively participate in self-management activities since initial stages of the CKD.

Active involvement of CKD patients in self-management behavior results in the achievement of the optimal health outcomes, delays in disease progression to ESRD, and prevents its complications.[12] Self-management behavior in CKD includes diet modification, fluid management, medication adherence, regular exercise, symptom management, and cessation of smoking and alcohol consumption.[13] Patients' comprehension of disease specific knowledge is a crucial aspect of successful self-management.[14] Likewise, patients with high self-efficacy can perform healthy behavior which leads to improvement in their health condition. Health care providers can disseminate the disease related information, motivate and support patients to adapt self-management behaviors, and delay CKD progression.[15] In order to have a good result of self-management, health care providers should evaluate current patients' knowledge, self-efficacy, and self-management behaviors.

The objectives of this descriptive correlational study were to describe the knowledge on CKD, self-efficacy, and self-management behavior in patients with predialysis CKD; to determine the relationship between the knowledge on CKD and self-management behavior; and to determine the relationship between self-efficacy and self-management behavior.

Methods

Subjects

The sample of this descriptive correlational study

were recruited from the nephrology outpatient department of a tertiary care hospital, located at Kathmandu, Nepal from November 2016 to December 2016. The sample size was recommended by Cohen[16] with the effect size of 0.30, power of 0.80, and alpha of 0.05. The optimal sample size thus was 88. However, due to the unexpected situation happening during the time of data collection, 10% of the sample was added.[17] Total 97 participants thus were included to the study. Eligible participants who met inclusion criteria were: 1) diagnosed with CKD for at least 3 months; 2) estimated GFR between greater than 15 mL/min/1.73 m^2 and less than 90 mL/min/1.73 m^2; 3) not diagnosed with mental and cognitive abnormalities; and 4) willing to participate in the study.

Research Instruments

The instruments for this study was the questionnaire composed of 4 parts.

Part I, sociodemographic data included participant's information.

Part II, CKD knowledge questionnaire (CKDKQ) was developed by the principal investigator (PI) and team with the aim to measure the knowledge of CKD on patients with predialysis CKD. It was composed of 32 item questions related to anatomy and physiology of kidney, pathophysiology, investigation, complication, general knowledge of disease management, diet, exercise, the control of risk factors, and the use of nonprescribed drugs in CKD. The total score was classified into low (0 - 16), moderate (17 - 24), and high (25 - 32) levels.

Part III, self-efficacy questionnaire (SEQ) was adapted from Curtin et al[18] after having the permission for modifying, translating, and applying of the instrument from the original developers. It was composed of 12 item questions related to self-efficacy of patients with predialysis CKD. The total score was classified into low (12 - 30), moderate (31 - 45), and high (46 - 60) levels.

Part IV, self-management behavior questionnaire

(SMBQ) was developed by the PI and team with the aim to measure self-management behavior of patients with predialysis CKD. It was composed of 28 item questions related to engagement in activities/treatment regimens, symptom management, and the use of recommended pharmacological therapies. The total score was classified into low (28 - 56), moderate (57 - 84), and high (85 - 112) levels. The content validity index (CVI) for CKDKQ, SEQ, and SMBQ were 0.99, 0.90, and 0.96, respectively. The Kuder-Richardson Formula 20 for reliability of CKDKQ was 0.87. Likewise, Cronbach's alpha for reliability of the SEQ and SMBQ were 0.89 and 0.72, respectively. Originally, all questionnaires were written in English version, which were later translated into Nepalese version. Then, they were cross-checked by translating into English.[19] The final refined questionnaires were used in Nepalese language.

Before conducting the study, permissions from the Institution Review Board (IRB) on Research Involving Human Subjects, Faculty of Medicine Ramathibodi Hospital, Mahidol University (MURA2016/530) and the IRB of National Academy of Medical Sciences (NAMS), Nepal (No. 351/2073174) were taken. Participants' serum creatinine (from the medical record) was calculated, using the Cockcroft and Gault formula[20] to classify the severity of CKD stages. This calculation formula was used for the research purposes for this study only.

Participants signed the consent forms and the interview took approximately 20 minutes to complete. After completion of data collection, all information was kept in the secure place. All data were entered in the statistical package software and only the PI could access with the secure password.

Statistical Analysis

Descriptive statistics (percentage, mean, and standard deviation [SD]) were used to analyze participant's demographic characteristics, knowledge of the CKD level, self-efficacy, and self-management behavior.

All involved variables were tested for normality, using Kolmogorov-Smirnov test to examine for normality before using Pearson product moment correlation coefficient to examine the relationships between knowledge of CKD level and self-management behavior and between self-efficacy and self-management behavior.

Results

In this study, most participants were males (76.28%) with the age ranged from 21 to 60 years (mean ± SD, 45.67 ± 11.40) and had been married (96.90%). The majority completed the secondary level of education (42.26%), engaged in agriculture (27.84%), earned below Nepalese Rupees (NPR) 10 000 (38.14%), were nonvegetarian (85.57%), and belonged to Newar ethnicity (25.77%). More than three-quarters of participants (77.31%) were Hinduism. More than half of participants (54.64%) were at the stage G4 of the CKD, 42.27% were at the stage G3 of the CKD, and only 3.09% were at the stage G2 of the CKD. However, the majority (80.41%) were unaware of their stage of the CKD. Hypertension was frequently reported as comorbidities (81.44%) followed by diabetes mellitus (30.92%) (Table 1).

The overall score of CKD knowledge of the predialysis patient ranged from 0 to 32 (mean ± SD, 23.17 ± 5.89), which indicated moderate level of knowledge. Participants scored high level of knowledge in subscales of investigation, general knowledge of disease management, and the control of risk factors. Likewise, participants scored moderate level of knowledge in subscales of anatomy and physiology, pathophysiology, complication, diet and water, exercise, and the use of other drugs. The score of self-efficacy of predialysis CKD patients ranged from 14 to 60 (mean ± SD, 39.43 ± 11.60) indicating the moderate level of self-efficacy. The overall score of self-management behavior of predialysis CKD patients ranged from 65 to 107 (mean ± SD, 87.63 ± 8.88) indicating high level of self-management behavior (Table 2).

Table 1. Sociodemographic Characteristics (N = 97)

Characteristic	No. (%)
Age, y	
21 - 30	14 (14.43)
31 - 40	20 (20.61)
41 - 50	24 (24.76)
51 - 60	39 (40.20)
Sex	
Male	74 (76.28)
Female	23 (23.72)
Marital status	
Unmarried	2 (2.07)
Married	94 (96.90)
Divorce	1 (1.03)
Ethnicity	
Newar	25 (25.77)
Chhetri	15 (15.46)
Dalit	14 (14.43)
Brahmin	13 (13.42)
Tamang	12 (12.37)
Others	18 (18.55)
Religion	
Hindu	75 (77.31)
Buddhist	17 (17.52)
Christian	5 (5.17)
Educational level	
Illiterate	23 (23.71)
Primary school	16 (16.52)
Secondary school	41 (42.26)
Higher secondary school	8 (8.24)
Higher than or equal to bachelor degree	9 (9.27)
Occupation	
Agriculture	27 (27.84)
Governmental officer	14 (14.43)
Non-governmental officer	26 (26.80)
Housewives	20 (20.62)
Others (business, tailoring)	10 (10.31)
Monthly family income, NPR	
≤ 10 000	37 (38.14)
10 001 - 20 000	35 (36.08)

Table 1. Sociodemographic Characteristics (N = 97) (Continued)

Characteristic	No. (%)
20 001 - 30 000	16 (16.50)
30 001 - 50 000	4 (4.12)
> 50 000	5 (5.16)
Dietary habits	
Vegetarian	14 (14.43)
Nonvegetarian	83 (85.57)
CKD stage*	
G2	3 (3.09)
G3	41 (42.27)
G4	53 (54.64)
Perception of CKD stage*	
G1	4 (4.12)
G2	4 (4.12)
G3	3 (3.09)
G4	7 (7.23)
G5	1 (1.03)
Unknown	78 (80.41)
Smoking	
No	75 (77.32)
Yes	10 (10.31)
Former smoker	12 (12.37)
Alcohol consumption	
No	67 (69.07)
Yes	10 (10.31)
Former drinker	20 (20.62)
Comorbidity**	
Hypertension	79 (81.44)
Diabetes mellitus	30 (30.92)
Hypertension and diabetes mellitus	27 (27.83)
Others (asthma, gastritis)	3 (3.09)

Abbreviation: CKD, chronic kidney disease

* The 5 stages of CKD is dependent on GFR levels: G1, GFR > 90 mL/min/1.73 m^2; G2, GFR 60 - 89 mL/min/1.73 m^2; G3, GFR 30 - 59 mL/min/1.73 m^2; G4, GFR 15 - 29 mL/min/1.73 m^2); and G5, GFR < 15 mL/min/1.73 m^2.

** One participant might have more than one disease.

When performing Pearson's correlational analysis, there was a positive relationship between knowledge on CKD and self-management behavior. Additionally, there was a positive relationship between self-efficacy and self-management behavior (Table 3).

Discussion

Participants' Sociodemographic Characteristics

The majority of the study were males with the monthly income lower than NPR 10 000 and had to spend NPR 15 000 per month for transportation, medicine, and investigation. This indicates that most CKD patients could not afford the cost of medical treatment. More than half of them were at the stage G4 of CKD but they did not know about the severity of CKD, which is similar with previous studies.[21, 22] This may indicate communication gaps between patients and health care providers and may affect self-management behavior. Regarding comorbidity, the majority had hypertension followed by diabetes mellitus which is relevant with previous findings.[23, 24] This is common for patients having vascular problems.

Knowledge on CKD

The findings of this study revealed that participants' CKD knowledge was moderate. This could be interpreted that most participants (59.77%) had a secondary school of educational level at least to higher than the bachelor degree. Prior studies had also documented that level of education had a positive influence on knowledge regarding health.[25, 26] Participants scored high level of knowledge on subscales of investigation, disease management, and the control of risk factors. These findings were as expected because CKD patients had regular visits when meeting the nephrologist with the series of blood, urine, and blood pressure examinations. Furthermore, most participants (83.5%) reported comorbidities, like hypertension and diabetes mellitus. This indicates that the patients learn health information not only from nephrologists but also from necessary health information related to self-management behavior.

Table 2.   Score of Responding for CKD Knowledge, Self-Efficacy, and Self-Management Behavior

Variable	Possible Range	Actual Range	Mean ± SD	%	Level
Overall CKD knowledge	0 - 32	0 - 32	23.17 ± 5.89	72.40	Moderate
Anatomy and physiology	0 - 3	0 - 3	2.02 ± 1.07	67.33	Moderate
Pathophysiology	0 - 4	0 - 4	2.49 ± 1.10	62.25	Moderate
Investigation	0 - 1	0 - 1	0.93 ± 0.24	93.00	High
Complication	0 - 2	0 - 2	1.21 ± 0.85	60.50	Moderate
Disease management	0 - 4	0 - 4	3.05 ± 1.09	76.25	High
Diet and water	0 - 8	0 - 8	5.49 ± 2.03	68.62	Moderate
Exercise	0 - 2	0 - 2	1.35 ± 0.90	67.50	Moderate
Control of risk factor	0 - 6	0 - 6	5.20 ± 1.13	86.66	High
Use of other drugs	0 - 2	0 - 2	1.40 ± 0.68	70.00	Moderate
Overall self-efficacy	12 - 60	14 - 60	39.43 ± 11.6	65.71	Moderate
Ask questions to a doctor	1 - 5	1 - 5	3.76 ± 1.47	75.25	High
Get a doctor to answer all questions	1 - 5	1 -5	3.65 ± 1.46	73.19	Moderate
Get a doctor to take chief health concerns seriously	1 - 5	1 - 5	3.81 ± 1.33	76.28	High
Get a doctor to do something about your chief health concern	1 - 5	1 - 5	3.73 ± 1.38	74.63	Moderate
Make a decision about what is best for health	1 - 5	1 - 5	3.41 ± 1.49	68.24	Moderate
Learned about disease	1 - 5	1 - 5	2.64 ± 1.62	52.98	Moderate
Searched for a ways to treat a symptom/side effect	1 - 5	1 - 5	2.62 ± 1.59	52.57	Moderate
Managed symptoms	1 - 5	1 - 5	2.61 ± 1.55	52.37	Moderate
Learned about kidneys function	1 - 5	1 - 5	2.62 ± 1.67	52.57	Moderate
Learned about kidney treatment	1 - 5	1 - 5	2.44 ± 1.58	48.86	Low
Adjusted activities to improve health	1 - 5	2 - 5	3.97 ± 0.96	79.58	High
Adjusted food intake to improve health	1 - 5	2 - 5	4.10 ± 1.00	82.06	High
Overall score of Self-management behavior	28 - 112	65 - 107	87.63 ± 8.88	78.24	High
Engagement in activities/treatment regimens	16 - 64	34 - 63	48.45 ± 6.56	75.70	High
Symptom management	8 - 32	13 - 32	23.93 ± 4.04	74.78	Moderate
Use of recommended pharmacological therapies	4 - 16	4 - 16	15.24 ± 1.98	95.25	High

Abbreviations: CKD, chronic kidney disease; SD, standard deviation.

Table 3.   Intercorrelations for Scores of Knowledge on CKD, Self-Efficacy, and Self-Management Behavior

Variable	Correlation Coefficient		
	Knowledge on CKD	Self-Efficacy	Self-Management Behavior
Knowledge on CKD	1	-	-
Self-efficacy	0.53[*]	1	-
Self-management behavior	0.52[*]	0.39[*]	1

Abbreviation: CKD, chronic kidney disease.

[*] The correlation coefficients were significant by t test at $P < .05$.

On the contrary, participants scored moderate level of knowledge on the subscales of anatomy and physiology, pathophysiology, complication, diet and water, exercise, and the use of other drugs. Participants were quite conscious that the kidney can clean blood and make urine, but nearly half of the participants did not realize that one kidney was enough to lead a normal life. Regarding diet and water, high level of knowledge were reported on avoiding high saturated fat, high salty food, and adding additional salt. It may be because most participants had hypertension. However, participants had a low level of knowledge regarding the control of protein, fluid, and electrolytes. Furthermore, some CKD patients and their family members asked the researcher to clarify the information on CKD diet and fluid while collecting data. These finding suggests that CKD patients were not clear about the given information regarding CKD diet and fluid intake. Regarding exercise, participants did not know about the type, level and time duration of exercise. In consistence with other studies, only 53.6% of participants knew about avoiding herbal medicines.[8, 22] Thus, the knowledge of the CKD is still needed.

Participants knew that they were suffering from a kidney disease but the majority did not know about the severity of their disease, which is consistent with previous studies as well.[21, 22, 27] This may indicate communication gaps between patients and health care providers. Some studies also mentioned that the health care practitioner had difficulty to unveil the information about CKD diagnosis and its severity to the patients and their family members due to the wish of not putting the patients in suffering.[26, 28] However, it is imperative for patients to understand their disease and its severity because it encourages the patient self-management adherence and helps to delay the deterioration of kidney function. Hence, benefits of informing the patient about the disease condition outweigh the stigma.

Self-Efficacy

In this study, the participant's level of self-efficacy was moderate. This finding is in contrast with a previous finding reporting participants' high level of self-efficacy.[18] Probably, there are three main reasons of this current study. Firstly, the majority (80.41%) did not know about the severity of their disease so they might not be motivated to learn about their disease, its treatments, and behavior modification in order to adapt a healthy lifestyle. Secondly, within a limited time, nephrologists provide counseling and education to the patient but the patient may or may not clearly understand what nephrologists want to deliver information. Thirdly, even though the patient comprehends physicians' advice, they may forget in the long term because some patients verbalized that they would not be able to follow up regularly due to financial or transportation barrier. Finally, only highly educated patients search appropriate reading materials like books, articles, and access internet to search relevant information and less than 10% of participants in this study had educational level more than or equals to bachelor degree level. These may be the reasons for predialysis CKD patients with the moderate level of self-efficacy.

Self-Management Behavior

The level of self-management behavior in this study was high. This finding is similar to a previous study done in different stages of CKD.[29] Furthermore, diabetic patients in Nepal have verbalized feeling of responsibility towards family, beliefs in god, and trust in doctor and medicine for practicing self-management behavior.[30] The same beliefs among participants might have played a role in scoring high level of self-management behavior. However, on the diet subscale, more than half of participants (60.82%) had eaten protein diet sometimes despite the need of moderate amount (0.8 g/kg/day in nondiabetic and 0.8 - 1 g/kg/day in diabetic patients) of daily protein intake.[31] A possible explanation may be the high cost of fish, meat, and egg in comparison to the vegetables in Nepal. Likewise, one-third of participants regularly ate phosphorous rich food despite the need of avoiding or limiting phosphorous diet in CKD patients.[32] It may

be because Nepalese food mostly includes dairy products like milk, yoghurt, and ghee. On the sub scale of the use of recommended pharmacological regimen, participants reported high level of score, which is contrary to the results of previous studies.[33, 34] However, this finding is questionable since 38.14% of the participant's family incomes were below NPR 10 000 per month and the cost of medication, transportation, and investigation per month in average is NPR 15 000[23] which is needed further exploration for future research. Additionally, there is no provision of health insurance from the Nepalese government and patients have to pay the cost of treatment and medicine by themselves.

Relationship Between Knowledge and Self-Management Behavior

Relevant with other studies, this study revealed a positive relationship between knowledge and self-management behavior of patients with predialysis CKD.[35-37] Chronic diseases like CKD require adherence to the treatment regimens for life-long and are costly unless the patients manage their chronic disease by themselves.[28] Knowledge is a key element or a prerequisite to understand the need for change in behavior and lifestyle practices. Through knowledge sharing, patients will be enlightened about their disease condition, its causes, sign and symptoms, treatment modalities, recommended lifestyle practices and complications. Health education and promotion can significantly uplift the patient's understanding about their disease condition, increase satisfaction, and motivate them to change their behavior towards the attainment of optimal health.[28]

Relationship Between Self-Efficacy and Self-Management Behavior

This study showed a positive relationship between self-efficacy and self-management behavior of patients with predialysis CKD. Self-efficacy according to Bandura's self-efficacy theory is that humans naturally engage in those activities in which they are confident to achieve the desired outcome.[38] On the other hand, self-management is a process of performing day-to-day activities to achieve optimum health in the management of chronic disease.[39] To practice self-management behavior in day-to-day life, a patient should have confidence, motivation, ability to cope with stress and ability to select a pathway that will lead towards their goals.

Conclusions

Overall, participants had moderate level of CKD knowledge and self-efficacy. Knowledge on CKD and self-efficacy had a positive relationship with self-management behavior. Nurses are at the front line of the health care system and can contribute to promote patient's health-related knowledge, self-efficacy, and self-management behavior. Nurse as an educator or counselor can provide an education on CKD, initiate a program or workshop to increase the level of knowledge on CKD, self-efficacy, and self-management behavior in patients with CKD.

Acknowledgements

References

1. International Society of Nephrology. KDIGO 2012 clinical practice guideline for the evaluation and management of chronic kidney disease--chapter 1: definition and classification of CKD. *Kidney Int Suppl.* 2012;3(1):19-62. doi:10.1038/kisup.2012.1064.

2. International Society of Nephrology. KDIGO 2012 clinical practice guideline for the evaluation and management of chronic kidney disease--chapter 2: definition, identification, and prediction of

CKD progression. *Kidney Int Suppl.* 2012;3(1):63-72. doi:10.1038/kisup.2012.6.

3. Murali R, Sathyanarayana D, Muthusethupathy MA. Assessment of quality of life in chronic kidney disease patients using the kidney disease quality of life-short form questionnaire in Indian population: a community based study. *Asian J Pharm Clin Res.* 2015;8(1):271-274.

4. Hill NR, Fatoba ST, Oke JL, et al. Global prevalence of chronic kidney disease – a systematic review and meta-analysis. *PLoS One.* 2016;11(7):e0158765. doi:10.1371/journal.pone.0158765.

5. World Health Organization. Nepal top 50 causes of death, 2014. http://www.worldlifeexpectancy.com/country-health-profile/nepal. Accessed April 5, 2019.

6. Hasan M, Sutradhar I, Gupta RD, Sarker M. Prevalence of chronic kidney disease in South Asia: a systematic review. *BMC Nephrol.* 2018;19(1):291 doi:10.1186/s12882-018-1072-5.

7. Abraham G, Varughese S, Thandavan T, et al. Chronic kidney disease hotspots in developing countries in South Asia. *Clin Kidney J.* 2016;9(1):135-141. doi:10.1093/ckj/sfv109.

8. Murphree DD, Thelen SM. Chronic kidney disease in primary care. *J Am Board Fam Med.* 2010;23(4):542-550. doi:10.3122/jabfm.2010.04.090129.

9. National Center for Chronic Disease Prevention and Health Promotion. National Chronic Kidney Disease Fact Sheet, 2017. https://www.cdc.gov/kidneydisease/pdf/kidney_factsheet.pdf. Accessed April 5, 2019.

10. The World Bank. GDP (current US$), 2016. https://data.worldbank.org/indicator/NY.GDP.MKTP.CD?locations=NP. Accessed April 5, 2019.

11. Agrawal HK, Jain D, Pawar S, Yadav RK. Health-related quality of life in different stages of chronic kidney disease. *QJM.* 2016;109(11):711-716. doi:10.1093/qjmed/hcw1054.

12. Welch JL, Johnson M, Zimmerman L, Russell CL, Perkins SM, Decker BS. Self-management interventions in stages 1-4 chronic kidney disease: an integrative review. *West J Nurs Res.* 2015;37(5):652-678. doi:10.1177/0193945914551007.

13. Havas K, Douglas C, Bonner A. Person-centred care in chronic kidney disease: a cross-sectional study of patients' desires for self-management support. *BMC Nephrol.* 2017;18(1):17. doi:10.1186/s12882-016-0416-2.

14. Zungu LI, Djumbe FR. Knowledge and lifestyle practices of hypertensive patients attending a primary health care clinic in Botswana. http://hdl.handle.net/10500/8684. Accessed April 5, 2019.

15. Larsan PD. *Lubkin's Chronic Illness: Impact and Intervention (Lubkin, Chronic Illness)*. 9th ed. Burlington, MA: Jones & Bartlett Learning; 2016.

16. Cohen J. A power primer. *Psychol Bull.* 1992;112(1):155-159. doi:10.1037/0033-2909.112.1.155.

17. Grove S, Burns N, Gray J. *The Practice of Nursing Research: Appraisal, Synthesis, and Generation of Evidence.* St. Louise, Missouri: Elsevier Saunders; 2013.

18. Curtin RB, Walters BA, Schatell D, Pennell P, Wise M, Klicko K. Self-efficacy and self-management behaviors in patients with chronic kidney disease. *Adv Chronic Kidney Dis.* 2008;15(2):191-205. doi:10.1053/j.ackd.2008.01.006.

19. Behling O, Law KS. Translating *Questionnaires and Other Research Instruments*. Thousand Oaks, CA: Sage Publications; 2000. doi:10.4135/9781412986373.

20. Cockcroft DW, Gault MH. Prediction of creatinine clearance from serum creatinine. *Nephron.* 1976;16(1):31-41.doi:10.1159/000180580.

21. McIntyre NJ, Fluck R, McIntyre C, Taal M. Treatment needs and diagnosis awareness in primary care patients with chronic kidney disease. *Br J Gen Pract.* 2012;62(597):e227-e232. doi:10.3399/bjgp12X636047.

22. Welch JL, Bartlett Ellis RJ, Perkins SM, et al. Knowledge and awareness among patients with chronic kidney disease stage 3. *Nephrol Nurs J.* 2016;43(6):513-519.

23. Mishra D, Koirala P. Status of chronic kidney disease patients registered in National Kidney Center, Banasthali, Kathmandu. *JMMIHS.* 2015;1(4):19-23. doi: 10.3126/jmmihs.v1i4.11997.

24. Paudel YP, Dahal S, Acharya T, et al. Biochemical profile of chronic kidney disease (CKD) paitents in various age and gender group subjects visiting Kist Medical College & Teaching Hospital, Kathmandu. *J Chitwan Med Coll.* 2013;3(2):36-39. doi: 10.3126/jcmc.v3i2.8441.

25. Devraj R, Borrego M, Vilay AM, Gordon EJ, Pailden J, Horowitz B. Relationship between health literacy and kidney function nephrology. *Nephrology (Carlton).* 2015;20(5):360-367. doi: 10.1111/nep.12425.

26. Wright JA, Wallston KA, Elasy TA, Ikizler TA, Cavanaugh KL. Development and results of a kidney disease knowledge survey given to patients with CKD. *Am J Kidney Dis.* 2011;57(3):387-395. doi:10.1053/j.ajkd.2010.09.018.

27. Whaley-Connell A, Shlipak MG, Inker LA, et al. Awareness of kidney disease and relationship to end-stage renal disease and mortality. *Am J Med.* 2012; 125(7):661-669. doi:10.1016/j.amjmed.2011.11.026.

28. Daker-White G, Rogers A, Kennedy A, Blakeman T, Blickem C, Chew-Graham C. Non-disclosure of chronic kidney disease in primary care and the limits to instrumental rationality in chronic illness self-management. *Soc Sci Med.* 2015;131:31-39. doi:10.1016/j.socscimed.2015.02.035.

29. Phua SH, Taha NA, Pau KB, Kong WY. Evaluation of self management behavior of chronic kidney disease patients. *J Pharm Pharmacol.* 2017;5:179-188. doi: 10.17265/2328-2150/2017.04.002.

30. Bhandari P, Kim M. Self-care behaviors of Nepalese adults with type 2 diabetes: a mixed methods analysis. *Nurs Res.* 2016;65(3):202-214. doi: 10.1097/NNR.0000000000000153.

31. National Kidney Disease Education Program (NKDEP). *Chronic Kidney Disease (CDK) and Diet: Assessment, Management, and Treatment.* https://www.niddk.nih.gov/-/media/Files/Health-Information/Communication-Programs/NKDEP/ckd-diet-assess-manage-treat-508.pdf. Revised April 2015. Accessed April 5, 2019.

32. Nutrition Services. Chronic Kidney Disease and Nutrition, 2011. https:// www.health.govt.nz/system/files/documents/topic_sheets/ckd-and-nutrition.pdf. Accessed January 24, 2019.

33. Burnier M, Pruijm M, Wuerzner G, Santschi V. Drug adherence in chronic kidney diseases and dialysis. *Nephrol Dial Transplant.* 2015;30(1):39-44. doi:10.1093/ndt/gfu015.

34. Sontakke S, Budania R, Bajait C, Jaiswal K, Pimpalkhute S. Evaluation of adherence to therapy in patients of chronic kidney disease. *Indian J Pharmacol.* 2015;47(6):668-671. doi:10.4103/0253-7613.169597.

35. Pagels AA, Hylander B, Alyarsson M. A multi-dimensional support programme for patients with diabetic kidney disease. *J Ren Care.* 2015;41(3):187-194. doi:10.1111/jorc.12114.

36. Qobadi M, Besharat MA, Rostami R, Rahiminezhad A. Health literacy and medical adherence in hemodialysis patients: the mediating role of disease-specific knowledge. *Thrita.* 2015;4(1):e26195. doi:10.25812/thrita.26195.

37. Shailendranath B, Ushadevi C, Kedlaya PG. Impact of knowledge, attitude and behavior among maintenance hemodialysis patients for adherence to dietary regimen - a single centre experience. *Int J Humanit Soc Sci.* 2014;4(12):257-262.

38. Bandura A. Self-efficacy: toward a unifying theory of behavioral change. *Psychol Rev.* 1977;84(2): 191-215.

39. Lorig K, Ritter PL, Villa FJ, Armas J. Community-based peer-led diabetes self-management: a randomized trial. *Diabetes Educ.* 2009;35(4):641-651. doi:10.1177/0145721709335006.

ความรู้ การรับรู้สมรรถนะแห่งตน และพฤติกรรมการจัดการตนเองของผู้ป่วยโรคไตเรื้อรังระยะก่อนการฟอกเลือด

แซทชินา มอคแทน[1, 2], สิริรัตน์ ลีลาจรัส[1], วรรณภา ประไพพานิช[1]

[1] โรงเรียนพยาบาลรามาธิบดี คณะแพทยศาสตร์โรงพยาบาลรามาธิบดี มหาวิทยาลัยมหิดล กรุงเทพฯ ประเทศไทย

[2] โรงเรียนวิทยาศาสตร์การแพทย์แห่งมหาวิทยาลัยกาฐมาณฑุ ดูลิเคล ประเทศเนปาล

Corresponding Author:

วรรณภา ประไพพานิช
โรงเรียนพยาบาลรามาธิบดี
คณะแพทยศาสตร์
โรงพยาบาลรามาธิบดี
มหาวิทยาลัยมหิดล
270 ถนนพระรามที่ 6
แขวงทุ่งพญาไท เขตราชเทวี
กรุงเทพฯ 10400 ประเทศไทย
โทรศัพท์ +668 9965 8211
อีเมล wonnapha.pra@mahidol.ac.th

บทนำ: โรคไตเรื้อรังเป็นปัญหาสุขภาพที่เกิดขึ้นทั่วโลก การควบคุมปัจจัยเสี่ยงและการป้องกันภาวะแทรกซ้อน สามารถชะลอการเป็นโรคไตวายระยะสุดท้ายในประเทศเนปาลยังไม่พบการศึกษาเกี่ยวกับการรับรู้สมรรถนะแห่งตน และพฤติกรรมการจัดการตนเองในผู้ป่วยโรคไตเรื้อรังระยะก่อนการฟอกเลือด

วัตถุประสงค์: เพื่ออธิบายความรู้ของโรคไตเรื้อรัง การรับรู้สมรรถนะแห่งตน และพฤติกรรมการจัดการตนเองในผู้ป่วยโรคไตเรื้อรังระยะก่อนการฟอกเลือด และการหาความสัมพันธ์ระหว่างความรู้เกี่ยวกับโรคไตเรื้อรัง การรับรู้สมรรถนะแห่งตน และพฤติกรรมการจัดการตนเอง

วิธีการศึกษา: กลุ่มตัวอย่างผู้ป่วยโรคไตเรื้อรังระยะก่อนการฟอกเลือด จำนวน 97 คน ที่เข้ารับการรักษาที่คลินิกไตของโรงพยาบาลในกรุงกาฐมาณฑุ ประเทศเนปาล ช่วงเดือนพฤศจิกายนถึงเดือนธันวาคม พ.ศ. 2559 โดยเก็บข้อมูลจากแบบสอบถาม ประกอบด้วย ข้อมูลส่วนบุคคล แบบสอบถามความรู้โรคไตเรื้อรัง แบบสอบถามการรับรู้สมรรถนะแห่งตน และแบบสอบถามพฤติกรรมการจัดการตนเอง จากนั้นวิเคราะห์ข้อมูลโดยใช้สถิติเชิงบรรยาย และวิเคราะห์ความสัมพันธ์โดยใช้สถิติ Pearson product moment correlation coefficient

ผลการศึกษา: กลุ่มตัวอย่างมีอายุเฉลี่ยเท่ากับ 45.67 ปี ส่วนใหญ่เป็นโรคไตเรื้อรังระยะ G4 (ร้อยละ 54.64) รองลงมาคือ ระยะ G3 (ร้อยละ 42.27) และระยะ G2 (ร้อยละ 3.09) ตามลำดับ โรคร่วมที่พบส่วนใหญ่คือ ความดันโลหิตสูง (ร้อยละ 81.44) และเบาหวาน (ร้อยละ 30.92) โดยพบว่า ผู้ป่วยโรคไตเรื้อรังระยะก่อนการฟอกเลือดมีความรู้โรคไตเรื้อรังและการรับรู้สมรรถนะแห่งตนในระดับปานกลาง และมีพฤติกรรมการจัดการตนเองในระดับสูง โดยมีความสัมพันธ์เชิงบวกระหว่างความรู้โรคไตเรื้อรังกับพฤติกรรมการจัดการตนเอง ($r = 0.52$, $P < .05$) และ การรับรู้สมรรถนะแห่งตนกับพฤติกรรมการจัดการตนเอง ($r = 0.39$, $P < .05$)

สรุป: การศึกษานี้แสดงให้เห็นว่า การได้รับการศึกษาและคำปรึกษา รวมทั้งการอบรมเชิงปฏิบัติการ เพื่อเพิ่มพูนความรู้โรคไตเรื้อรัง การรับรู้สมรรถนะแห่งตน และพฤติกรรมการจัดการตนเอง จะเป็นประโยชน์แก่ผู้ป่วย อีกทั้งบุคลากรทางการแพทย์สามารถให้ความรู้ แรงจูงใจ และอบรมผู้ป่วยให้ฝึกฝนพฤติกรรมการจัดการตนเองเพื่อชะลอความก้าวหน้าของโรคไตเรื้อรัง

คำสำคัญ: ความรู้ การรับรู้สมรรถนะแห่งตน พฤติกรรมการจัดการตนเอง โรคไตเรื้อรัง