Knowledge, Attitude and Practice Towards Chronic Kidney Disease (CKD) in Patients with Hypertension

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Abstract

Introduction: It is important for patients with hypertension to know chronic kidney disease (CKD); this will help in addressing and implementing healthy practices to reduce the risk of CKD. This study aims to describe the knowledge, attitudes and practices regarding the CKD in patients with hypertension.

Methods: This study used quantitative descriptive method with a cross sectional approach. The study was conducted in June 2019, with involved 135 hypertension patients at the Intern Medicine Polyclinic room, selected by consecutive sampling technique. Data collection was gained through a questionnaire that contains 3 sub-scales of measurements, namely knowledge scale, attitude scale and practice. Data analysis used frequency distribution.

Results: This study showed most respondents had knowledge about CKD 15.08 (range 5-22), it was showed positive attitude 36.50 (range 28-45) and it had healthy practices to prevention of CKD 23.11 (range 16-34). However, half of the respondents (65.2%) had incorrect information about the symptoms of CKD and did not show good practices related to a healthy lifestyle and conducting routine checks.

Conclusion: Health workers need to provide better health education to improve the knowledge of patients with hypertension towards chronic kidney disease.

Keywords

attitude; chronic kidney disease (CKD); hypertension; knowledge; practice

INTRODUCTION

Hypertension is a condition in which blood pressure in the blood vessels increases chronically. This can happen because the heart is working harder to pump blood to meet the body's oxygen and nutritional needs. If this condition is left unchecked, hypertension can interfere with the function of vital organs such as the kidneys and heart (Kemenkes RI, 2013). The World Health Organization records for2015 show around 1.13 billion cases of hypertension, which means 1 in 3 people in the world suffering from hypertension, largely in low- and middle income countries, including Indonesia. Hypertension ranks second out of the 10 most common diseases in outpatients in Indonesian hospitals (Ardiansyah, 2012). The overall prevalence of hypertension in Indonesia in 2013 was 25.8% (65,048,110 people) at age> 18 years and in West Java as much as 29.4% or about 13,612,359 people (Kemenkes.RI, 2014).

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High blood pressure will cause atherosclerosis in blood vessels and if this occurs progressively then blood flow to kidneys will decrease if blood pressure is not controlled, resulting in kidney failure (Marliani & Tantan, 2010).A study in India stated that proteinuria (4.8%) and microalbuminuria (5.3%) were found in patients with hypertension. A total 12.4% of hypertensive patients have chronic kidney disease, with more than 50% having minimal or no proteinuria (chronic non-proteinuria chronic kidney disease). Only 5.5% of non-hypertensive patients have chronic kidney disease. In total, 4.8% of patients with hypertension have eGFR <60 ml mim-1. It appears that hypertension is a strong independent predictor of chronic kidney disease (Anupama, Hegde, Uma, & Patil, 2017).

Chronic kidney disease is a global public health problem with an increased prevalence and incidence of kidney failure, and a poor prognosis. The prevalence of chronic kidney disease increases in line with the increasing number of elderly population and people with hypertension. About 1 in 10 of the global population has a certain stage of chronic kidney disease (Kemenkes RI, 2017). In 2017, Indonesia Renal Registry (IRR) recorded the highest cause of chronic kidney disease as hypertension, as much as 36%. Until now, hypertension is the main cause of chronic kidney disease in West Java, 1,583 patients. It can be seen that the risk factors for chronic kidney disease (CKD) are hypertension sufferers, as much as 25.8% of the population of Indonesia aged ≥ 18 years (Kemenkes.RI, 2014). At present the prevalence of chronic kidney disease in Indonesia is 2% (499,800 people) and in West Java as much as 0.3%. The results of the Global Burden of Disease study in 2010 showed that chronic kidney disease was the 27th leading cause of death in 1990 and increased to 18th in 2010. The annual death rate due to chronic kidney disease is 16.3% per 100,000 population in the world (Kemenkes RI, 2013).

It can be concluded from the explanation above that CKD leads to high cardiovascular morbidity and mortality. This means that health professionals must work hard to increase awareness and knowledge about its prevention and early detection (Stanifer et al., 2015). CKD can be prevented by influencing the knowledge and attitudes of hypertensive sufferers. Knowledge about the kidney and its physiology as well as signs and risk factors to prevent kidney disease will help hypertension sufferers in implementing healthy behaviors/practices. After getting information and being able to react positively, patients with hypertension can increase compliance with routine kidney function checks or early detection of chronic kidney disease.

Several researches have shown different results, according to Khalil and Abdalrahim, (2014), findings in Jordan indicated that most respondents have knowledge of kidney disease, but respondents with a family history of hypertension have a lower attitude toward prevention and early detection of CKD and the majority of participants did not realize the importance of finding health problems at an early stage. Research by Yusoff, Yusof, and Kueh, (2016) in Malaysia showed that as many as 61% of respondents had poor knowledge about chronic kidney disease, but had good attitudes and practices toward it, whereas research by Roomizadeh et al. (2014) in Iran and Sa'adeh et al. (2018) in Palestine found that some respondents knew hypertension as a risk factor for chronic kidney disease. The attitudes and behavior of almost all respondents who had risk factors stated that they had known that they had a high risk of developing chronic kidney disease. Research examining knowledge, attitudes and practices toward CKD were carried out in the Asian region, including developed countries such as Jordan and Malaysia; however, such research has not been conducted in Indonesia, especially in patients with hypertension and it is known that Indonesia is a developing country in the Asian region. According to the e Legatum Prosperity Index, (2017), Indonesia ranks 101, while Malaysia ranks 38th out of 149 countries in the world, based on physical health, mental health, health infrastructure and prevention efforts.

Based on this report and the data, it is indicated that the level of knowledge, attitudes and practices regarding chronic kidney disease in patients with hypertension in Indonesia is very important to know in order to reduce morbidity and mortality as CKD is one of the complications of hypertension. Researchers are interested in conducting research on knowledge, attitudes and practices regarding CKD in hypertension sufferers because such

research has not been conducted in Indonesia, especially in Tk II Dustira Hospital. It is hoped that hypertension sufferers will be able to recognize one of the complications of hypertension and be able to immediately make prevention and early detection of chronic kidney disease.

MATERIALS AND METHODS

Research design used in this study is quantitative descriptive. Time approach of data collection used cross-sectional approach. Variables in this study are knowledge, attitudes and practice about CKD among hypertensive patients in Tk. II Dustira Hospital.

The research population was hypertension patients at Dustira Hospital. The sample size was calculated using the G-Power version 3.1 application using the exact type family test with a statistical test = proportion: difference from constant (binominal test, one sample case), using an effect size of 0.15, α err prob of 0.5, power (1 -β err prob) of 0.95, with constant proportion of 0.65 Based on these calculations, the total sample of this study was 116 people. The inclusion criteria were subjects able to read and understand Indonesian, patient who suffer from hypertension for ≥ 1 year and are currently in medical treatment for hypertension, subjects are willing to be respondents. The exclusion criteria were pregnant woman and subjects with chronic kidney disease. The research uses consecutive sampling technique, which takes all respondents who meet the inclusion criteria until the sample size is met.

The used instrument for this research was the CKD Screening Index developed by Khalil (2014) to measure understanding of knowledge, attitudes and practices in the prevention program for chronic kidney disease in patients at high risk of developing CKD. The questionnaire was in English, so researchers translated the questionnaire into Indonesian (backward) and then translated it back to English (forward). This instrument was arranged based on 40 items divided into three subscales of questions, respondents could choose according to their choice by putting a check mark (√) on each answer. The knowledge subscale has 22 items regarding kidney function for three items, definition of kidney disease for two items, risk factors for four items, prevention for five items, signs and symptoms for six items, and treatment for two items with multiple choice of 'correct', 'wrong' and 'not sure'. Score 1 for the right answer, score 0 for the 'unsure' and wrong answer. Knowledge scores range from 0-16 (high scores indicate more is true and better). Attitude subscale has nine items to measure the attitude of patients to the ability to respond to the actions to be taken for the prevention of chronic kidney disease, as many as five items, and measures attitudes toward seeking help or assistance as many as four items. The assessment uses a 5-point Likert scale from 1 (strongly disagree) to 5 (strongly agree), and the total attitude score ranges from 9 to 45. The practice subscale has nine item questions that measure a healthy lifestyle, as many as six items, and compliance in maintaining health as many as three items. The assessment method used a 4-point Likert scale ranging from 1 (not at all) to 4 (always), with a total score ranging from 9 to 36.

In this study it was necessary to maintain research ethics on participants. As such, the researchers provided an explanation of the intent and process of research to be carried out to participants and also an explanation of the usefulness of research for the development of science. They ensured the informant was protected by paying attention to the aspect of freedom to determine whether the informant was willing or not to provide the information needed in the study. Respondents were asked to voluntarily sign an informed consent (consent form to be used as an informant) and assured that confidentiality of the informant's identity would be maintained and only used for research activities. During the research activities, informants were treated the same, by replacing the participant's name with a code. During data retrieval, the ease of providing information by informants was maintained, by choosing a comfortable space while providing information. This study has obtained ethical clearance in Tk II Dustira Hospital.

Data was analyzed using descriptive statistics presented by mean, standard deviation, and frequency.

Table 1. Characteristics of Respondents (n = 135)

Respondents' Characteristics	Total	Percentage
Sex		
Male	46	34.1%
Female	89	65.9%
Age		
18-39 Years Old	5	3.7%
40-59 Years Old	87	64.4%
>60 Years Old	43	31.9%
Duration of HTN treatment and suffering		
1-5 Years	79	58.5%
6-10 Years	38	28.1%
>10 Years	18	13.3%
Education		
Elementary	19	14.1%
Junior High	58	43%
Senior High	39	28.8%
College	19	14.1%

Table 2. Respondents' Knowledge, Attitude and Practices Regarding Chronic Kidney Disease (CKD) (n=135)

Variable	Mean ± SD	Range
Knowledge	15.08 ± 4.00	5 – 22
Kidney function	1.93 ± 1.094	0 – 3
CKD's definition	1.43 ± 0.512	0 – 2
Risk factors	2.79 ± 1.100	0 – 4
Prevention	3.83 ± 1.347	0 – 5
Symptoms	3.25 ± 1.687	0 – 6
Treatment	1.84 ± 0.438	0 – 2
Attitudes	36.50 ± 4.246	28-45
Response in finding help	16.60 ± 2.203	10 – 20
Response to preventive action on Chronic Kidney Disease (CKD)	19.80 ± 2.884	13 - 25
Practices	23.11 ± 3.296	16-34
Health lifestyle	13.60 ± 2.566	8 – 22
Adherence in keeping body's health	9.51 ± 1.326	5 – 12

Table 3. Frequency Distribution of the Most Incorrect Answers on Respondents' Knowledge about Chronic Kidney Disease (CKD) (n = 135)

Items	True n (%)	False n (%)
Chronic kidney disease makes urination more frequent.	47 (34.8)	88 (65.2)
Chronic kidney disease causes muscle cramps at night.	57 (42.2)	78 (57.8)
Chronic kidney disease is an incurable disease.	59 (43.7)	76 (56.3)
Chronic kidney disease makes my skin dry and itchy.	61 (45.2)	74 (54.8)
The kidneys release hormones into the blood to regulate blood pressure, produce red blood cells, and make strong bones	63 (46.7)	72 (53.3)

RESULTS

Table 1. shows that more than half the respondents were women with the total of 89 respondents (65.9%) and more than half of the respondents, (87, 64.4%) were 40-59 years old. More than half of respondents suffered from hypertension and had had hypertension treatment for 1-5 years (79 respondents, 58.5%). Regarding education level, nearly half of the respondents were junior high school (58, 43%).

Table 2 shows that the highest average value is in the attitude sub-variable. 36.50 (SD = 4.246) with the average value of the total sub-variable 74.69 (SD = 8.147), which means

Table 4. Frequency Distribution of Answers with the Most Negative Responses to Respondents' Attitudes Regarding Chronic Kidney Disease (CKD) (n = 135)

Items	Extremely disagree n (%)	Disagree n (%)	Doubt n (%)	Agree n (%)	Extremely agree n (%)
I will be shocked if I suffer from chronic kidney disease.	3 (2.2)	5 (3.7)	9 (6.7)	73 (54.1)	45 (33.3)
I will tell my friend about chronic kidney disease	6 (4.4)	7 (5.2)	34 (25.2)	55 (40.7)	33 (24.4)
I have to find the latest information about hypertension to improve my health.	1 (0.7)	9 (6.7)	20 (14.8)	72 (53.3)	33 (24.4)
I want to know my health problems at an early stage.	9 (6.7)	29 (21.5)	31 (23)	46 (34.1)	20 (14.8)
Doctors and nurses should have given me more information about kidney disease.	2 (1.5)	5 (3.7)	14 (10.4)	67 (49.6)	47 (34.8)

Table 5. Distribution of Frequency of Answers with the Most Negative Responses to Respondents' Practices Regarding Chronic Kidney Disease (CKD) (n = 135)

Items	Never n (%)	Sometime n (%)	Often n (%)	Always n (%)
I exercise regularly, like walking and jogging.	19 (14.1)	61(45.2)	48(35.6)	7(5.2)
I do routine checks even though I'm not sick.	**75 (55.6)**	**44 (32.6)**	12(8.9)	4(3)
I keep my weight within the normal range.	34 (25.2)	58 (43)	20(14.8)	23(17)
I manage my diet, like a low salt diet.	23 (17)	75(55.6)	30(22.2)	7(5.2)
I recognize abnormal changes in the body related to chronic kidney disease.	39 (28.9)	73 (54.1)	18 (13.3)	5 (3.7)

that most of the respondents, who are hypertension sufferers, have good knowledge, positive attitude and healthy practices related to chronic kidney disease. The average value of the highest item categories on the subscale of knowledge, attitudes and practices are the prevention items category 3.83 (SD = 1.347), 19.80 (SD = 2.884) in the category of responses to the prevention of chronic kidney disease (CKD), and 13.6 (SD = 2.566) there is a category of practice toward a healthy lifestyle.

Table 3 shows that more than half of the respondents (65.2%) answered incorrectly on the question "chronic kidney disease makes urination more frequent". While table 4 shows more than half of respondents (51.2%) responded negatively to the question "I want to know my health problems at an early stage" by answering strongly disagree (6.7%), disagree (21.5%) and doubt (23%). The data in table 5 show that most respondents (88.6%) responded negatively to the question "I do routine checks even though I am not sick" by answering never (55.6%) and sometimes (32.6%).

DISCUSSIONS

The data obtained by the research show that most respondents have knowledge about chronic kidney disease (CKD) and have a positive attitude and healthy practices related to healthy lifestyles to prevent CKD, because the average value of knowledge, attitudes and practices approaches shows a maximum score. The results of this study were in line with the study by Sa'adeh et al. (2018), which states that hypertensive patients with high knowledge scores and high attitude scores are significantly associated with high practice scores on the prevention of chronic kidney disease. Chronic kidney disease is a serious disease, but can be prevented with a three-level strategy, starting from education, modifying risk factors and screening. This is supported by Notoatmodjo (2012), who states that individuals who already know the stimulus or health object, then make an assessment or opinion of what is known, then the individual will carry out or practice what he knows or reacts to (considered good).

Other research in line with the study was carried out by Khalil and Abdalrahim (2014),

stating that it is important to promote a health education program regarding kidney and its function as well as symptoms and risk factors, one of which is increasing awareness of hypertension and understanding of the importance of examining kidney function. Therefore, people with hypertension can respond positively to the prevention of chronic kidney disease and then adopt healthy practices that lead to the desired results.

In this research, knowledge about chronic kidney disease in patients with hypertension is good and respondents have a high average value associated with prevention category items, 3.83 (range = 0-5).This is in line with research conducted by Sa'adeh et al. (2018) regarding the knowledge, attitudes and practices of hypertension patients toward the prevention and early detection of chronic kidney disease in Palestine, stating that more than half of respondents who were hypertensive patients had high knowledge with high scores, an average of 18.55 (out of 30). This is influenced by the age of respondents <65 years, high levels of education and suffering from hypertension> 1 year, as well as having more comorbidities and high drug use. So, respondents more often do routine checks at health care clinics and, therefore, they more often receive information and health education from health workers.

According to Notoatmodjo (2012) and Khalil and Abdalrahim, (2014), indicators can be used to determine the level of knowledge or awareness of the prevention of chronic kidney disease are knowledge of illness and disease, including knowledge about the causes of disease, signs and symptoms of the disease, how to treat, risk factors and how to prevent chronic kidney disease. Furthermore, the indicators also include knowledge about how to maintain health and how to live a healthy life, such as knowing the types of nutritious foods, the benefits of food for health, and the importance of exercise for health.

In this assessment, attitudes are measured to assess individual assessments and evaluation of responses to health practices (Khalil & Abdalrahim, 2014). According to Wawan and Dewi, (2010), there are two types of attitude characteristics, positive or negative. A positive attitude has a tendency to approach and expect certain objects; negative attitudes have a tendency to stay away, avoid, hate and dislike certain objects. The results of this research indicate that the attitude regarding chronic kidney disease in patients with hypertension is positive. Respondents had the highest average value in the category of response items to the prevention of chronic kidney disease. 19.80 (SD = 2.884). This research is in line with research conducted in Malaysia by Yusoff et al. (2016) which shows that the attitude of most respondents is good / positive toward risk prevention affected by chronic kidney disease. Respondents with a positive attitude will usually do something for their health. Respondents agreed/strongly agreed to maintain health, which they said was very important, looked for the latest information to improve health and felt it was important to carry out activities that would improve health.

Based on Sa'adeh et al.'s research (2018) in Palestine, a high attitude score is related to the respondents' age <65 years and high level of education. This is in line with this study that most respondents have a positive attitude toward chronic kidney disease with the characteristics of the majority of respondents (52.6%) having an age range of 40-59 years with junior high school education (43%) and high school (28.9%). This can be caused by good knowledge of the respondents. The respondents are hypertension sufferers who routinely undergo treatment. There is a high probability that information about the attitudes to be taken in maintaining the health of health workers is very high. According to Notoatmodjo (2012) indicators of practice in efforts to prevent chronic kidney disease, are actions (practices) related to the disease, are prevention of chronic kidney disease, treatment of disease and also maintenance and improvement of health in patients with hypertension.

The results of this research indicate that almost all respondents have healthy practices regarding chronic kidney disease because they approach the maximum score. Respondents had the highest average practice values in the 13.6 healthy lifestyle item category (SD = 2.566). This research is in line with research conducted by Yusoff et al. (2016) which states that, in patients who are at high risk of developing chronic kidney disease in Malaysian hospitals, in addition to having a positive attitude, they have healthy practices toward the risk of chronic kidney disease. In this

research it shows that most respondents have good knowledge about chronic kidney disease. According to Notoatmodjo (2010), knowledge will underlie one's beliefs about an object and will form a habit in one's attitude and practice/behavior. The knowledge of hypertension sufferers about chronic kidney disease will influence awareness on its prevention. It can be concluded that, the better/ higher the knowledge of hypertension sufferers about chronic kidney disease and its prevention, then hypertension sufferers will practice healthy/ healthy behaviors better in order to carry out maintenance and health improvement.

Based on this, the researcher realizes that with adequate information from health professionals will create good knowledge, then adopt a positive attitude and design healthy behaviors/practices for respondents to improve health related to the prevention of chronic kidney disease.

CONCLUSION

Most respondents in this study had knowledge relating to kidney function and about chronic kidney disease (CKD), which included risk factors, prevention, treatment and signs and symptoms. However almost half of respondents indicated misinformation about signs and symptoms of kidney function. Most respondents also had a positive attitude related to the response of hypertension sufferers to prevent health problems and to go to healthcare providers (health centers, clinics and hospitals) as an option when feeling the signs and symptoms of chronic kidney disease. While a small proportion of respondents had a negative attitude related to knowing health problems at an early stage, most showed healthy practices related to adherence in the treatment of hypertension. Half of the respondents indicated unhealthy practices related to a healthy lifestyle.

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Conflict of Interest

None.

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