

ORIGINAL ARTICLE

DETERMINANTS OF PATIENTS' SATISFACTION LEVEL REPORTING CHRONIC KIDNEY DISEASE CLINICS ESTABLISHED IN THAILAND

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Background: Patients' satisfaction is considered to be major predictor used for the assessment of the overall quality of the healthcare services. The current study aims to evaluate the patient's level of satisfaction reporting Chronic Kidney Disease clinics (CKDC) under the Policy of the Ministry of Public Health, Thailand providing the care for Chronic Kidney Disease (CKD) patients in the public hospitals by a multidisciplinary health professional team. **Methods:** A cross sectional study was conducted from January–December 2017. A two-stage sampling technique was adopted. A validated and reliable questionnaire was administered to 258 CKD patients during their visit to the CKD clinic from 134 public hospitals in 12 regional service providers in Thailand to elicit their satisfaction level. The satisfaction was scored and described into four aspects: services, place and facilities, health professional staff, and medical equipment and supplies. Data was analysed using frequency, mean, standard deviation, and Mann-Whitney U test and Kruskal-Wallis test were used to determine whether there was a significant difference among the variables in terms of patients' satisfaction. This study was ethically approved from the Ethics Review Committee of Thammasat University, Thailand (COA. No. 254/2560). **Results:** Most of the respondents 53.9% were female ranging from 21–88 years with a mean age of 64.69 years SD 13.14. The mean score of satisfaction for all CKD patients was 3.11±0.44 (out of 4) categorized in a good satisfaction level. The satisfaction level of the service aspect was least in comparison to others. Among all the variables a significant difference in satisfaction level was found in terms of duration of the disease ($\chi^2=10.52$, $p=0.03^*$). **Conclusion:** This study has demonstrated levels of satisfaction with the CKD clinic that could tailor for the significant implications and challenges in improving healthcare service policy further.

Keywords: Patients' satisfaction; Chronic kidney disease; Chronic kidney disease clinics

Citation: Taptagaporn S, Mongkolsomlit S, Rakkapao N, Kaewdok T, Wattanasoei S. Determinants of patients' satisfaction level reporting chronic kidney disease clinics established in Thailand. J Ayub Med Coll Abbottabad 2021;33(3):496–501.

INTRODUCTION

Chronic kidney disease (CKD) is considered as the major health problem globally. About 8 million cases of CKD are being reported in Thailand with an increase of approximately 7,800 people per year.¹ Moreover, the prevalence of chronic kidney disease has increased with age but few young patients can be affected with this problem.^{2,3} Thailand Kidney Disease Association is regularly registered patients based on the report of the renal replacement therapy (RRT).⁴ This delay in RRT for CKD patients could lead to renal failure, hence timely management is highly recommended. These patients have reported both physical and mental distress during this condition.

Thailand government has established separate chronic kidney diseases clinics (CKD clinic) under the ministry of public health as a first care level facility and also introduced various policies to provide care and the hospitalization services for CKD patients through well trained health professional team. These clinics are

focusing on providing health services for CKD patients from 3rd-5th stage including home visiting, treatment, and information guidelines for RRT. These clinics are managed by multidisciplinary health professional team including; physician and nursing staff providing standard treatment linked to risk behaviours, CKD knowledge, assessing behaviour and modification problems, screening, appointment, follow-up on missing appointments, coordinating referrals for hospital, visiting home team, pharmacist reviewing patient medication, providing knowledge about drug label reading, understanding medication and nutritionist consultation. During this problem, nutritional status of patients is an important parameter that could benefits for; providing knowledge about nutrition therapy focusing on reducing salty foods and eating low protein foods, and physiotherapist teaching and taking appropriate exercise and measuring muscle mass.⁵ These clinics are regularly providing services to the patients. Patient satisfaction is considered to be major predictor

used for the assessment of the overall quality of the healthcare services and also effects on clinical outcomes.^{6,7} Hitherto, there is scarcity of relevant literature in the context of Thailand and understanding the level of satisfaction and its determinants are the potential to improve healthcare services and health outcomes.⁸ This study aims to determine the factors affecting for Patients Satisfaction level reporting Chronic Kidney Disease Clinics established in Thailand. The study results could be used as basic information for improving quality service accordance with the actual needs of the patients which are the significant implications and challenges in improving healthcare service policy.

MATERIAL AND METHODS

This was a cross section study designed to explore factors and the patient's level of satisfaction with CKD clinic under the policy of the ministry of public health from January until December 2017. According to the Ministry of Public Health, Thailand was divided into 12 health care regions excluding Bangkok. The sampling method in this study was a two-stage sampling process based on simple random sampling. Firstly, 144 hospitals were randomly selected from each three level of the healthcare facilities; high level referral hospital, four middle level hospitals, and six first level hospitals from each region. Secondly, two CKD patients were selected from each clinic or hospital. Finally, the totals of 288 CKD patients were invited in the study and 258 patients from 134 clinics/ hospitals have accepted and were interviewed for this study with the response rate was 90% (Table-1).

A validated and reliable questionnaire of 4-point Likert scale was used which comprised of three sections including; information of the hospital, demographic information of respondents and patient's satisfaction aspects. Data were analysed and frequency, percentage, mean, and standard deviation were calculated. Mann-Whitney U test was used to determine whether there is any difference between the groups of gender in terms of patient's satisfaction level, and Kruskal-Wallis H test was used to determine whether there is a significant difference among the age groups, marital status, education, income, duration of the disease, CKD stage, level of hospital and the setting of the hospital in terms of patient's satisfaction level via SPSS version 23. The *p*-value less than 0.05 was considered statistically significant. The mean of each aspect and overall

satisfaction was categorized in; poor satisfaction (1–1.75), moderate satisfaction (1.76–2.51), good satisfaction (2.52–3.27), and high satisfaction (3.28–4.00).

This study was approved by the Ethics Review Committee of Thammasat University, Thailand (COA. No. 254/2560). The researchers explained the objectives, benefits, risks, and the rights of the patients and the written consent was obtained from the patients before to start an interview and study.

RESULTS

The response rate of this study was 89.58%, most of the respondents (53.9%) were female ranging from the age group of 21–88 years with a mean age of 64.69 years SD 13.14. Primary school level was seen among the majority of the respondents (60.9%). A majority of the respondents (67.1%) was married. More than half of the respondents (53.5%) has been being CKD patients for 1–3 years. Higher percentage of hospital setting was from rural area. Details about the demographic and information about CKD of the respondents are shown in Table-2.

The results showed that CKD patient's overall satisfaction was at the good level ($M = 3.11$, $SD = 0.44$). Place and facilities aspect was also shown at the good level ($M = 3.20$, $SD = 0.60$). The satisfaction of health professional staff and medical tool/ equipment and medicines/ supplies average score were at the high level ($M = 3.41$ and 3.35 ; $SD = 0.52$ and 0.56). However, services aspect was at the moderate level ($M = 2.48$, $SD = 0.55$). Distribution of satisfaction level of CKD clinic in each four aspects was categorized (The poor, moderate, good, and high) and shown in Table-3.

From the analysis of the differences in the mean satisfaction, it was found that only duration of being CKD had statistical difference with overall satisfaction at the significant level of .05. When testing each pair using the Mann-Whitney U, the duration of less than one-year group was statistically significant difference with 1–3 year, the 4-6 year, and the group equal or greater than 10 years (Mann-Whitney U = 628.50, 277.500 and 98.00). Group of 1–3 year was statistically significant difference with age group equal to or greater than 10 years at $<.05$ (Mann-Whitney U = 1350.50) level. The results of the analysis of differences in the mean satisfaction are shown in Table-4

Table-3: Patient satisfaction with CKD Clinics scores with four aspects (n=258)

Aspects	Patient's satisfaction scores (mean±SD)	Patient's satisfaction Level
Services	2.48±0.55	Moderate
Place and facilities	3.20±0.60	Good
Health professional staff	3.41±0.52	High
Medicines/ supplies	3.35±0.56	High
Overall satisfaction	3.11±0.44	Good

Table-1: Distribution of patients by the level of hospital from 12 regional health facilities

Regional health	No. of patient surveyed			
	High-Level Referral Hospital	Middle-Level Hospital	First-Level Hospital	Total
1	4	8	12	24
2	4	8	11	23
3	4	6	8	18
4	4	6	10	20
5	4	8	7	19
6	4	7	12	23
7	3	8	12	23
8	4	8	12	24
9	0	5	10	15
10	4	8	11	23
11	1	7	14	22
12	4	8	12	24
Total	40	87	131	258

Table-2: Patients' demographics and information about CKD (n=258).

	Variables	n (%)
Age (years)	20-29	
	30-39	3 (1.2)
	40-49	7 (2.7)
	50-59	30 (11.6)
	≥ 60	39 (15.1)
	[Mean Age= 64.69 SD 13.14] [Range= 21-88 years]	179 (69.4)
Gender	Male	119 (46.1)
	Female	139 (53.9)
Marital status	Single	21 (8.1)
	Married	173 (67.1)
	Widow/separated	64 (24.8)
Education	Lower than primary school	51 (19.8)
	Primary school	157 (60.9)
	Secondary school	18 (7.0)
	High school	14 (5.4)
	Vocational/diploma	10 (3.9)
Income (Baht)	Bachelor degree	8 (3.1)
	No income	58 (22.5)
	< 5000	96 (37.2)
	5000-10000	48 (18.6)
	10001-20000	41 (15.9)
	20001-30,000	8 (3.1)
CKD stage	>30000	7 (2.7)
	3a	51 (19.8)
	3b	68 (26.4)
	4	74 (28.7)
	5	65 (25.2)
Duration of the disease (year)	<1	14 (5.4)
	1-3	138 (53.5)
	4-6	68 (26.4)
	6-9	12 (4.7)
	≥10	26 (10.1)
Facility level and services	High-Level Referral	40 (15.5)
	Middle-Level	87 (33.7)
	First-Level	131 (50.8)
Hospital Setting	Urban	99 (38.4)
	Rural	159 (61.6)

Table-4: The differences of patient's satisfaction among various variables (Kruskal-Wallis Test) (n=258)

Age	20-29	30-39	40-49	50-59	≥ 60	χ^2	<i>p</i>	
Services	3.00±0.50	2.35±0.48	2.55±0.56	2.68±0.57	2.42±0.54	9.23	0.06	
Place and facilities	3.00±0.67	3.38±0.62	3.21±0.49	3.21±0.67	3.19±0.61	1.08	0.90	
Health professional staff	3.47±0.50	3.69±0.53	3.43±0.48	3.49±0.46	3.37±0.53	3.48	0.48	
Medicines/ supplies	3.42±0.52	3.57±0.51	3.39±0.62	3.46±0.49	3.31±0.57	3.61	0.46	
Overall satisfaction	3.22±0.52	3.25±0.46	3.15±0.44	3.21±0.41	3.08±0.44	3.77	0.44	
Gender	Male		Female		Mann-Whitney U	<i>p</i>		
Services	2.47±0.54		2.49±0.56		8075.00	0.74		
Place and facilities	3.15±0.61		3.25±0.59		7566.50	0.22		
Health professional staff	3.35±0.54		3.45±0.49		7304.00	0.09		
Medicines/ supplies	3.31±0.58		3.39±0.54		7503.00	0.18		
Overall satisfaction	3.07±0.46		3.15±0.42		7661.00	0.31		
Marital status	Single	Married	Widow/Divorced/separated		χ^2	<i>p</i>		
Services	2.67±0.63	2.48±0.55	2.43±0.52		2.89	0.24		
Place and facilities	3.35±0.51	3.19±0.61	3.18±0.61		1.11	0.57		
Health professional staff	3.54±0.46	3.39±0.54	3.39±0.47		1.23	0.54		
Medicines/ supplies	3.42±0.47	3.34±0.59	3.36±0.52		0.29	0.86		
Overall satisfaction	3.24±0.44	3.10±0.44	3.09±0.42		2.11	0.35		
Education	<5 year	5 year	8 year	10 year	12 year	14 year	χ^2	<i>p</i>
Services	2.57±0.58	2.46±0.54	2.40±0.57	2.55±0.57	2.68±0.46	2.28±0.63	4.46	0.49
Place and facilities	3.30±0.64	3.18±0.63	3.17±0.55	3.21±0.41	3.13±0.50	3.08±0.49	3.75	0.59
Health professional staff	3.49±0.53	3.36±0.52	3.48±0.48	3.53±0.42	3.38±0.50	3.53±0.44	3.46	0.63
Medicines/ supplies	3.40±0.59	3.34±0.56	3.32±0.55	3.50±0.47	3.18±0.59	3.28±0.60	2.92	0.71
Overall satisfaction	3.19±0.47	3.08±0.44	3.09±0.41	3.19±0.38	3.09±0.39	3.04±0.43	2.69	0.75
Income	No income	< 5000	5000-10000	10001-20000	20001-30,000	>30000		
Services	2.53±0.48	2.47±0.60	2.52±0.54	2.38±0.56	2.50±0.53	2.61±0.64	3.33	0.65
Place and facilities	3.07±0.64	3.26±0.61	3.23±0.57	3.26±0.60	3.21±0.53	3.05±0.52	4.58	0.47
Health professional staff	3.41±0.55	3.44±0.51	3.34±0.46	3.43±0.57	3.43±0.41	3.31±0.55	2.65	0.75
Medicines/ supplies	3.34±0.60	3.39±0.53	3.28±0.55	3.40±0.61	3.38±0.46	3.21±0.71	2.37	0.80
Overall satisfaction	3.09±0.43	3.14±0.45	3.09±0.41	3.12±0.47	3.13±0.35	3.05±0.54	0.73	0.98
CKD Stages	3a	3b	4	5	χ^2	<i>p</i>		
Services	2.42±0.65	2.39±0.52	2.59±0.56	2.51±0.47	5.76	0.12		
Place and facilities	3.18±0.60	3.18±0.63	3.27±0.59	3.17±0.60	1.84	0.61		
Health professional staff	3.33±0.55	3.40±0.52	3.46±0.47	3.41±0.54	1.65	0.65		
Medicines/ supplies	3.30±0.56	3.33±0.62	3.42±0.50	3.34±0.56	1.49	0.68		
Overall satisfaction	3.06±0.49	3.07±0.47	3.19±0.39	3.11±0.41	3.48	0.32		
Duration	<1	1-3	4-6	6-9	≥ 10	χ^2	<i>p</i>	
Services	2.32±0.58	2.45±0.55	2.54±0.52	2.48±0.48	2.60±0.63	3.90	0.42	
Place and facilities	2.81±0.90	3.21±0.58	3.22±0.60	3.08±0.53	3.42±0.51	7.28	0.12	
Health professional staff	2.99±0.69	3.40±0.45	3.45±0.56	3.43±0.58	3.54±0.50	9.13	0.06	
Medicines/ supplies	3.07±0.74	3.32±0.54	3.39±0.59	3.58±0.44	3.49±0.50	7.42	0.12	
Overall satisfaction	2.80±0.62	3.09±0.39	3.15±0.47	3.14±0.40	3.26±0.43	10.52	0.03	
Facility level and services	High-Level Referral	Middle-Level	First-Level	χ^2	<i>p</i>			
Services	2.48±0.55	2.43±0.55	2.52±0.56	1.13	0.57			
Place and facilities	3.29±0.60	3.21±0.56	3.17±0.64	0.97	0.62			
Health professional staff	3.43±0.51	3.47±0.51	3.36±0.52	2.38	0.30			
Medicines/ supplies	3.33±0.64	3.45±0.56	3.29±0.53	5.61	0.06			
Overall satisfaction	3.13±0.46	3.14±0.41	3.08±0.45	1.30	0.52			
Hospital setting	Urban	Rural	Mann-Whitney U	<i>p</i>				
Services	2.47±0.56	2.49±0.55	8018.00	0.79				
Place and facilities	3.23±0.59	3.19±0.61	7647.50	0.69				
Health professional staff	3.48±0.50	3.36±0.52	6936.50	0.09				
Medicines/ supplies	3.37±0.63	3.34±0.52	7473.50	0.48				
Overall satisfaction	3.14±0.45	3.10±0.43	7357.00	0.38				

DISCUSSION

Patients' satisfaction is essential to promote the quality of health services.⁹ This study assessed the level of patient satisfaction with the various aspects of healthcare. This is the vital information regarding

the outcome in the evaluation of CKD clinic policy under the Ministry of Public Health, Thailand. The findings showed the mean overall satisfaction of patients in CKD clinic as a good level. The mean of each four assessed aspects related to health

professional staff and medical tool/ equipment and medicines/ supplies were on a high level. This can be explained the CKD clinic was established under the policy and following guidelines for implementing integrated CKD clinic which had the potential on multidisciplinary health care professional team including physician, nurse, pharmacist, nutritionist, and physiotherapist. These all professionals can help giving the information regarding CKD as a team. The effective multidisciplinary care was also found in several studies which stated that it has improved the care and satisfaction of patients.¹⁰⁻¹³ There were also other studies founded that patients were satisfied with the information about the illness and health problems giving by health professional staff, and very satisfied with the attitude and behaviour of physicians and nurses.^{14,15} Another study from Australia showed that in-depth information, physician's attitude and the extent of communication to the patients with holistic approach were led to patients' satisfaction.¹⁶ Moreover, The score of medical tool/ equipment and medicines/ supplies aspect was also high. This might be due to the fact that the readiness the medical tool/ equipment and medicines/ supplies in the clinic were also effective, especially medicine for CKD patients. Place and facilities were at the good level. This aspect generally focused on the cleanliness, seating arrangement in the waiting area, and convenience of accessing to the services. It can be explained that most of CKD clinics were set up at the out-patient department and at the time of the clinics, especially in the first-level hospital, the patients were packed with other patients in the out-patient department. This might affect the satisfaction of this item. These findings comply with previous international studies that the cleanliness may influence patients' satisfaction.^{17,18} Services aspect was at the moderate level and the mean score was least in comparison to others. This might because of the large number of the CKD patients. Therefore, when the patients came to receive the service, they had long waiting time. Similar findings were also observed that causes of low score in patients' satisfaction were waiting time.¹⁸⁻²⁰

Patients with different age group, gender, marital status, education, income, CKD stage were not difference in satisfaction with CKD clinic. In contrast, many international studies explored a main factor affecting the patient's level of satisfaction with the healthcare service included age, gender, marital status, education, and income.²¹⁻²⁴ The current findings found no difference in satisfaction between those issues might because regardless of the people who come to receive the service with different gender, marital status, age, income, education and stage, they were

received the equal quality of the services served from the CKD clinic. Furthermore, there is no statistically significant difference between the level of hospital and hospital setting and the satisfaction with CKD clinic. This might be because the setting of policy that all hospitals had to establish the CKD clinic with the similar standard guidelines for implementing integrated CKD clinic. However, the duration of the disease had statistical difference with overall satisfaction. The mean score of satisfaction was shown that the patients who has longest duration of disease were more satisfied with CKD clinic services provided than the other age groups. This finding was inconsistent with other research, which found less satisfaction with a longer duration of disease.²⁵

Patients' satisfaction is essential for the quality measurement which can indicates the improvements in healthcare services, and it is important and can help improve the healthcare system performance.²⁶ These results reflected the CKD clinic patients' satisfaction that can tailor which aspect need to improve the quality of the clinic for better healthcare services and healthcare policy further.

CONCLUSION

Study concludes that an overall patients' satisfaction was good and the determinants like; availability of health professional staff, hospital facilities, long waiting time CKD clinic, standard guidelines and equipment supplies were main factors affecting patient's satisfaction in these clinics. Therefore, the recommendation for the further policy could be significantly concerned in the services and also place and facilities of the CKD clinic. These patients' experiences reflected a significant overview about CKD clinics and healthcare services and could tailor for the significant implications and challenges in improving healthcare service policy further.

ACKNOWLEDGMENTS

Authors would like to acknowledge the Health Systems Research Institute (60-000) and Faculty of Public Health, Thammasat University, Thailand.

AUTHORS'S CONTRIBUTION

All the authors contributed the substantial conception and design and did the data collection. SW, SM and TK did the data analysis. SW, ST, NR and TK did the data interpretation. SW drafted the successive drafts of the article. ST and SM critically revised and added the intellectual content to the article. All authors read and approved the final version of the article.

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Submitted: January 26, 2021	Revised: February 14, 2021	Accepted: March 31, 2021
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