PATIENT SATISFACTION WITH NURSE-LED CHRONIC KIDNEY DISEASE CLINICS: A MULTICENTRE EVALUATION

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SUMMARY

Background: There is growing international evidence that nurse-led chronic kidney disease (CKD) clinics provide a comprehensive approach to achieving clinical targets effective in slowing the progression of CKD. Across Queensland, Australia, these clinics have been established in many renal outpatient departments although patient satisfaction with these clinics is unknown.

Objectives: To measure patient satisfaction levels with CKD nurse-led clinics.

Method: This was a cross-sectional study undertaken at five clinics located in metropolitan, regional and remote hospitals in Queensland. Participants were >18 years of age (no upper age limit) with CKD (non-dialysis) who attended CKD nurse-led clinics over a six month period (N = 873). They completed the Nurse Practitioner Patient Satisfaction questionnaire which was modified for CKD.

Results: The response rate was 64.3 % (n = 561); half of the respondents were male (55.5 %), there was a median age range of 71–80 years (43.5 %) and most respondents were pensioners or retired (84.2 %). While the majority reported that they were highly satisfied with the quality of care provided by the nurse (83.8 %), we detected differences in some aspects of satisfaction between genders, age groups and familiarity with the nurse. Overall, patients' comments were highly positive with a few improvements to the service being suggested; these related to car-parking, providing more practical support, and having accessible locations.

Conclusion: In an era of person-centred care, it is important to measure patient satisfaction using appropriate and standardised questionnaires. Our results highlight that, to improve services, communication strategies should be optimised in nurse-led clinics.

KEY WORDS **Chronic kidney disease • Nurse-led clinics • Patient satisfaction**

BIODATA

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INTRODUCTION

Nurse-led clinics provide a health care service that is managed and organised by specialised nurses who monitor and support patients with certain diseases. Since the 1990s, nurse-led clinics have emerged as a model for ambulatory delivery of health care, usually in community settings (Pagels *et al.* 2008). Generally, the services provided by these nurses include health assessments to monitor chronic conditions, screening for complications and the provision of health education. Nurses employed in these clinics usually possess advanced competence and skills and practice as autonomous practitioners (Wong & Chung 2006). The efficacy of nurse-led clinics has been evaluated for a variety of medical conditions including diabetes, hypertension and cardiovascular disease (Gabbay *et al.* 2006), showing favourable associations with lifestyle changes and hospital admissions, as well as improvements in quality of life, disease related knowledge, adherence to treatment regimens, and self-management behaviours (Grady *et al.* 2000; Loftus & Weston 2001; Griffiths 2004). Nurse-led clinics have also been associated with high levels of patient satisfaction (Sandinha *et al.* 2012; Townsend 2014; Berglund *et al.* 2015).

Previously, nephrology nurses were largely employed to provide health care to patients with end stage kidney disease in hospital wards and dialysis units (Pagels *et al.* 2008; Neyhart *et al.* 2010; Fadem *et al.* 2011). With recent efforts to identify chronic kidney disease (CKD) at earlier stages, many aspects of CKD management lend themselves to involvement of a team approach, with the nurse potentially having a pivotal role (Peeters *et al.* 2014; Wierdsma *et al.* 2016). The effectiveness of nurse-led services in CKD has been previously studied. In a randomised control trial conducted in Canada (Canadian Prevention of Renal and Cardiovascular Endpoints Trial [CanPREVENT]), patients treated by the nurse practitioner-led multidisciplinary team showed improved overall patient survival (Goldstein *et al.* 2004) and had fewer days in hospital (Hopkins *et al.* 2011) although there was no difference in the rate of GFR decline (Barrett *et al.* 2011). Another randomised control trial conducted in the Netherlands (MASTERPLAN) showed that additional support provided by nurse practitioners slowed the decline of kidney function and led to fewer deaths (Peeters *et al.* 2014).

To address the increasing numbers of patients, Queensland Health (state department of health in Australia) established nurse-led CKD clinics which are based on the model of care where the nurse functions as a case manager, coordinating care pathways, collaborating with other multidisciplinary team-members and working from a holistic framework. All of the nurse-led services have medical practitioner (nephrologist) support although it varies between sites (onsite, weekly, monthly or less frequently), and the multidisciplinary team is also not consistent (not all renal services have a pharmacist, dietitian or social worker). The constant members of all CKD teams are nurses. The first nurse-led CKD clinic was established at the Princess Alexandra Hospital (Brisbane) in 2006. Currently there are more than 15 nurse-led CKD services across metropolitan and regional Queensland, Australia (a large state 3.5 times the size of Spain). Each of the services operates in a similar way with patients initially assessed by medical staff as being suitable for referral to the nurse-led clinic, which is normally located in the outpatient area of a hospital or a community health facility. During an appointment the nurse focuses on review of laboratory results, CKD complications, lifestyle counselling, support to adhere with treatment regimens, education about CKD and, if required, renal replacement therapy. Adjustments to medications and ordering diagnostic investigations can be done by nurse practitioners during the clinic appointment (as this level of nurse in Australia is legally able to undertake these activities; see Gardner *et al.* (2007). Other levels of nurses either follow a protocol or contact the medical practitioner. Each appointment is approximately 30–45 minutes in duration (individualised according to patient's needs). Ideally a patient is seen by the same nurse at each appointment, supporting the development of good patient/nurse rapport built over a number of years. The frequency of appointments is dependent on the stability, clinical and psychosocial needs of the patient. Following their clinic appointment all patients are contacted by the nurse to discuss the outcomes of any investigations undertaken and any alterations which may be necessary in their treatment regimen. Whilst data is routinely collected on clinical outcomes in these clinics, those with CKD are seldom consulted regarding the support they would like to receive (Havas *et al.* 2016) or the quality of service provided to them.

Determining patients' level of satisfaction with health care provides useful information on the quality of services and how to improve them (Rundle *et al.* 2004; Mpinga & Chastonay 2011). According to Rundle *et al.* (2004) satisfied patients are more inclined to adhere to their management plan. Recently the Australian Safety and Quality Framework (2015) has required health care organisations to engage with patients by using their experiences and expertise to ensure that health care is safe and of a high quality. However, the instruments used to measure satisfaction are mostly focused on traditional hospital in-patient treatment which has limited fit with specialised chronic disease outpatient services.

There have been few studies examining patients' satisfaction with renal health care. van der Veer *et al.* (2012) developed a tool to measure patient satisfaction with chronic dialysis treatment. Recently, Best & Bonner (2015) adapted an existing hospital-based patient satisfaction tool; however, this tool was designed for a specific highly structured medical-led clinic reviewing a narrow group of patients who were approaching dialysis. However, neither of these tools fitted the aim of this study, which was to measure the level of patient satisfaction with the nursing care at CKD nurse-led clinics.

METHODS

STUDY DESIGN

This was a cross-sectional study and participants were recruited from five CKD nurse-led clinics. The clinics were located in metropolitan, regional and remote locations across Queensland, Australia. Eligible participants were adults (>18 years of age; no upper age limit) with CKD (all non-dialysis) who attended the clinics during a six month period. Those with serious cognitive impairment were excluded. Participants were recruited for the study via communication with an administrative officer or nursing assistant at the clinic reception; nurses from the clinics were not involved in the recruitment process. Return of the questionnaire provided implied consent, as explained in the information sheet. This study received ethics approval for all sites (HREC/13/QPCH/120).

Data were collected using a two-part questionnaire incorporating demographic assessment and the modified Nurse Practitioner Patient Satisfaction Questionnaire (Gardner *et al.* 2010a), chosen for its appropriateness for the model of care used in the present study. The original version of the questionnaire was developed and validated in a range of in-patient and out-patient nurse practitioner-led services (including CKD clinics) during the Australian Nurse Practitioner Project in 2009 (Gardner *et al.* 2010b). It is designed for use with patients with diverse health problems, cared for by a range of nurse practitioners practicing in both metropolitan and rural areas to measure patient satisfaction with nurse practitioner-led services (Gardner *et al.* 2010b).

We modified the original questionnaire (with permission) because not all CKD clinic sites have a nurse practitioner, therefore, the phrase 'kidney nurse' replaced 'nurse practitioner'. The questionnaire comprised 32 core questions in five survey domains: basic patient demographics (age, gender, level of education, distance travelled, and number of visits to the service), access to services, experience with coordination of care, satisfaction and safety and quality of services provided (see Supplementary file 1). Each domain contained a mix of patient experience and patient satisfaction questions. For the patient experience questions, patients were asked to give factual responses to questions about what did or did not occur by selecting 'yes' or 'no'. For the patient satisfaction questions patient were asked to rate their response on a 5-point Likert scale. Questions regarding prescription of medications, referral for diagnostic tests and provision of treatments were excluded because these refer only to the scope of practice of a nurse practitioner. Questions were rephrased to explore the patient's knowledge of medications. Four additional questions were designed to measure other aspects of treatment satisfaction, including patients' knowledge and understanding of renal replacement treatment options. In this study, we calculated the Cronbach alpha coefficient score, using the specific satisfaction questions, to be 0.91.

Potential participants were provided with an information sheet, questionnaire and reply paid envelope on arrival to the clinic by an administrative officer. The questionnaire was completed prior to being seen by the nurse. Completed questionnaires were returned anonymously either into a box provided at the clinic reception or by post to the hospital. Data collection was staggered across sites between November, 2013 and December, 2014.

STATISTICAL ANALYSIS

Data (unweighted raw scores) were entered into a spreadsheet at each of the sites and then combined and imported into SPSS (IBM SPSS Statistics for Windows, Version 23.0. Armonk, NY: IBM Corp.). Descriptive statistics (mean, frequency) were calculated. Separate between-group analyses were performed for gender, number of visits (1–4, 5–9 and ≥10), age (16–25, 26–40, 41–50, 51–60, 61–70, 71–80, 81–90 and >90 years of age) and education level. For gender, number of visits and education comparisons, ordinal data were analysed by the Kruskal–Wallis test and nominal data were analysed by the Chi Square test, with post hoc pairwise comparisons between all conditions. Comparisons between age groups were performed by bivariate correlation analysis using Spearman's correlation coefficient (chosen due to the non-parametric data distribution). p-values < 0.05 were considered statistically significant.

RESULTS

DEMOGRAPHIC CHARACTERISTICS

Over a six month period, 873 surveys were distributed, with 561 patients (64.3 %) returning completed surveys. Table 1 shows

Variable	Frequency (%)	Variable	Frequency (%)
Age		Distance travelled to clinic?	
16–25	0.2	<5 km	23.3
26–40	0.9	<10 km	36.2
41–50	4.8	<50 km	34.2
51–60	7.9	>50 km	6.3
61–70	21.3		
71–80	43.5	Time CKD known	
		<3months	2.6
81–90	19.3	3–6months	3.3
91+	2.2	6–12months	7.1
		>12months	87
Gender			
Male	55.5		
Female	44.5	Main support person	
		Spouse/partner	54.2
Ethnicity		Relative	12
Aboriginal	4.7	Children	19.3
Torres strait islander	1	Friend	4.3
		Community	2.8
Neither aboriginal nor torres strait islander	93.1	More than one identified	7.3
Employment status		Main reason(s) for attending the clinic (as many as apply)	
Employed full time	6.1	Kidney health education	28.2
Employed part time	3.4	Pre-dialysis education	8
Unemployed	2	Dialysis	2.1
Pensioner/retired	84.2	Transplant	1.4
Student	0.5	Supportive care	18.4
Home duties	2.7	Clinic review	74.2
Other	1.1	Want more information	10.5
		Unsure	5.2
Highest Level of education			
Did not finish primary school	7.2		
Primary school only	24.3		
No intermediate or school certificate	17.1		
Leaving or higher school certificate	28.7		
TAFE	7.9		
College	8.8		
University	5.9		

Table 1: Demographic characteristics.

the demographic characteristics of the cohort. 55.5% of respondents were male and 65% were aged over 70 years. Almost half (48.6%) had no intermediate or school certificate and 24.3% had only completed primary school-level education. Most respondents were non-indigenous, with only 6% identifying as Aboriginal or Torres Strait Islander. 84.2% were retired or pensioners. As we were interested in studying patient satisfaction regardless of CKD stage, no further patient characteristics were collected.

ACCESS TO SERVICES

Data collection sites were spread across metropolitan and regional areas in Queensland. Surprisingly, 93.7% of patients travelled less than 50 km to a kidney clinic with only 6.3% travelling further than 50 km. The majority indicated they had access to timely kidney nursing care, with 80.0% indicating that they had to wait 30 minutes or less for their appointment.

Overall, this cohort was well known to the nurses, with 87.0% attending the nurse-led clinic for >12 months. 74.2% of patients had come to the clinic for a clinic review and 58.0% for an education session (patients were directed to select more than one option if applicable).

COORDINATION OF CARE

In terms of patient experience with coordination of care, 71.9% of patients strongly indicated that the nurses were informed and up to date about the previous care the patients had received for health related conditions and 83.8% stated that the nurse always provided clear instructions to manage their health. The majority

of patients (71.5%) indicated that the nurse recommended a treatment for a particular health problem or symptom.

SATISFACTION AND SAFETY

In relation to patient satisfaction with kidney nursing care, 78.6% of patients reported that the nurse always explained things in a way that was easy to understand and 87.0% indicated that the nurse always listened carefully to them, with enough time to discuss all health concerns. About 72.6% of patients indicated that they were encouraged to share in the decision making about their health and 78.3% were very comfortable talking to the nurse about any topics related to their health. About 90.7% indicated that they discussed their medications with the nurse and, of these, 92.8% were satisfied with the discussion.

QUALITY OF SERVICES PROVIDED

Although 74.4% of patients indicated that the nurse assisted with making changes to their habits or lifestyle to improve their health or prevent illness, when the question was rephrased to focus on individual risk factors there was evidence of limitations in the provision of lifestyle intervention. About 19.2% and 22.1% of patients indicated that the nurse talked to them about smoking and alcohol, respectively. Approximately half of the cohort reported that the nurse talked to them about weight loss (51.7%) and physical activity (56.2%). About 67.4% indicated that they had conversed with the nurse about nutrition, but only a quarter (24.9%) reported that their emotions were discussed.

The last four questions collected information on the renal replacement therapy options. Out of the 561 returned surveys, 179 patients for whom this was applicable responded to this section. About 68.7% reported having been given more than one treatment option. Of these, 84.2% indicated that they had been given enough information about each option and 78.4% indicated that the nurse had asked them which treatment they preferred. Among those who only had one treatment option to consider, the majority (78.3%) reported that they had received enough information about this option.

Overall, patients were highly satisfied with the quality of care provided (83.8%) and 89.4% indicated that the nurse definitely had a positive contribution to their wellbeing. Table 2 provides frequency results for all questions.

Two hundred and eighty two patients also provided comments about their experiences with attending the nurse-led CKD clinics. Overwhelmingly, the patients provided positive comments and the few negative comments were related to the waiting room facilities. Two patients commented: *"I know if I need help you are available to me!!"* and *"continue to provide the excellent service given during every visit."* The three main areas for improvement were: 1) car-parking, 2) practical support (e.g. cooking meals, etc.) and 3) having accessible locations (away from large hospitals; easier access for transport and parking).

BETWEEN-GROUP COMPARISONS

Between-group comparisons were conducted for all survey items. In general, male and female patients responded to the questions in a similar way, with the only differences between gender detected in questions about lifestyle factors smoking, alcohol and emotions. Males were more likely to report talking with the nurse about smoking (23.7% vs. 14.5%; $p = 0.01$) and alcohol (26.9% vs. 15.8%; $p = 0.003$), and females were more likely to report talking about emotions (21.8% vs. 30.3%; $p = 0.04$).

When comparisons were performed between the age groups (16–25, 26–40, 41–50, 51–60, 61–70, 71–80, 81–90 and >90 years), differences emerged in responses to questions about lifestyle factors. There was a negative correlation between age group and how likely patients were to discuss smoking ($r = -0.1$, $p = 0.001$), physical activity ($r = -0.2$, $p < 0.001$), nutrition ($r = -0.1$, $p = 0.007$), alcohol ($r = -0.1$, $p = 0.008$), weight loss ($r = -0.1$, $p = 0.002$) and emotions (-0.1. $p = 0.002$) with the nurse, as well as whether they were given help to change their lifestyle ($r = -0.1$, $p = 0.03$).

To investigate the effect of familiarity with the nurse on patient satisfaction, we assessed group differences after separating the cohort into three groups: those who had seen the nurse 1–4 times, 5–9 times and 10 or more times. While most questions were answered similarly between groups, patients who had been seen 5–9 times in the clinic reported being the most comfortable talking to the nurse about any topics related to their health ($p = 0.007$) and rated the nurse's knowledge of their medical history the most highly ($p = 0.01$). Patients who had been seen 1–4 times were the least likely to report talking about physical activity ($p = 0.03$), emotions ($p = 0.01$) and medications ($p = 0.02$) with the nurse. There were no effects of education level on patient satisfaction.

DISCUSSION

This study revealed that patients were highly satisfied with their experience of nurse-led clinics in Queensland, expressing

Question	Response	Frequency (%)	Question	Response	Frequency (%)
How often did the kidney nurse explain things in a way that was easy for you to understand?	Never	0.4	How comfortable do you feel in talking to the kidney nurse about any topics related to your health, even things that you might not tell anyone else?	Not comfortable at all	0.4
	Almost never	1.5		Not very comfortable	1.3
	Sometimes	2.0		Comfortable	8.4
	Usually	5.3		Quite comfortable	11.7
	Almost always	12.2		Very comfortable	78.3
	Always	78.6			
			Do you feel that the kidney nurse encouraged you to share in decisions made about your health?	Never	2.0
How often did the kidney nurse listen carefully to you?	Never	0.4		Almost never	0.6
	Almost never	0.0		Sometimes	2.9
	Sometimes	0.7		Usually	9.8
	Usually	2.6		Almost always	12.0
	Almost always	8.8		Always	72.6
	Always	87.5			
			How would you rate the kidney nurse's knowledge of your medical history?	Very poor	0.4
Did the kidney nurse recommend a treatment for a health problem or symptom that was bothering you?	No	28.5		Poor	0.0
	Yes	71.5		Fair	1.4
				Good	8.2
How often did the kidney nurse give you clear instructions about your health?	Never	0.4		Very good	27.0
	Almost never	0.0		Excellent	63.0
	Sometimes	1.5			
	Usually	4.8	Does the kidney nurse seem informed and up to date about the care you received from other health care providers?	Never	0.5
	Almost always	9.6		Almost never	0.5
	Always	83.8		Sometimes	1.4
				Usually	8.1
Did the kidney nurse give you the help you need to make changes in your habits or lifestyle that would improve your health or prevent illness?	No, definitely not	1.5		Almost always	14.8
	Yes, somewhat	12.2		Always	71.9
	Yes, definitely	74.4		I have not seen any other HCPs in the last 12 months	2.5
	I did not need help with this	11.9			

TABLE 2 (Continued)

Question	Response	Frequency (%)	Question	Response	Frequency (%)
			Did the kidney nurse discuss any medications with you?	No	9.3
Did the kidney nurse talk to you about smoking?	No	80.8		Yes	90.7
	Yes	19.2			
			If yes, were you satisfied with the discussion?	No, definitely not	0
Did the kidney nurse talk to you about physical activity?	No	43.8		Yes, somewhat	6.6
	Yes	56.2		Yes, definitely	92.8
				I did not need help with this	0.6
Did the kidney nurse talk to you about alcohol?	No	77.9			
	Yes	22.1	Does the kidney nurse make a positive contribution to your wellbeing?	No, definitely not	0.4
				Unsure	1.7
Did the kidney nurse talk to you about nutrition?	No	32.6		Yes, somewhat	8.5
	Yes	67.4		Yes, definitely	89.4
Did the kidney nurse talk to you about weight loss?	No	48.3	Overall, how would you rate the quality of care provided by the kidney nurse?	Highly unsatisfied	0.2
	Yes	51.7		Unsatisfied	0.2
				Neither satisfied nor unsatisfied	0.4
Did the kidney nurse talk to you about emotions?	No	75.1			
	Yes	24.9		Satisfied	15.5
				Highly satisfied	83.8
Did you think the kidney nurse spent enough time with you during your appointment?	Never	0.2			
	Almost never	0.7			
	Sometimes	0.4			
	Usually	4.9			
	Almost always	6.8			
	Always	87.0			

Table 2: Patient satisfaction with nurse-led CKD clinics.

favourable responses to questions about access to services, coordination of care, and satisfaction and safety in a similar way to previous studies into patient satisfaction with nurse-led clinics in other specialities (Sandinha *et al.* 2012; Townsend 2014; Berglund *et al.* 2015). Ample consultation time, in-depth specialised knowledge, listening to and understanding individual patient needs and a holistic approach were identified as factors contributing to patients' satisfaction. Patients deemed suitable for the CKD clinics are usually seen by the same nurse at each visit over a number of years. Access to a key healthcare professional for support and continuity of care is a key factor associated with patient satisfaction and self-care (Bergeson & Dean 2006).

However, we identified gaps in the quality of services provided at these clinics, with patients reporting that they received less than optimal communication from nurses about lifestyle factors such as smoking, alcohol, weight loss, physical activity, nutrition and

emotions. Reduced communication by nurses about smoking cessation and reducing alcohol consumption could be attributable to nurses being aware that not these factors may not have been relevant for certain patients (e.g. patient has never smoked). Being able to communicate about emotional well-being, however, should be widely applicable to all patients, and thus should be a priority for nurses when explaining the physical, psychological and social burden of CKD.

We also identified that overall there were few differences in patient satisfaction between male and female patients, and between patients from different age groups. Some questions, however, indicated a slight imbalance in patients' interactions with nurses, with females less likely to be asked about smoking and alcohol, and males less likely to be asked about their emotions. Similarly, older patients reported less discussion with the nurses about some factors than younger patients. It is unclear whether these differences were due to nurses making assumptions about the applicability of various topics based on age or gender, but these findings highlight the need for a comprehensive discussion of all aspects of their CKD management with all patients.

More than half of the participants in this study were aged over 70 years, and just under half had no intermediate or school certificate. Given that only 17% of older Australians aged (65–74) and 16% of those with year 10 or below education have been reported to have an adequate level of health literacy (Australian Bureau of Statistics 2006), the demographics of our respondents highlights that, in CKD nurse-led clinics, it is necessary to use a range of communication strategies to ensure patients understand their options and actively participate in their health care decisions.

Patient familiarity with the nurse also had an effect on some aspects of patient satisfaction, with those who had seen the nurse 1–4 times less likely to report the nurse discussed lifestyle factors than those who had seen the nurse 5 or more times. This may indicate that a discussion about lifestyle factors could have been a low priority for nurses during initial visits, taking place instead after patients had already been seen several times. There were also differences in how comfortable patients felt with the nurse and the nurse's knowledge of their medical history. Interestingly, patients seen 5–9 times scored higher than not only those seen 1–4 times but also those seen >10 times. This suggests that, while a certain level of familiarity with the nurse had a beneficial effect on patient satisfaction, many repeated visits may have introduced a sense of 'visit fatigue' which, combined with the progressive deterioration of health seen in CKD, may have had a negative impact on satisfaction.

LIMITATIONS

One possible limitation of this study is that patients tend to report approval of services in patient satisfaction surveys (Pearson *et al.* 1989). Whether due to acquiescence bias or social desirability bias, this may have led to inflated satisfaction scores. However, the anonymous nature of the survey should have minimised the latter. Further, patients may have self-selected for those well satisfied with their experience of nurse-led clinics, as these may have been highly motivated to return completed surveys. Patients in the higher range of kidney function, on the other hand, may have been less likely to complete surveys, as their appointments are less frequent; this may also have influenced results in this study. However, conducting the study across several sites, and achieving a good response rate and sample size, may have reduced these two previous limitations. As information on CKD stage and estimated glomerular filtration rate (eGFR) was not collected in this study, it was not possible to correlate these with satisfaction scores; this may of interest to perform in future studies.

IMPLICATIONS FOR PRACTICE

While patients are highly satisfied with most aspects of their experience of CKD nurse-led clinics, this study identified gaps in some aspects of their care. Firstly, there is room to improve the education provided and the strategies required to modify lifestyles. As CARI (Caring for Australasians with Renal Impairment) guidelines recommend modification of lifestyle and nutritional interventions for the management and slowing of the progression of CKD (Kidney Health Australia—Caring for Australasians with Renal Impairment 2012), nurses ought to ensure that all patients attending CKD nurse-led clinics receive sufficient consultation on these topics. While tailoring consultations to each individual is important, given that younger patients reported receiving more lifestyle advice than older patients a more standardised approach to imparting lifestyle information may be beneficial. Further, as we showed that patients who had fewer clinic visits received less lifestyle consultation, this should be made a priority during, if possible, the initial visit. Secondly, nurses should not only focus on the physical aspects of CKD related to lifestyle modifications and adherence to medication. They ought to routinely assess psychosocial well-being and to implement early, brief interventions that better support patients' emotional wellbeing.

Finally, there is also a need for nurses to ensure that for all patients—regardless of age or gender—judgements about whether information, education or support are less relevant should not be made until a thorough assessment has been made.

CONCLUSION

This study found that patients were highly satisfied with nurse-led clinics in the management of their ongoing CKD care, and also identified important gaps between evidence and practice in some aspects. Our findings provide a basis for stakeholders to continue to work collaboratively to implement and evaluate improvements.

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CONFLICTS OF INTEREST

No conflict of interest has been declared by the authors.

AUTHOR CONTRIBUTIONS

AB, SC: Conceived and conducted the study. SC, AB, SE, CS, BT, AG, LB: Modified the instrument. SC, SE, CS, BT, AG, LB: Collected the data. AB, KH, LP: Conducted the data analysis. SC, AB, LP: Drafted the manuscript. All authors reviewed the manuscript and approved its submission.

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