

PERCEPTION AND PRACTICE OF PHYSICAL ACTIVITY AND EXERCISE COUNSELLING IN RENAL CARE TEAM IN NIGERIA

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Abstract Introduction. Physical activity (PA) in Chronic Kidney Disease (CKD) requires positive attitude and practice among the renal care team (RCT). The study examined the perceptions and practices of PA and exercise counselling among the RCT in Nigeria.

Methods. The study is 24-item cross-sectional survey on exercise counselling practices on 281 renal care practitioners (females = 149, males = 132; mean age = 42 ±10 years; renal physicians (39%), nurses (50%), and others (11%)) at the 30th annual conference of NANCONF.

Results. Forty two percent did not exercise regularly and 58% engaged in moderate-to-vigorous intensity. 92% agreed sedentary lifestyle is a health risk; 96% agreed that increasing PA is beneficial; and 81% reported that PA is beneficial for patients. 35% recommended PA; 17% referred patients to exercise professionals and 11% facilitated implementation of PA. Barriers to the implementation of PA were lack of motivated patients (75%), resources (69%), funds (66%), and motivated staff (63%).

Conclusion. Perceptions and practices of PA and exercise counselling in the RCT in Nigeria is promising with inconsistencies between beliefs in the benefits of PA and actual implementation. Addressing the reported barriers could improve the recommendation of PA in patient's management.

Key words physical activity, exercise counselling, perception and practice, renal care team, Nigeria

Introduction

Physical activity (PA) influences health through the prevention, control and management of diseases. The recommendations (US Department of Health and Human Services, 2008; World Health Organisation, 2010) emphasise the importance of regular moderate-to-vigorous intensity PA on most days or alternate days of the week with a reduction in sedentary time to the wellbeing. Most health recommendations specifically emphasize minimizing sedentary lifestyle, which is a universal modifiable risk factor for the occurrence and progression of cardiovascular and long-term metabolic diseases (hypertension, type 2 diabetes, and CKD). Chronic kidney disease (CKD) refers to the damage of the kidney with glomerular filtration rate (GFR) less than 60 mL/min/1.73 m² for at least three months (Chukwuonye et al., 2018). Patients with CKD often experience physiological dysfunctions leading to muscular atrophy, which may be caused by the imbalance between synthesis and degradation of muscle protein, amino acid depletion, chronic inflammation, malnutrition syndrome, change in capillary perfusion, peripheral neuropathy and physical inactivity (Tomich, Bernardino, Ferreira, 2014). Patients with CKD experience exercise intolerance-induced anemia and hypervolemia such that treatment of these conditions does not improve exercise tolerance (Kosmadakis et al., 2010). The exercise intolerance causes sedentary lifestyle, which leads to higher degeneration of physical and mental health (Hopman et al., 2009; Tomich et al., 2014). Based on this, physical activity is regarded an important factor in the primary treatment of CKD.

Numerous studies have shown that exercise is safe and beneficial for patients with non-dialysis (Kosmadakis et al., 2012; Gould, Graham-Brown, Watson, Viana, Smith, 2014; Sokunbi, 2017) and dialysis CKD (Johansen, 2008; Wilund et al., 2010). Despite these known benefits, patients with CKD involvement in PA is deficient. Supervised exercise programme is one of the components of health promotion intervention aimed to slow the progression of CKD, improve quality of life, reduce the need for hypertensive treatment, and morbidity and mortality (Segura-Ortí, 2010). PA has positive outcomes in exercise tolerance and reduction of inflammatory mediator. It increases the synthesis of muscle protein, reduce muscle protein degradation, and increase in the number and size of muscle fibers which increases the muscle strength. In addition, central gains such as improvement of left ventricular function, decrease in the occurrence of cardiac arrhythmias, reduced risk of cardiovascular and metabolic diseases have been reported (Hopman et al., 2009; Segura-Ortí, 2010; Nascimento, Coutinho, Silva, 2012; Sokunbi, 2017). As reported by Tomich et al. (2014), six weeks exercise intervention programme improved the functional capacity and the quality of life of patients living with CKD with the effect sizes ranging from moderate to large. Based on the numerous benefits of PA outlined above, it is imperative that health care practitioners treating patients with CKD (with other chronic lifestyle diseases) include PA in their treatment programme and encourage their patients to meet the recommended PA guidelines based on personalised intensities of PA.

Although, there are scanty statistics on the incidence and prevalence of CKD in Africa (and specifically in Nigeria), renal disorders especially glomerular disorders are more prevalent in Africa than in the western world (Naicker, 2003). The incidence of CKD accounts for 8–10% of hospital admissions in Nigeria which may be far from the true situation as the incidence of CKD is largely under recognized and underdiagnosed (Akinsola et al. in Ulasi, Ijoma, 2010). The cases of end-stage renal disease (ESRD) are mostly presented and it is believed that they represent the tip of the iceberg of the entire burden of CKD (Bello, Nwankwo, Nahas, 2005). The prevalence of CKD in Nigeria is about 26%, higher in females, and increase steadily with age (Alebiosu, Ayodele, 2005). The most common risk factors for CKD were obesity, diabetes mellitus, hypertension, family history of hypertension and family history of renal disease. The less common risk factors were low-income occupation, use of traditional

medications, low hemoglobin, and central obesity (Chukwuonye et al., 2018). The progression of CKD and its mortality is high and the major causes of death in this part of the world are late presentation and prohibitive cost of treatment, including indirect costs such as man hour loss at workplace or outright loss of job and its devastating consequence (Ulasi, Ijoma, 2010) especially, for those who are the bread winners of their families. Currently, the very few renal replacement therapies that are available are not readily accessible as most of these centres are situated in urban areas and are run with refurbished poorly maintained machines (Ulasi, Ijoma, 2010). Thus, PA becomes a vital alternative for slowing down the progression of CKD and its degenerative consequences since it is an easy, accessible, reliable and cost-effective resource for several health conditions.

The health care institution is suitable and promising for prescribing physical activity (Börjesson, 2013). Renal physicians have been advised to routinely assess patients' physical activeness and counsel sedentary patients to be physically active (Johansen, Sakkas, Doyle, Shubert, Dudley, 2003; Delgado, Johansen, 2010) but despite this recommendation, it is observed that the renal care team in Nigeria rarely address this issue in the care and management of patients. Based on the affective-reflective theory of physical inactivity and exercise (ART), it is assumed that a stimulus triggers automatic associations and a resulting automatic affective valuation of exercise (Brand, Cheval, 2019). Value or interest in exercising among CKD patients could be initiated and reinforced by the renal care practitioners. However, the practitioners' perceptions, experience, feelings, and thoughts about exercise influence is paramount and is often a reflection of their current exercise behaviour as only those who exercise routinely are most likely to encourage and support others to exercise. The health care professionals may fail to recommend exercise for their patients due to lack of consensus among transplant professionals about recommending and prescribing exercise, time constraints, lack of confidence in their ability to counsel patients, lack of conviction that patients will respond to counseling, and the belief that other medical issues are more important than exercise (Sokunbi, 2017). The assessment of exercise counselling habits amongst renal health care professionals in the USA (Delgado, Johansen, 2010), Canada (Ma, Lui, Brooks, Parsons, 2012), and in the UK (Greenwood et al., 2013) are available but to date, no formal evaluation of exercise counselling practices among renal care team has been conducted in Africa (including Nigeria).

The Nigerian Association of Nephrology (NAN) is a multidisciplinary body of renal experts in Nigeria, which was established in 1987. Members include renal physicians and other medical staffs (nurses, researchers, dietitian, physiotherapists, exercise scientists etc.) involved in the care of patients with kidney disorders or researching into renal medicine in Nigeria. The members meet annually for the Nigerian Association of Nephrology Conference (NANCONF). The present study was conducted during the NANCONF 2018 and the objectives were to (i) determine the perception of physical activity or exercise counselling and assessment, (ii) establish the physical activeness, and (iii) identify possible barriers to exercise counselling among the attendees.

Methods

A cross-sectional survey-designed study was conducted on renal multidisciplinary team (MDT) delegates that attended the 30th annual scientific conference and general meeting of the Nigerian Association of Nephrology Conference (NANCONF, 2018) in Ilorin, Kwara State, Nigeria.

Ethics

The study was reviewed and approved by Loughborough University's local ethics committee. The participants or respondents provided their written informed consent to participate in this study.

Participants

A short presentation of the study and the recruitment process was delivered during the plenary session (in a common room) to all the delegates. All the 403 renal practitioners who attended the NANCONF 2018 were recruited, however, only 281 (70.3%) validly participated in the survey. The participants' average age was 42 ± 10 years, 53% females ($n = 149$) and 47% males ($n = 132$).

Data Collection

A questionnaire was adapted from Johansen et al. (2003), Delgado and Johansen (2010), and Greenwood et al. (2014). The questionnaire was validated by the steering committee of the Nigerian Association of Nephrology. It consisted of 24 items that were subdivided into four sections regarding opinions and practices related to exercise counselling. A 3-point Likert ratings of the opinions and practice (agree, disagree or do not know) and exercise counselling habits (frequently, infrequently or never), was used. Respondents were also asked how often they assessed patients' physical activity levels, prescribed or recommended physical activity, offered written information about physical activity, referred patients to exercise professional, or provided exercise equipment for patients' use during dialysis. They were then asked to choose from a list of barriers that hinder promotion of physical activity and exercise counselling practices in their hospitals. Information was collected about the characteristics of respondents' practices (practice settings and services available for patients with CKD). Finally, respondents indicated their levels of physical activity by choosing from a list of options based on the current physical activity guidelines and were asked to write other services or barriers not included in the survey (but available in their practice centres) in the free text box. The questionnaire required approximately 10 minutes to complete, was anonymous, and a designated member of the research team retrieved them instantly before the end of the conference.

Statistical Analysis

Descriptive statistical analysis was explored. The participants' characteristics were described using mean and standard deviation (SD), number (n), percentage (%) and bar charts for continuous and categorical variables. All the analyses were performed using IBM SPSS Statistics version 24.0 (Chicago, IL, USA).

Results

The distribution of respondents consisted of 50% nurses ($n = 140$), 39% nephrologists ($n = 110$; of which 25% were consultants) and 11% in other areas of specialization ($n = 31$). Their exercises practice (table 1) revealed low compliance to PA recommendation. Forty two percent ($n = 119$) of the respondents did not exercise regularly, 32% ($n = 90$) engaged in moderate intensity exercise for less than 5 days weekly. Twelve percent ($n = 34$) participated in moderate intensity exercise for more than 5 days per week, 7% ($n = 20$) engaged in vigorous intensity exercise on fewer than 3 days per week and 4% ($n = 10$) engaged in vigorous intensity exercise more than 3 days per week.

Table 1. Exercise Practice of Study Participants

Items	Response n = 281 (percentage)
How often do you engage in PA?	
1. Do not exercise regularly	119 (42)
2. Moderate <5 days/week	90 (32)
3. Moderate >5 days/week	34 (12)
4. Vigorous <3 days/week	20 (7)
5. Vigorous >3 days/week	10 (4)

Data are presented as n (%) unless otherwise indicated. PA, Physical Activity.

All the respondents reported that some type of PA/exercise service and human resources existed and were accessible in their units. As shown in figure 1, 53% reported that dietitians were the most available resource, 49% reported exercise professionals; only 19% reported having accessible exercise facilities in their dialysis centres. The large discrepancy suggests low attention is given to exercise as therapy for CKD patients.

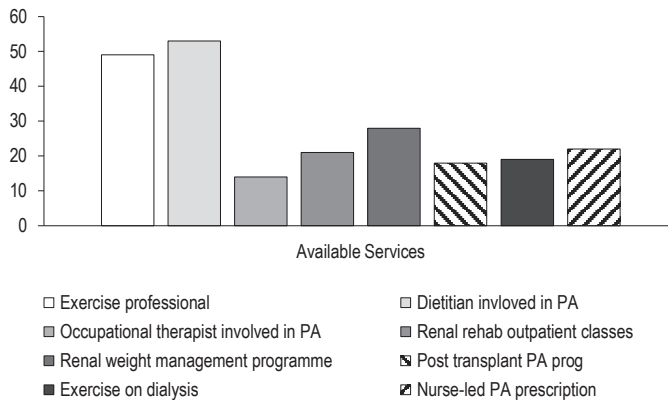


Figure 1. Distribution of currently available services for patients with CKD at various renal units (n = 281) (%)

Tables 2 and 3 presents responses to specific questions on the opinions and practices related to exercise counselling.

Table 2. Participants Responses (grouped by profession) to Opinion and Practice (%)

Opinion and Practice	Agree				Disagree				Do not know			
	Doctors	Nurse	Other	Overall	Doctors	Nurse	Other	Overall	Doctors	Nurse	Other	Overall
Physical inactivity is an important health risk in the general population	98	89	84	92	1	6	3	4	0	1	3	1
Increasing PA is beneficial for most people	99	95	87	96	0	2	3	1	0	0	3	0
PA is beneficial for patients with CKD	92	73	77	81	4	11	3	7	3	12	10	8
I am concerned about the risks of exercising in patients with CKD	46	50	52	48	44	40	16	38	7	7	19	8
I do not believe that patients with CKD would increase PA if advised to do so	16	39	42	30	75	49	32	57	6	8	19	9
I do not have time to talk to patients with CKD about PA during clinic visits	23	26	26	25	71	70	61	69	3	1	10	3
I do not think that patients with CKD are interested in the topic PA	18	30	36	26	68	61	42	62	10	6	16	9
I do not think that PA is an important part of patients with CKD therapeutic plan	5	19	13	13	86	70	61	75	6	6	23	8
I do not think that it is the role of the physician to counsel dialysis patients about PA	15	25	26	21	77	68	58	71	6	5	13	6
I do not feel confident in my ability to discuss PA with patients	18	17	13	17	77	78	61	75	2	4	19	5

For clarity, Doctors = Consultants, Senior Registrars and Registrars; Nurse = Renal Nurses; Other = other health professionals (physiotherapists, researchers, dietitians and others); PA, Physical Activity. Where responses for a question do not add up to 100% that is due to participant failure to answer the question.

Table 3. Participants Responses (grouped by profession) to Types of Exercise Counselling (%)

Exercise counselling	Frequently				Infrequently				Never			
	Doctors	Nurse	Other	Overall	Doctors	Nurse	Other	Overall	Doctors	Nurse	Other	Overall
I prescribe/recommend PA to patients	32	41	23	35	56	45	52	50	10	12	13	11
I provide may patients with written information	4	22	16	14	48	40	36	42	46	35	29	39
I refer my patients to exercise professional	9	21	26	17	36	32	26	33	51	43	29	45
I facilitate the provision of equipment for PA on dialysis	3	16	16	11	18	23	16	20	76	56	42	63

For clarity, Doctors = Consultants, Senior Registrars, Registrars; Nurse = Renal Nurses; Other = other health professionals (physiotherapists, researchers, dietitians and others); PA, Physical Activity. Where responses for a question do not add up to 100% that is due to participant failure to answer the question.

The themes of barrier that could hinder the promotion/provision of PA facilities (Figure 2) indicates that 75% of the respondents reported lack of motivated patients due to poor health or lack of awareness, 69% of the respondents reported lack of resources (dialysis bed, exercise equipment) or difficulty with the existing ones, 66% of the respondents reported lack of money or funding, 63% of the respondents reported lack of motivated staff, 57% of the respondents reported lack of qualified personnel, and 32% of the respondents reported cultural or religious beliefs as barriers.

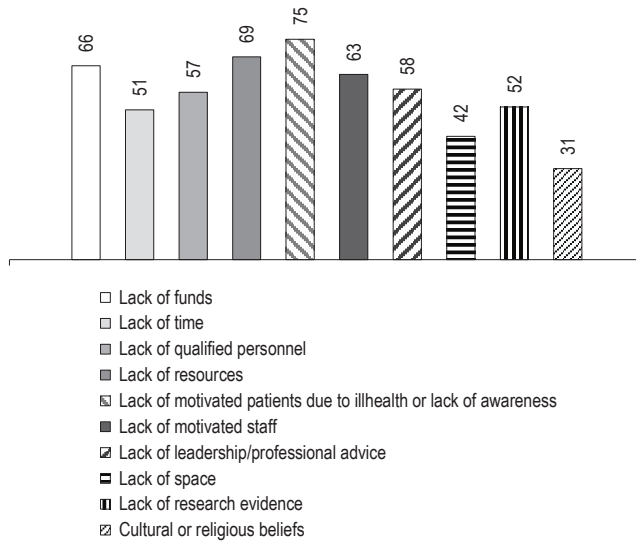


Figure 2. Reported barriers to PA

Discussion

The present study is the first to examine varying patterns and attitudes towards exercise counselling habits and identifying the barriers that may hinder exercise counselling amongst renal care team in Nigeria. The examined wider renal care team involved in the management of patients across all stages of CKD differed from previous studies that focused on renal physicians only (Delgado, Johansen, 2010; Johansen et al., 2003) or haemodialysis staff (renal nurses, dietitian, technician and administrators) (Capitanini et al., 2014). Most respondents acknowledged the importance of an active lifestyle for health, yet very few provided specific recommendations or referrals to facilitate exercise participation for their patients.

Although 42% of respondents were inactive and 12% engaged in moderate exercises for more than 5 days weekly, 92% of the overall respondents admitted that physical inactivity is an important risk to health of the general population; 96% and 81% acknowledged that increasing PA is beneficial for most people and the CKD population (Table 2). One would assume that the views and beliefs of our respondents about the benefits of physical activity would reflect in their habit but that was not so as the present study indicated a very low percentage of active participants (12% of the respondents). Also, their opinions about the health risks of a sedentary lifestyle and the benefits of PA did not correspond with their own level of PA. Of the 75% of the respondents that agreed that PA is an important part of patients' therapeutic plan and are confident to discuss PA with patients, only 35% of them routinely prescribed and recommended PA to their patients.

Seventy-one percent of the respondents believed that it is the role of the physicians to counsel patients about PA, however, actual recommendations were made by just 11% of respondents who routinely facilitate the provision of equipment for PA to patients on dialysis, 17% referred patients to exercise professionals, and 14% provided patients with written information about physical activity (Table 2). The above findings are comparable to the study

of Greenwood et al. (2014); a similar study that was conducted in the UK. Their results revealed that 42% of the overall respondents discussed and encouraged PA, but only 11% of respondents facilitated implementation of PA for their patients. From these, the beliefs and opinions about the benefits of physical activity by renal care team members in Nigeria are not translated into meaningful habitual physical activity that would facilitate behaviour change for long term health benefits of patients. To support this, 19% of the respondents have existing facilities for exercise during dialysis in their centres, 21% reported current nurse-led physical activity prescription, 53% reported available dietitian involved in physical activity, and 49% reported existing exercise professionals in their centres. Half of the respondents were nurses (50%), a pointer to high distribution of nursing staff compared to other renal health professionals (doctors, physiotherapists, dietitians). The availability of experts such as nurse-led PA specialist and occupational therapist involved in PA is also necessary for longer-term sustainability of counselling habits.

Although most of the respondents recognised the importance of increasing PA, they do not actively promote PA in the care and management of their patients. We identified several existing barriers to exercise counselling among renal care team in Nigeria. The commonest reported barrier was lack of motivated patients due to ill health or lack of awareness (75% of respondents). Measures to educate patients about their disease and the benefits of habitual PA in addition to addressing factors that could prevent widespread implementation of patient education could result to better patient outcomes. The present study also reported lack of resources (69% of respondents) and lack of funding (66% of respondents) as important barriers to exercise rehabilitation of CKD patients in Nigeria. Other potential barriers were lack of motivated staff (63% of respondents), lack of leadership or professional advice (58% of respondents), lack of qualified personnel (57% of respondents), and lack of time (51% of respondents). Therefore, these barriers could have accounted for the low referral of patients to exercise professional and the low facilitation of provision of equipment during dialysis. Similar themes reported in the present study also emerged in the studies of Greenwood et al. (2014), Ma et al. (2012), and Delgado and Johansen (2010). In addition, lack of space (42% of respondents), lack of research evidence (52% of respondents), and cultural and religious beliefs (31% of respondents) were also reported as barriers to effective exercise counselling habits for CKD patients in Nigeria. In addition to factors identified in other countries, there are also challenges specific to the economic, social and cultural situation in Nigeria.

Haemodialysis is the commonest modality of renal replacement therapy in sub-Saharan Africa (Oluyombo et al., 2014) and Nigeria remains the most populous country in Africa and the seventh globally with an estimated population of over 198 million (Adeyemo, 2018). About 70% of the population live on below \$1.50 per day and just 5.6% of the country's budget is spent on health care (Human Development Report, 2014). The country has the third highest number of patients on haemodialysis after Kenya and South Africa (Pozo et al., 2012). Recently, the establishment of dialysis centres owned by private companies and the government have been increasing, but these facilities are densely situated in the urban areas that are inaccessible to most CKD patients, low sustainability of dialysis due to poor maintenance of the dialysis machines (Oluyombo et al., 2014). Therefore, these drawbacks need to be addressed for an effective provision and implementation of exercise services for patients living with CKD in Nigeria.

The limitations of this study include involving only delegates that attended the NANCONF annual meeting, which may not be a representation of the entire renal care team members in Nigeria. The respondents from the host centre, University of Ilorin Teaching Hospital, outweighed respondents from other centres in Nigeria. We also observed that there was a larger response rate from nurses possibly due to their distribution in the sample size

compared to other renal care team and knowing that nephrologists remain the primary care providers of CKD patients (Delgado, Johansen, 2010), may have biased the results. Furthermore, respondents from centres where exercise-related rehabilitation services are being practiced may have a wider knowledge and understanding of the potential benefits of exercise in CKD management and could perhaps more likely, counsel patients about PA. Therefore, our findings should not be generalised on the entire renal team in Nigeria but considered as a guide to future investigation.

Conclusions

The results of this study demonstrated that renal care professionals established the importance of PA as a therapeutic option for health of CKD patients however, practical referral and guidance were poorly practiced. The lack of motivated patients, resources, funds, motivated staff, qualified personnel and research are the common barriers that renal care team in Nigeria face in the implementation of PA among CKD patients. Based on the principle of “practice what you preach”, and given that healthcare professionals are the main sources of preventive care information to the public, a better understanding of the relationship between renal care teams’ PA behaviour and their counselling habit is required to guide the development of interventional studies aimed to promote active lifestyles amongst renal care teams. This might further improve the health of CKD patients. Therefore, measures to address the reported themes of barriers with the provision of accessible and affordable renal replacement therapy, and the sustainability of such facilities would go a long way in reducing the burden of the late presentation of the disease (end stage renal disease).

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