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Original Article

Factors Affecting on Dialysis Patients to Choose or Refuse Kidney Transplantation as Renal Replacement Therapy

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ABSTRACT

Kidney transplantation (KT) is the most successful treatment for end-stage renal disease patients. But objective data about patients' willingness to undergo kidney transplant is still lacking in Pakistan. **Objective:** To assess barriers to KT and identify factors which could influence the willingness regarding KT among hemodialysis dependent patients. **Methods**: This cross-sectional study carried out at Dialysis Unit, Dept. of Urology and Kidney transplantation Lahore General Hospital, Lahore on 100 hemodialysis dependent patients by completion of structured questionnaire about their knowledge and attitudes toward KT and how satisfied they were with dialysis. **Results:** The mean age of the patients was 42.8 ± 10.6 years with 55% male and 45% female patients. The percentage of patients who were willing to get a kidney transplant was 60%. The main reason of unwillingness to undergo KT was lack of donor (83.3%). Motivating factors in patients to choose KT were vascular access constraints 75%, studies or work difficulties 70%, fluid and dietary restrictions account for 63.3%. The percentage of patients who wanted a deceased kidney for transplant was 50%, whereas the percentage of patients who preferred a living kidney for transplant was 25% (17% relatives and 8% non-relatives) and 25% of patients had no preference. **Conclusion**: Willingness to get kidney transplant is relatively low in Pakistan. Lack of donor, fear of surgery and financial problems are the main barriers for KT in ESRD patient.

INTRODUCTION

Chronic kidney disease (CKD) is a developing public health problem worldwide. CKD is linked to high morbidity of patients and higher use of medical resources [1]. The overall prevalence of CKD is estimated to be around 13.4% [2] Patients often present with ESRD because in majority of patients, CKD remains undiagnosed [3]. The treatment of ESRD is either dialysis or renal transplant [4]. Depending on the source of the donor organ, kidney transplantation (KT) is normally categorized as either cadaveric (also known as deceased donor) or living donor transplantation [5]. For many ESRD patients, kidney transplantation (KT) is the preferred course of treatment since it improves quality of life and survival compared to permanent dialysis [6]. Moreover, transplantation therapy significantly lowers the overall cost of healthcare for society [7]. Different perspectives and understandings concerning chronic renal disease and its treatment exist among patients and their caregivers [8]. The choice of dialysis in terms of kidney replacement therapy seems to be influenced by patient education, whereas family plays a major role in decisions for transplantation, particularly living donation [9]. In addition to these factors, Other factors, such as ignorance of the necessity for kidney transplantation, may also have an impact on how acceptable it is to receive a

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kidney transplant. Despite the fact that kidney transplantation has been available in Pakistan since 1979, the vast majority of ESRD patients remain on hemodialysis. Since there is still a low level of acceptance for transplantation, it is necessary to evaluate patients' understanding of kidney transplantation as well as their perceptions of and willingness to embrace KT as a therapeutic option. Health care practitioners can better adapt patient education to have a favorable effect on patients' decision-making regarding transplantation by identifying the variables that affect a patient's willingness to choose kidney transplant as renal replacement therapy. Also, these will guide policy makers in developing policies that will address the elements that have a negative impact on patients' willingness to choose transplantation as a treatment of choice.

METHODS

This cross-sectional study carried out at Department of Urology, Dialysis unit, Lahore General Hospital, Lahore on 100 participants receiving hemodialysis for end-stage renal disease. Non probability convenient sampling technique was used for sample selection. Patients with serious psychiatric illnesses that have been clinically identified, cognitive impairment, co-morbid terminal disease, and patients who are clinically unstable were excluded from the study. A structured questionnaire was completed by patients during their hemodialysis, which was included with questions regarding patients' demographics, knowledge about KT, motivational factors for KT, and barriers to KT. Collected data were analyzed through IBM SPSS 25.0. For qualitative data, the chi-square test was utilized, and for quantitative data, the paired T test.

RESULTS

The mean age of the patients was 42.8 ± 10.6 years, range (25-60) years with 55% male and 45% females. Among study populations 80% were married and 20% were unmarried. Approximately 35% the patients had secondary and 35% tertiary education level. Two-third of the patients were unemployed and Two-third were related to Muslim religion. HTN was the most common co-morbid condition among patients (85%) (Table 1).

Characteristic	Willing for KT(%)	Unwilling for KT(%)	Total study population(%)	p-value
Mean age (year ± SD)	36.6±8	53±3.7	42.8 ± 10.6	<0.001
Gender				
Male	40(88.8)	5(11.2)	55%	<0.001
Female	20(50)	20(50)	45%	
Marital status				
Married	40(61.5)	25(38.5)	80%	0.001
Unmarried	20(100)	0(0)	20%	
Education				
Tertiary /Secondary	45(69.2)	20(30.8)	76.5%	0.620
Primary/No formal education	15(75)	5(25)	23.5%	
Employment status				
Employed/Retired	16(80)	4(20)	23.5%	0.001
Unemployed	44(67.6)	21(22.4)	76.5%	
Unemployment reason				
Don't want	30(60)	20(40)	75%	0.001
Trying but not accepting	20(100)	0(0)	25%	
Religion				
Muslim	45(75)	15(25)	75%	0.167
Christian	15(60)	10(40)	25%	
Duration of HD				
>3 Years	35(77.7)	10(22.3)	52.9 %	0.122
<3Years	25(50)	15(50)	47.05%	
Co-morbid disease				
HTN	55%	20%	85%	
DM	15%	15%	35%	
Heart Disease	0	5%	5%	

Table 1: Demographic details of included patients

Half of the patients had dialysis duration more than 3 years. The percentage of patients who were willing to choose kidney transplant were 60%, In remaining patients 25% were unwilling and 15% were not sure about acceptance of kidney transplant. The preferred source of kidney for them was deceased kidney (50%) (Figure 1).

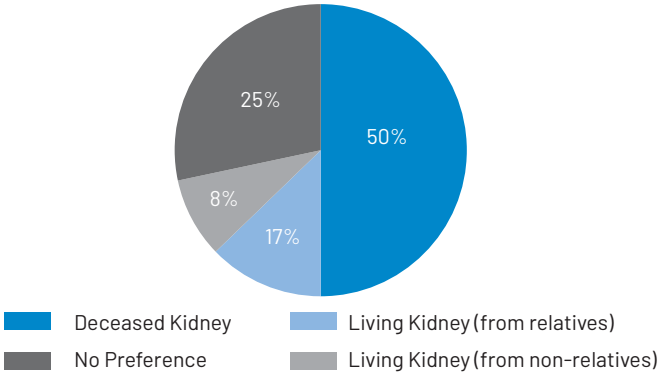

Figure 1: Preferred Source of Kidney

Two third of the patients had heard about kidney transplant from their physicians. Only 30% of patients were referred for KT, among them 5% patients had previous history of KT. Two third of the patients were aware about local transplant centers. Forty-five percent of the patients labeled their knowledge as average and 70% of the patients wanted to know more about KT (Table 2).

Characteristic	Willing for KT(%)	Unwilling for KT(%)	Total study population(%)	p-value
Heard about Renal transplant				
Yes	60(72.3)	23(27.7)	94%	0.034
No	0(0)	2(100)	6%	
Treating physician discussed kidney transplant with patients				
Yes	50(71.4)	20(28.6)	70%	0.713
No	10(66.7)	5(33.3)	30%	

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Characteristic	Willing for KT(%)	Unwilling for KT(%)	Total study population(%)	p-value
Ever referred for Kidney transplant evaluation				
Yes	25(83.3)	5(16.6)	30%	0.003
No	35(63.6)	20(36.6)	70%	
Self-reported knowledge about KT				
Below average	5(50)	5(50)	20%	0.137
Average	30(66.7)	15(33.3)	45%	
Above average	25(83.3)	5(16.7)	35%	
Aware of any local transplant centers				
Yes	46(71.4)	17(28.6)	70%	0.074
No	14(36.6)	8(26.4)	30%	
Want to know more about KT				
Yes	60(96.7)	2(3.3)	67%	<0.001
No	0(0)	20(100)	20%	
Don't Know/Not sure	0(0)	3(100)	13%	
Is it possible for a living individual to give a kidney?				
Yes	55(73.3)	20(26.7)	80%	0.128
No	0(0)	2(100)	2%	
Don't Know/Not sure	5(62.5)	3(37.5)	18%	
After a kidney transplant, one's opinion on their quality of life				
Improve quality of life	50(90.9)	5(9.1)	55%	<0.001
Not improve quality of life/ Do not know	10(33.3)	20(66.7)	45%	

Table 2: Patients' knowledge of renal transplantation

Motivating factors in patients to choose KT were vascular access constraints (75%), study or work difficulties (70%), Fluid restrictions and diet constraints account for (63.3%), comorbidities of hemodialysis (43.3%), family wishes (43%), and constraints related to social aspects (11.6%) (Table 3).

Characteristic	Willing for KT(%)	Total study population(%)
Dietary / fluid restrictions		
Yes	38(63.3)	60%
No	22(36.6)	40%
Problems with studies or at work		
Yes	42(70)	60%
No	18(30)	40%
Wishes of family		
Yes	25(41.6)	33%
No	35(58.3)	67%
Comorbidity of hemodialysis		
Yes	26(43.3)	40%
No	34(56.6)	60%
Constraints of social aspect		
Yes	7(11.6)	8%
No	53(88.3)	92%
constraints of vascular access		
Yes	45(75)	67%
No	15(25)	33%

Table 3: Motivating factors that affect patients on hemodialysis' attitude regarding renal transplant

The reasons for not choosing KT as renal replacement therapy were lack of donor (83.3%), fear of transplant rejection and complication of surgery (76%), feeling of well-being (72%), financial constraints (40%) and trust on doctors 16% (Table 4).

Characteristic	Willing for KT(%)	Total study population(%)
I don't have donor in relatives (n=25)		
Not important/Somewhat important	5(16.6%)	20%
Important/Very important	25(83.3%)	80%
I don't believe the physicians.		
Not important/Somewhat important	21(84%)	85%
Important/Very important	4(16%)	15%
I need more time to think		
Not important/Somewhat important	22(88%)	85%
Important/Very important	3(12%)	15%
Religious concerns		
Not important/Somewhat important	25(100%)	100%
Important/Very important	0	0%
Fear of surgery and Complications		
Not important/Somewhat important	15(60%)	70%
Important/Very important	10(40%)	30%
Don't want somebody else organ in my body		
Not important/Somewhat important	17(68%)	90%
Important/Very important	8(32%)	10%
I feel healthy on hemodialysis		
Not important/Somewhat important	7(28%)	65%
Important/Very important	18(72%)	35%
Financial concerns		
Not important/Somewhat important	10(60%)	25%
Important/Very important	15(40%)	75%
It takes more time to approve case from PHOTA		
Not important/Somewhat important	25(100%)	80%
Important/Very important	0	20%
Fear of transplant rejection		
Not important/Somewhat important	6(24%)	43%
Important/Very important	19(76%)	57%
I am very weak		
Not important/Somewhat important	20(80%)	86%
Important/Very important	5(20%)	14%

Table 4: Patients' perspectives on the obstacles to kidney transplantation

DISCUSSION

Patients' interest is the first stage in deciding whether to have a kidney transplant or dialysis as a renal replacement therapy in ESRD patients. Our study focused on identifying factors that affect patient willingness to choose or not to choose renal transplantation. In our study 60% of the patients were willing to undergo renal transplant, less than what has been reported by Alansari et al. (69%) and Bioma et al (67.3%) [10, 11]. But more than what has been reported by Qiao et al (34.9%) and Qiling Tan et al (46.4%) [12, 13]. The observed differences are most likely the result of the study population's different nature, culture, and socioeconomic background. Deceased kidney was the preferred source in half of the patients that were willing to undergo KT in our study. The preference of deceased or living kidney are much different among studies in literature. In a study by Bioma et al the half the patient had no preference, 40% preferred living donor kidney and only 2% had preferred deceased kidney [11]. But the willingness for acceptance of

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deceased kidney was reported 80% in a study by Alobaidi et al [14]. In our study 85% patients were hypertensive and 35% were diabetic. The literature research also demonstrates that these two disorders are the leading causes of CKD, which validates the current study's findings [15, 16]. Three factors were discovered to positively influence patients' willingness to undergo transplantation from their demographic features: younger age, male gender and unmarried status. Older age of patients is regarded as a barrier to kidney transplantation. In our study most the patients willing to accept KT were younger than unwilling patients (36.6±8 Vs 53±3.7, p value<0.001). Findings from studies conducted in China and USA also showed that patients over the age of 60 were less willing to undergo kidney transplantation [12, 17]. In our study 50% of female patients and 88% of male patient were willing to accept KT. It was almost same for female and male respectively (63% and 70%) in a study by Bioma et al [11]. But it was reported much lower in study by Qiao et al. (20% Female, and 43% Male) [11]. Another important factor was marital status; we noticed that being single positively affects willingness to undergo kidney transplantation. The similar result was observed in a study conducted in Morocco by Kabbali et al. revealed that being single and male had positive impact on willingness [17]. In contrast, the study conducted in Saudi Arabia by Alansari et al demonstrated that being married positively affects willingness toward KT [10]. Other elements that impacted patients' willingness positively to accept KT in our study were desire to learn more about KT, perception of improved quality of life with renal transplant, prior knowledge about KT, and referral for transplant evaluation. These results demonstrate potentially modifiable characteristics related to hemodialysis patients to accept kidney transplantation. For instance, prior knowledge and feeling to know more about KT are important factors. All of the patients who had not heard about kidney transplantation and did not want to learn more about it were unwilling to undergo KT. In our study who had prior knowledge about KT 72% were willing, and 97% of who wanted to learn more were willing for KT. In a study by Bioma et al in Ghana reported the similar results for prior knowledge (73% were willing) but 77% of patients wanted to learn more about KT were willing for transplantation [11]. In our study, when compared those who replied that (kidney transplantation improved quality of life), with individuals who answered that (transplant doesn't improve quality of life or did not know) were three times more willing to get a kidney transplant. The results of our study on perception of quality of life after kidney transplant are similar to the results documented by Bioma et al [11]. In our study only 30% patients are referred for transplant evaluation, willingness is higher in referred patients (83.3%) than non-referred patients (63.3%). These results of referral are similar to findings of Bioma etal. (30%) [11]. But better than Ilori et al (only 4%) [18] and worse than that reported in Saudi Arabia by Alobaidi et al (55.7%) [14]. Dialysis patients have limited access to kidney transplant because referral for transplant evaluation is very low. While referral for evaluation is the preliminary step toward transplantation. In our study among motivating factors vascular access constraints were most common and family wishes and Social aspect constraints were least common, which is distinct from the results of Qaio et al study, in which Studies or work difficulties were common constraints [13]. Among our study population who were not willing for kidney transplant, lack of donor (83.3%), fear of transplant rejection and complication of surgery (76%), feeling of well-being (72%) and financial constraints (40%) were major barriers to accept kidney transplantation. Due to lack of local deceased program and non-allowance of non-relative living donors, patients are completely reliant on relative live donors for kidney transplant. In additions due to lack of knowledge and anxiety about failure and complications of surgery patients avoiding kidney transplantation. In studies conducted in Ghana and China showed fear of complications and financial concerns as main barriers of kidney transplantation in CKD patients [11, 19] But studies conducted in Saudi Arabia and Brunei showed lack of donors as main barrier in ESRD patients to undergo transplantation [14, 20].

CONCLUSIONS

The proportion of ESRD patients in Pakistan, who are willing for kidney transplant, are relatively low in Pakistan. Lack of donor, fear of surgery and complications and financial problems are the main barriers in patients, who are willing to accept kidney transplant. Stringent donor criteria resulted in the donor pool's shortage.

Conflicts of Interest

The authors declare no conflict of interest.

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