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The Journal of Nephrology Social Work

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The Journal of Nephrology Social Work

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THE JOURNAL OF NEPHROLOGY SOCIAL WORK

The Council of Nephrology Social Workers (CNSW) of the National Kidney Foundation (NKF) is a professional membership organization of social workers dedicated to improving the quality of psychosocial services delivered to ESRD patients, as well as supporting the profession of nephrology social work.

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The Editorial Board of *The Journal of Nephrology Social Work* encourages the submission of original manuscripts. The *JNSW* contains articles addressing contemporary issues/topics relevant to nephrology social work. Authors may wish to address any of the following topics, which are listed as guidelines:

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The Journal of Nephrology Social Work (*JNSW*) is the official publication of the Council of Nephrology Social Workers of the National Kidney Foundation, Inc. Its purpose is to stimulate research and interest in psychosocial issues pertaining to kidney and urologic diseases, hypertension, and transplantation, as well as to publish information concerning renal social work practices and policies. The goal of *JNSW* is to publish original quantitative and qualitative research and communications that maintain high standards for the profession and that contribute significantly to the overall advancement of the field. *JNSW* is a valuable resource for practicing social work clinicians in the field, researchers, allied health professionals on interdisciplinary teams, policy makers, educators, and students.

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Research and Review. The *JNSW* welcomes reports of original research on any topic related to renal social work. The editors will also consider manuscripts that document the development of new concepts or that review and update topics in the social sciences that are relevant to professionals working in the field of renal social work.

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Clinical/Research Briefs. Abbreviated manuscript format presents clinical practice experience, preliminary research findings (basic or clinical), or professional observations in a shortened report form. Length should usually not exceed six double-spaced pages.

Practical Aspects Section. Contributions to this section are detailed protocols, forms, or other such materials that are successfully utilized for delivery of outcomes-based clinical social work services.

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Order of the Manuscript Sections

1) Title page
2) Abstract
3) Text
4) References
5) Appendices (optional)
6) Author note
7) Tables
8) Figures with captions

Title Page. The manuscript's title page should contain the title of the manuscript and the name, degree, and current affiliation of each author. Authors are generally listed in order of their contribution to the manuscript (consult the APA style guide for exceptions). The title page should also contain the complete address of the institution at which the work was conducted and the contact information for the primary author. A running head (a shortened version of the manuscript's title) should be set in the upper left-hand corner of the page, in all uppercase letters. Page numbering should begin in the upper right-hand corner of this page. With the exception of the page numbers and running heads, all text on the title page should be centered.

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Each figure in the manuscript must have a caption, formatted as follows:

Figure 1. Exemplary formatting for all figure captions.

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- In addition to the images that appear in your word processing file, it is also important to send the images separately as individual files. These images should be 300 d.p.i. minimum.

Sociographic Profile of Hemodialysis Patients in Portugal

Marta Freitas Olim, MSW, Social Work Department and Social Responsibility Office of Diaverum, Portugal; Sónia Guadalupe, PhD, Instituto Superior Miguel Torga (ISMT), Centre for Health Studies and Research of the University of Coimbra, Portugal; Francisca Mota, Paula Fragoso, Susana Ribeiro, BASW, Social Work Department of Diaverum, Portugal.

The study outlines the sociographic profile of patients on hemodialysis treatment in Portugal through a descriptive study of 3114 chronic renal failure patients. The dominant sociographic profile indicates that participants were male (59%), over the age of 65 (52.54%, M = 67.6), married (58.70%), with a low educational level (1st to 4th grade: 53.18%), and retired (77.62%). They were born in Portugal (89.56%), living in Lisbon (51.48%), living with nuclear families with children (46.47%) and had informal support networks (72.22%). Other social indicators point to vulnerable situations: 8.6% were unemployed, 2.5% were living in a precarious housing situation; 10.45% were displaced patients; 11.37% lived alone; 9.18% had single-parent families; and 10.69% did not have any source of support. Knowledge of sociographic profiles is a determinant of successful social work and social epidemiology in order to develop social and multidisciplinary intervention programs and social policies that promote individual and social well-being of chronic kidney disease patients.

INTRODUCTION

The social relevance of chronic renal failure is increasing. As a global public health problem, the prevalence of chronic kidney disease (CKD) in the world, including Portugal, has increased significantly (Ruggenenti, Schieppati, & Remuzzi, 2001). The proportion of kidney problems in the population of Portugal over the age of 15 increased from 1.8% in 2005/2006 to 4.6% in 2014 (Instituto Nacional de Estatística (INE), 2016). According to data from the Portuguese Nephrology Society (Macário, 2016), in 2015 there were 18,928 patients in Portugal, 11,514 of those patients were enrolled in a regular hemodialysis program and the others were undergoing other therapeutic approaches (peritoneal dialysis, transplantation and conservative treatment). In 2015, Portugal had the highest incidence of renal failure in Europe in 2015 (Macário, 2016). Of all Portuguese patients who started renal replacement therapy, 89.54% started hemodialysis treatment, 9.74% started peritoneal dialysis treatment, and 0.72% received a transplant, the latter number reflecting only those who received a transplant without undergoing dialysis treatment (Macário, 2016). The majority of those who started hemodialysis treatment were over the age of 65.

This higher prevalence of kidney disease is related to the increase in the incidence of other diseases, such as diabetes mellitus and arterial hypertension. An increase in the average life expectancy and greater access to general healthcare, simultaneously lead to an increase in the diagnosis of kidney disease (Parsi, Kanni, & Malhotra, 2015; Wild, Roglic, Greene, Sicree, & King, 2004). The disease process, as well as the hemodialysis induction, irreversibly marks the lives of chronically dialyzed patients. Physical, psychological, familial, work and social impacts, force them to adjust to a life with different demands.

Studies of hemodialysis patients and renal transplant patients have demonstrated the correlation of socio-demographic, socio-familial, socio-occupational, and psychosocial characteristics in adherence to treatment (Dobrof, Dolinko, Lichtiger, Uribarri, & Epstein, 2002) and in resulting outcomes, and highlight the differences between women and men (Vourlekis, & Rivera-Mizzoni, 1997). As determinants of health, several social factors have been associated with quality of life in CKD patients (Kao, Lai, Tsai, Jan, Chie, & Chen, 2009), adaptation to the disease (O'Brien, 1980), and selection of peritoneal dialysis over hemodialysis (Stack, 2002). Gender, age, and social support are predictive variables of physiological indicators throughout treatment (Boyer, Friend, Chlouverakis, & Kaloyanides, 1990). Social determinants have a clear effect on referral timing, delaying or halting the progression of CKD (Blythe, & Benoit, 2004). A twenty-four study (Morton et al., 2016) analysis of social disadvantage factors among dialysis patients (gender, race/ethnicity, religion, education, socio-economic status, occupation, and place of residence) and their effect on health outcomes shows that low education, no health insurance, low occupational level, or no home ownership were significantly related to less healthcare. Thus, knowing and understanding the sociographic profiles of the patients is fundamental.

OBJECTIVES

In order to broaden knowledge of the hemodialysis population in Portugal, the study aimed to outline the sociographic profile of patients undergoing treatment in 25 hemodialysis clinics, characterizing the participants' gender, age, education level, place of birth, residential area, marital status, family typology, support networks, housing, and professional situation.

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METHOD

Instruments, Procedures, and Data Analysis

This is a descriptive study based on patient data, obtained through semi-structured interviews, concerning the sociographic characteristics of the CKD population (age, gender, marital status, occupation, education level, and family typology). The organization's research ethics committee approved the study. This data was compiled and analyzed through the statistical software R [1], version 3.3.1. A descriptive and inferential statistical analysis was performed. The Mann-Whitney test was used in the comparison of averages between two groups; the Kruskal-Wallis test was used in the comparison of three groups; and the Wilcox test was used for paired samples to verify which groups differ from each other.

Participants

The study involved 3114 hemodialysis patients in treatment in 25 clinics in mainland Portugal during the year 2016. The clinics are located in three major geographical areas of the country: 1) North (Régua, Riba D'Ave, Marco de Canavezes, Paredes, Penafiel, Vila do Conde, Braga, Vila Verde, Vila Nova de Gaia, and two clinics in the city of Porto); 2) Centre (Águeda, Aveiro, and Figueira da Foz); and 3) Lisbon (The greater metropolitan area of Lisbon: Torres Vedras, Sintra, Amadora, Estoril, Odivelas, Linda-a-Velha, Almada, Loures, and Lisbon—Saldanha, Benfica, Lumiar). In Portugal, there is a dominant public healthcare system (universal and tendentiously free). Dialysis care is mainly provided by private clinics that have conventions with the Portuguese State, making the treatment free of charge to the patients. The sample included 1262 women (41%) and 1852 men (59%), with an average age of 67.6 (SD = 14.88). The majority of the patients only had basic education, from 1st to 4th grade level (53.18%), followed by those with 5th and 6th grade education (11.53%), and those with 7th to 9th grade education (10.63%); 10.18% did not have formal schooling, and only 7% had higher education qualifications **(Table 1)**.

RESULTS

Age By Gender, By Region, and According to Treatment Phase

The average age of the patients was 67.6 years old, the youngest being 18, and the oldest 96, noting that women in treatment were, on average, older than men (M = 68.16 versus M = 65.5, $p < 0.001$) **(Table 2)**.

When analyzing the age distribution according to the geographical areas where the clinics are located, we noticed that the average age in the Centre region (M = 69.39) was higher than in the North (66.44) or the greater metropolitan area of Lisbon (65.77), which had the lowest value, with statistically significant differences in the average age in the different regions ($p < 0.001$), pointing out that the Centre region was the one with the highest value **(Table 2)**. As for age groups, the majority of users were between the age 65 and 84 (52.54%), in contrast to the minority who were under age 25 (0.58%). This applied regardless of gender and residential area. The Lisbon area had the largest percentage of age groups below 64. The Centre region stood out as the group that had the most patients over 85, and presented a greater percentage of patients equal or greater than age 65 (**Table 3**).

The patients' average age at the time of their first hemodialysis treatment was 60.9 (with a minimum age of 7 and the maximum of 93). We noticed a greater number of people aged 65 to 84, coinciding with the age group where there were more patients being treated **(Table 4)**. Women in the sample were older than men when starting treatment ($M = 61.93$ vs. $M = 60.12$ years, $p \leq 0.001$). In the greater metropolitan area of Lisbon, hemodialysis was started earlier (59.40 years old), and the Centre region had the highest concentration of older people undergoing hemodialysis and a later start on treatment ($M = 64.20$ years old). A statistically significant difference was observed regarding the other geographical regions and the average age of initiation of treatment ($p < 0.001$) **(Table 5)**.

Origin of Patients: Place of Birth and Residential Area

This study had participants from 27 different countries, though the majority were Portuguese (89.56%). There was a significant proportion of African-born patients, mostly from the African Countries of Portuguese Official Language (PALOP; Paises Africanos de Lingua Oficial Portuguesa), such as Cape Verde, Guinea-Bissau, São Tomé e Príncipe, Mozambique, and Angola ($n = 270$; 8.68%), which was the result of healthcare agreements between Portugal and these countries. The largest concentration of patients was in the Lisbon area, where there were 11 clinics. Although there were also 11 clinics in the North, there were fewer people undergoing treatment at those locations **(Table 6)**.

Family and Social Support Networks

We found that most of the patients were married (58.7%), followed by widowed people (17.79%). As for family type, the majority were part of a nuclear family with children (46.47%), followed by those with extended families (12.68%), those who lived alone and constituted single-person families (11.37%), and then single-parent families (9.18%). The majority of patients had informal support from family, friends, and neighbors as their primary source of support (72.22%); formal support by social services was less relevant. It should be noted that 10.69% of the sample presented with no support network at all **(Table 7)**.

Housing

The majority of patients lived in apartments (47.47%) or in houses (44.48%). The remaining types of housing (collective housing, improvised housing, mobile housing, shack, part of a house, homeless, other) were less frequent. Relevant to social concerns were the precarious housing situations (2.5% of the cases), and collective housing (5.33%). As for the type of housing occupancy, the majority lived in their own houses without mortgages (52.34%), followed by those who lived in rented houses (26.36%) **(Table 8)**.

Table 1. Socio-demographic Characterization of the Sample: Gender, Age, and Educational Level

	***n* = 3114**	**% (100)**
Gender		
Female	1262	41.00
Male	1852	59.00
Educational Level		
No Education	371	10.18
1st to 4th Grade	1656	53.18
5th to 6th Grade	359	11.53
7th to 9th Grade	331	10.63
10th to 12th Grade	232	7.45
Higher Education	219	7.03

Age	***M***	***SD***	***Mo***	***Mín***	***Máx***
	67.6	14.88	72	18	96

***n* = frequency; *M* = average; *SD* = standard deviation; *Mo* = mode; *Min* = minimum; *Máx* = maximum**

Table 2. Age of the Patients By Gender And Geographical Area

	Average Age	**IC 95%**	
Gender			
Female	68.16	(67.36 ; 68.96)	$p < 0.001$
Male	65.50	(64.82 ; 66.18)	
Geographical Area			
G.M.A. Lisbon*	65.77	(65.03 ; 66.51)	
Centre	69.39	(68.19 ; 70.58)	$p < 0.001$
North	66.44	(65.52 ; 67.36)	

*** G.M.A. Lisbon = Greater Metropolitan Area of Lisbon**

***p* = *p*-value Significance Level**

Table 3. Age Group by Geographical Area

	Portugal		G.M.A. Lisbon*		Centre		North	
	n = 3114	% (100)	*n* = 1603	% (100)	*n* = 507	% (100)	*n* = 1004	% (100)
Age Group								
< 25	18	0.58	12	0.75	–	–	6	0.6
25 – 44	280	8.99	153	9.54	32	6.31	95	9.46
45 – 64	917	29.45	502	31.3	128	25.25	287	28.59
65 – 84	1636	52.54	804	50.16	292	57.39	540	57.78
85+	263	8.45	132	8.23	55	10.85	76	7.57

*** G.M.A. Lisbon = Greater Metropolitan Area of Lisbon**

Table 4. Age at First Treatment

Age group at first treatment		***n* = 3114**		**Valid %(100)**	
< 25		98		3.25	
25 – 44		420		13.93	
45 – 64		1040		34.49	
65 – 84		1347		44.68	
85+		110		3.65	
MD		99		–	
	M	***SD***	***Mo***	***Mín***	***Max***
Age group at first treatment	60.9	16.5	68	7	93

n = frequency; *M* = average; *SD* = standard deviation;
***Mo* = mode; *Min* = minimum; *Max* = maximum**
***MD* = Missing Data**

Table 5. Age At First Treatment by Gender and Geographical Area

	M	**IC 95%**	
Gender			
Female	61.93	(61.02 ; 62.83)	$p \leq 0.001$
Male	60.12	(59.36 ; 60.87)	
Geographical Area			
G.M.A. Lisbon*	59.40	(58.55 ; 60.25)	
Centre	64.20	(62.82 ; 65.57)	$p < 0.001$
North	61.68	(60.70 ; 62.66)	

***M* = average; IC = confidence interval; *p* = *p*-value significance level**

*** G.M.A. Lisbon = Greater Metropolitan Area of Lisbon**

Table 6. Place of Birth And Geographical Residential Area

	***n* = 3114**	**% (100)**
Place of Birth		
Portugal	2789	89.56
Europe – other countries	12	0.38
PALOP		
Angola	46	1.48
Cape Verde	127	4.08
Guiné-Bissau	36	1.16
Mozambique	25	0.8
São Tomé e Príncipe	36	1.16
Africa – other countries	3	0.1
America	22	0.71
Asia	18	0.58
Geographical Residential Area		
G.M.A. Lisbon*	1603	51.48
Centre	507	16.28
North	1004	32.24
Districts (Mainland Portugal)		
Aveiro	360	11.56
Braga	215	6.90
Coimbra	98	3.15
Leiria	1	0.03
Lisbon	1496	48.04
Porto	638	20.49
Setúbal	189	6.07
Vila Real	24	0.77
Viseu	93	2.99

* G.M.A. Lisbon = Greater Metropolitan Area of Lisbon

Table 7. Marital Status, Family Typology in Terms of Composition and Support Networks

	***n* = 3114**	**% (100)**
Marital Status*		
Married	1828	58.70
Separated or divorced	224	7.19
Single	412	13.23
Domestic partnerships	96	3.08
Widowed	554	17.79
Family Typology		
Nuclear with children	1447	46.47
Nuclear without children	133	4.27
Extended family	395	12.68
Reconstituted	74	2.38
Single-parent female	223	7.16
Single-parent male	63	2.02
Foster family	10	0.32
Single-person family	354	11.37
In an institution	166	5.33
Co-housing with non-relatives	35	1.12
Another type of family	23	0.74
NA**	191	6.13
Support Networks		
With informal and formal support network	297	9.54
With informal support network	2249	72.22
With formal support network	235	7.55.
With no support network	333	10.69

* The marital status was considered taking into account the de facto (domestic partnership) situation regardless of the legal situation.

**NA = non-available data

Table 8. Housing Typology and Occupation Regimes

	n = 3114	% (100)
Housing Typology		
Collective housing**	166	5.33
Improvised housing*	9	0.29
Mobile housing*	1	0.03
Apartment with a lift	870	27.94
Apartment without a lift	608	19.53
Shack*	10	0.32
House	1385	44.48
Part of a house*	57	1.83
Homeless*	1	0.03
Other***	7	0.22
Occupation Regimes		
Rented	821	26.36
Assigned	180	5.78
Social housing	188	6.04
Illegally occupied	4	0.13
Homeowner with mortgage	249	8.00
Homeowner without mortgage	1630	52.34
Other	42	1.35

* Precarious housing situations

** Collective housing: nursing home, shelter hotel, and guesthouse

*** Other: provisional situation in host family home (of relatives or non-relatives)

Professional Situation

We found that the majority of patients were retired (77.62%), followed by those who were employed (10.6%), and then unemployed (8.6%). The majority of retired people were men (46.11%) and over the age of 65 (57.55%). However, we highlight the fact that 20.07% of the sample were retired under the age of 65. The unemployed and employed people were mostly males of working age **(Table 9)**.

DISCUSSION

The results showed that the majority of the 3114 individuals with CKD were men over 65, and the average age of the women in the sample was higher than the men, a profile that is in line with national health trends (GID, 2017; Macário, 2016). However, the mean age was higher than in a study with samples from several European countries (Locatelli et al., 2004), which may mean an older sick population or a later referral in the Portuguese context. Most of the participants were married, with a significant percentage of widowed people.

The National Health Survey of 2014 (INE, 2016), which studied a sample of 406,460 people with chronic kidney problems (including renal failure), presented a higher prevalence among men. A study conducted in 12 countries (Hecking et al., 2014) corroborates a greater representation of men on hemodialysis treatment, associated with a higher rate of comorbidity with other diseases and with more frequent risk factors. This may have a cultural component, namely the tendency for men to seek medical care in more advanced stages of the disease, particularly as kidney disease is often a "silent disease" in symptomatology (Gomes, Nascimento & Araújo, 2007; Thomé, 2011). The predominant age group poses a set of challenges that are compounded by the problems associated with senescence and social vulnerability factors associated with the elderly.

Geographically, although Lisbon was the area with the largest number of participants, the Centre region registered an older and sicker population in the sample, since it is a geographical area with a higher rate of the aged than the North and Lisbon regions (PORDATA, 2017). Patients from the greater metropolitan area of Lisbon seemed to be younger.

The majority of people undergoing treatment were from Portugal, but there was also a significant number of patients from PALOP, namely Cape Verde, Angola, São Tomé e Príncipe and Guinea-Bissau because of international healthcare agreements that were established between Portugal and these countries. Patients of other nationalities (other European and African countries, American and Asian countries) comprised less than 2% of the patients (general immigrants). Patients from PALOP are displaced for treatment, younger, and are more concentrated in the Lisbon area, contributing to a lower age range in this area than in the North and Centre regions. In an additional analysis of the average age of a sub-sample of 249 PALOP patients, we found that 119 were undergoing treatment through the international agreements, but 130 were not covered by those same agreements, with an average age of 48.9 for covered and 58 not covered; those from Angola were the youngest in both groups. Although the statistics in Portugal did not classify the race and the ethnicity of these populations, the African origin of these individuals could indicate a set of social disadvantages, pointed to by other studies of the differences between white and black people in CKD rates and outcomes explained by the social determinants of each group (Norton et al., 2016), as well as disparities in CKD incidence, prevalence and progression across different socioeconomic, racial and ethnic groups (Nicholas, Kalantar-Zadeh, & Norris, 2015), appearing to be relevant cultural differences affecting our study. This group of patients presented specific monitoring and support needs, taking into account the marked cultural differences, the uprooting from their communities of origin, and issues of integration into a new population. It will be very important to examine this variable, backed by clinical data, in future studies.

Most of the patients were part of nuclear families with children, the most common families in the Portugal (PORDATA, 2017). Two typologies also emerged, which deserve our attention: those who lived alone (single-person families) and those who represented single-parent families, located mostly in urban centers. These two family compositions have increased significantly in Portugal in the last decades, with specific implications for those who deal with a chronic disease that has a high impact on daily life (Delgado & Wall, 2014; PORDATA, 2017). Those who live alone do not have someone, on a permanent basis, to care for them. Whereas in single-parent families, the patients accumulate non-shared care roles for their children which can make it difficult to reconcile family life with treatments and self-care.

Regarding support networks, we found that the majority of patients had an informal support network, and a minority relied exclusively on a formal support network. It should be noted that in 10.69% of cases no source of support was identified. As the study population was mostly elderly, these results reveal the informal, essentially familial, nature of elderly subjects' networks in Portugal (Cabral, Ferreira, Silva, Jerónimo, & Marques, 2013). It should be noted that 5.33% of the participants were institutionalized, and that 11.37% lived alone, which may generally justify the use of formal networks as a source of primary support or in coordination with their informal networks. Social support is fundamental in situations of illness (Guadalupe, 2012), either to favor the adaptation to treatment or to enhance the access to resources; effective support is associated with better medical outcomes in hemodialysis patients (Boyer et al., 1990) and is a predictor of survival, because of the importance of psychosocial risk factors in mortality of dialysis patients (Thong, Kaptein, Krediet, Boeschoten, & Dekker, 2007). Social workers must increase efforts to improve social support for these patients, focusing on those who do not have support networks, those with small networks, and those with weak support.

Table 9. Professional Situation by Age Group and Gender

	Unemployed with benefits*	Unemployed without benefits**	Domestic	Employed	Student	Inmate	Retired
N = 3114	*n* = 20 (0.64%)	*n* = 248 (7.96%)	*n* = 68 (2.18%)	*n* = 330 (10.60%)	*n* = 30 (0.96%)	*n* = 1 (0.03%)	*n* = 2417 (77.62%)
Age Group							
< 25	0 (0)	7 (0.22)	0 (0)	4 (0.13)	6 (0.19)	0 (0)	1 (0.03)
25 – 44	7 (0.22)	71 (2.28)	3 (0.10)	101 (3.24)	19 (0.61)	0 (0)	79 (2.54)
45 – 64	13 (0.42)	141 (4.53)	23 (0.74)	192 (6.17)	3 (0.10)	0 (0)	545 (17.5)
65 – 84	0 (0)	28 (0.90)	37 (1.19)	32 (1.03)	2 (0.06)	1 (0.03)	1536 (49.33)
85+	0 (0)	1 (0.03)	5 (0.16)	1 (0.03)	0 (0)	0 (0)	256 (8.22)
Gender							
Female	4 (0.13)	117 (3.76)	67 (2.15)	85 (2.73)	8 (0.26)	0 (0)	981 (31.5)
Male	16 (0.51)	131 (4.21)	1 (0.03)	245 (7.87)	22 (0.71)	1 (0.03)	1436 (46.11)

* Unemployed with unemployment benefits

** Unemployed without unemployment benefits

Regarding the educational level of the population under analysis, we found that most of the had a basic education level (1 to 6 years), which was essentially related to the dominant age group of the participants. Lower educational level is associated with lower economic resources and fewer opportunities to access healthcare services (Costa, Baptista, Perista, Carrilho, & Carmo, 2008; Cotta et al., 2007), as well as problematic and inadequate levels of poorer health literacy, and are associated with poor health. Additionally, low health literacy may also promote lower treatment adherence and self-care (Pedro, Amaral, & Escoval, 2016). The selection of treatment modality can also be determined by social variables, such as education, autonomy, and social support systems (Stack, 2002), which reinforces the need for social workers in the multidisciplinary healthcare team.

When we analyzed patients' occupational situations, we had to consider that the majority of participants in the study were retired. It is important to note that only 20.7% of the patients were retired, though 39.02% of the population were under the age of 65. Therefore, a relevant proportion of the retired patients, of an active working age, were unable to work because of the disease. Among the unemployed, there was a higher number of long-term unemployed without benefits, who had gone beyond the guaranteed period in which the benefits were available, than unemployed with active benefits. This was due to the difficulty CKD patients encounter finding a job compatible with their limitations and flexible for treatment times. CKD represents significant implications for the difficulty or even inability to return to the labor market, and we know that work status and income level influences quality of life, progression, and treatment (Kao et al., 2009).

The decrease in income level because of chronic illness is generally irrecoverable, and makes patients and their families vulnerable (Kao et al., 2009); it is difficult to fully compensate for this situation through the available social protection measures and policies, necessitating continuing social work advocacy.

CONCLUSION

In summary, the sociographic profile of 3114 subjects with chronic renal failure undergoing hemodialysis treatment in Portugal indicates that the majority were men, over the age of 65, married, with basic educational level. They were homeowners, lived in apartments or houses, retired, born in Portugal, and resided in the greater metropolitan area of Lisbon. They were part of nuclear families with children and had mainly informal support networks.

However, a representative profile, in line with the national statistics, does not point out obvious social problems present in several minority profiles, with indicators that point to situations of social vulnerability. The percentage of unemployed patients, those who presented with precarious housing, who were displaced PALOP patients, those who lived alone, who had single-parent families, or did not have any source of informal or formal support was highly relevant. Under current conventions and agreements, PALOP patients are not provided with any kind of formal support. Their displaced situations and the demands of treatment make it difficult to create informal social ties. Due to these facts, they became a vulnerable population with weak support systems, and are a special target for social work interventions.

The sample size and the lack of literature defining the sociographic profile of the hemodialysis patient population in Portugal give this study particular importance in promoting knowledge and redefining social and clinical interventions. The present study constitutes the first step towards an analytical broadening and deepening of these patient characteristics, allowing us to consider a set of hypotheses, as well as the correlational exploration with other relevant variables in treatment and follow-up for these patients, namely the study of associations between clinical, social, and psychosocial aspects.

The complexity of social work interventions is determined, in part, by the diversity of social profiles presented by patients, and is crucial to categorizing the population to determining groups at higher risk and needing social work interventions (Dobrof et al., 2002; Furr, 1998). We consider that knowledge of these sociographic profiles is decisive in improving specific social work intervention programs, as well as organizational and social policy measures that are able to meet the needs of those who are ill and to promote their individual and social well-being.

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Psychometric Evaluation of the Kidney Disease Quality of Life 36-Item Survey Instrument (KDQOL-36): A Comparison Between Older and Younger Adults Receiving Dialysis

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Medicare requires that dialysis units assess quality of life in all patients annually using the Kidney Disease Quality of Life 36-item survey instrument (KDQOL-36). However, whether the KDQOL-36 is a valid instrument for older adults receiving dialysis is not known. The objective of this study was to evaluate the reliability and validity of the KDQOL-36 in both older and younger patients receiving dialysis. We used KDQOL-36 item responses from a nationally representative sample of 3500 older (≥ 75 years) and 500 younger (ages 21 to 74 years) patients receiving dialysis in 2012. We assessed subscale means, ceiling/floor effects, internal consistency reliability, and construct validity. Results demonstrated that the KDQOL-36 has comparable reliability and validity in older and younger adults receiving dialysis.

INTRODUCTION

The Centers for Medicare and Medicaid Services (CMS) requires annual assessments of quality of life for patients on dialysis. As both a clinical performance measure for its Quality Incentive Program and a quality measure for its Comprehensive End-Stage Renal Disease (ESRD) Care Initiative, annual assessments of quality of life are accomplished using a standard instrument that has been validated in dialysis patients—the Kidney Disease Quality of Life 36-item survey instrument (KDQOL-36). Although CMS requires its use with all patients on dialysis, the instrument was initially validated in a relatively young cohort of dialysis patients; only 10% of the initial validation cohort was aged ≥ 75 years (Hays, Kallich, Mapes, Coons, & Carter, 1994). This is an important limitation because adults aged ≥ 75 years constitute at least 30% of prevalent dialysis patients in the United States and represent a large proportion of patients initiating dialysis (Canaud et al., 2011; Jassal & Watson, 2009; U.S. Renal Data System [USRDS], 2014). It is particularly important to have a validated instrument for measuring quality of life in older adults receiving dialysis, due to limited life expectancy and high prevalence of functional and cognitive impairment, with a resulting need for shared decision-making about dialysis discontinuation or change in modality (Fried, O'Leary, Van Ness, & Fraenkel, 2007; Holley, 2007; Kurella Tamura et al., 2009; Murray et al., 2006; Rosansky et al., 2017). In addition to advanced care planning, validated measures are important for assessing novel therapies aiming to enhance quality of life in older dialysis patients.

There are several reasons to suspect that the KDQOL-36 may not perform as well with older patients. KDQOL-36 items cover five domains of quality of life (physical function, mental function, burden of kidney disease, symptoms and problems of kidney disease, and effect of kidney disease on daily life), but these items may yield different responses in older dialysis patients because they tend to have fewer regular daily activities, more physical limitations, and symptoms attributable to geriatric syndromes (Berger & Hedayati, 2012; Bowling et al., 2014; Hays et al., 1994). These differences may also lead to disproportionate floor or ceiling effects, missingness, or other psychometric issues, resulting in poor test performance in the oldest and most vulnerable dialysis patients (Hickey, Barker, McGee, & O'Boyle, 2005). As clinicians, investigators, and policy makers have a growing interest in using patient-reported outcomes in dialysis settings (Peipert & Hays, 2017), it is essential to investigate the psychometric performance of the KDQOL-36 in older adults. We compared the reliability and validity of the KDQOL-36 in older versus younger patients receiving maintenance dialysis.

METHODS

Study Design and Population

We conducted a psychometric evaluation of the KDQOL-36 using data extracted from a large dialysis organization's (LDO) clinical database. We used random selection to identify a nationally representative cohort of 4000 dialysis patients: 3500 of whom were age ≥ 75 years and 500

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of whom were age 21 to 74 years on January 1, 2012. We included a larger number of older patients to account for greater expected variability in functional and frailty status at older ages; however, financial constraints limited our ability to source a comparable number of younger patients in the cohort. All cohort members received care at dialysis units owned by a single LDO and completed at least one KDQOL-36 assessment in 2012. Social workers either supplied a paper copy of the KDQOL-36 for self-administration or they helped patients to fill it out if they were unable to self-administer. The KDQOL-36 was administered to all patients who were able to understand the questions (i.e., patients who did not have severe cognitive impairment). The Duke University Institutional Review Board approved this study.

Variables

Developed to be a shorter instrument than the KDQOL Short Form (KDQOL-SF), the KDQOL-36 is a 36-item instrument with five subscales: 1) SF-12 physical component score (PCS) (items 1 to 12); 2) SF-12 mental component score (MCS) (items 1 to 12); 3) burden of kidney disease (items 13 to 16); 4) symptoms of kidney disease (items 17 to 28); and 5) effects of kidney disease (items 29 to 36) (Hays et al., 1995). For each subject, we used item responses from a single KDQOL-36 assessment that they completed in 2012 to calculate subscale scores (range = 0–100) from individual item responses using standardized formulae. There is no validated composite score for the five KDQOL-36 subscales in routine clinical use.

Additional variables available for the cohort included: 1) demographics [age, race, and gender]; 2) insurance status [Medicare vs. Medicare/Medicaid coverage (i.e., dual-eligibility status)]; 3) laboratory data [hemoglobin, Kt/V (a measure of dialysis adequacy; values > 3.5 considered implausible and not included in analyses), and albumin levels at the time of KDQOL-36 assessment]; and 4) dialysis characteristics [modality (hemodialysis vs. peritoneal dialysis (PD), hemodialysis access type (catheter, arteriovenous fistula (AVF) or arteriovenous graft (AVG), and time on dialysis at the time of KDQOL-36 assessment]. To describe comorbidity burden, we used the most recent Charlson comorbidity index recorded in the LDO's clinical data warehouse from patients' medical history as of January 1, 2012.

Statistical Analysis

We compared the demographic and clinical characteristics by age group using t-tests or chi-square tests, as appropriate. For each age group, we summarized subscale scores by calculating mean and standard deviation and used t-tests to compare scores by age group. We examined the psychometric properties shown in **Table 1.** We assessed for floor and ceiling effects by calculating the percentage of responses within the lowest and highest scores of each KDQOL-36 subscale; we considered floor or ceiling effects to be present if more than 15% of responses were at the lowest or highest scores of each subscale (Terwee et al., 2007). We assessed missingness by calculating the proportion of respondents with one or more missing responses in each subscale. Because the SF-12 has been extensively validated in prior studies, we evaluated internal consistency reliability of only the three kidney disease-specific subscales through corrected item-total correlations. Corrected item-total correlations, as determined by polyserial correlations, reflect the strength of relationship between each KDQOL-36 item and its assigned domain subscale score, not including the item itself (Olsson, Drasgow, & Dorans, 1982). Strong corrected item-total correlations (0.5 or higher) are preferred. For construct validity, we determined Pearson correlation coefficients between KDQOL-36 subscale scores and biological markers that have previously been associated with quality of life, specifically, hemoglobin, Kt/V, and albumin levels (Lacson et al., 2009; Lopes et al., 2007; Spiegel, Melmed, Robbins, & Esrailian, 2008). We performed analyses with Stata version SE 14, and used an unadjusted *P* value of 0.05 (StataCorp, 2015).

RESULTS

Cohort Characteristics

The average age of younger members of this cohort was 52.2 years [standard deviation (SD) = 10.2] (range, 28–74), as compared with 80.5 years (SD = 4.4) (range, 75–102) for older members. Compared to the younger cohort, the older cohort had a higher proportion of Caucasian race and female gender, shorter dialysis vintage, lower hemoglobin, lower albumin, higher Charlson index, smaller proportion receiving PD, and larger proportion of hemodialysis patients with AVF (**Table 2**). All older members of this cohort had Charlson index scores ≥ 5, indicating a high prevalence of patients with multimorbidity likely to have functional dependence and/or frailty.

Subscales Scores, Ceiling and Floor Effects, and Missingness

Figure 1 depicts subscale scores for each age group. Mean subscale scores show that younger and older cohort members scored similarly on the symptom subscale and SF-12 (short form) MCS (mental component score) (**Table 3**). Compared to younger patients, older patients had higher mean scores [74.30 (SD = 21.18) vs. 72.14 (SD = 22.10)] on the effects of kidney disease subscale (indicating fewer issues with how kidney disease affected their daily lives) and lower mean scores [52.54 (SD = 29.37) vs. 56.09 (SD = 29.02)] on the burden of kidney disease subscale (indicating greater sense of burden from having kidney disease) and the SF-12 PCS (physical component score) [34.53 (SD = 9.96) vs. 38.69 (SD = 10.55)] (indicating poorer self-reported physical health). Ceiling and floor effects were not present for any of the five subscales. For all subscales, older cohort members generally had more missing responses than younger cohort members. The effects of kidney disease subscale had the highest proportion of missing responses among both younger and older cohort members.

Internal Consistency Reliability

For both age groups, each kidney disease-specific item of the KDQOL-36 correlated most highly with its hypothesized subscale (**Table 4**) (Korevaar et al., 2002). For the burden subscale, correlation coefficients of Items 13 to 16 ranged from 0.58 to 0.79 for the younger cohort members and 0.63 to 0.77 for the older cohort members. For the symptom subscale, correlation coefficients of Items 17 to 28 ranged from 0.40 to 0.66 for the younger cohort members and 0.41 to 0.63 for the older cohort members. For the effects subscale, correlation coefficients of Items 29 to 36 ranged from 0.49 to 0.71 for the younger cohort members and 0.46 to 0.69 for the older cohort members.

Construct Validity

Subscale scores were not correlated with contemporaneous albumin, hemoglobin, or Kt/V levels. Across subscales and biomarkers, the correlation coefficients ranged from < 0.01 to 0.12 and -0.03 to 0.11 among older and younger cohort members, respectively.

DISCUSSION

To our knowledge, this is the first study designed to compare the psychometric properties of the KDQOL-36 between older (age ≥ 75 years) and younger (ages 21 to 74 years) adults receiving dialysis. For both older and younger adults, we show the KDQOL-36 subscales have minimal floor effects, ceiling effects, and missingness, as well as good internal consistency reliability. This is consistent with a recent study (Peipert, Bentler, Klicko, & Hays, 2017). Also, construct validity with biological markers known to be associated with quality of life was absent in both age groups. However, mean scores differed by age group in three subscales (effects of kidney disease, SF-12 PCS, and burden of kidney disease) (**Figure 1**), suggesting that the quality of life experiences for older and younger patients receiving dialysis are different. Although scores may differ by age groups, the KDQOL-36 has good psychometric performance in patients of all ages for routine quality of life assessments.

The differences in subscale scores we observed are largely consistent with other published studies that report on quality of life. In a peritoneal dialysis cohort, Griva et al. reported higher scores among older vs. younger adults on the effects of kidney disease subscale (Griva et al., 2014). A separate study revealed that older patients scored better on a satisfaction with life scale than their younger counterparts, and argued that greater life satisfaction or differing expectations may account for older patients having higher scores on the effects of kidney disease subscale (Kimmel et al., 1995). Alternatively, older adults on dialysis may represent a select group of individuals who have selected dialysis over palliative care, based on lower symptom burden. Regarding physical health, several studies show that older adults report poorer physical health (lower SF-12 PCS score) than younger patients (Mingardi et al., 1999). Regarding burden of kidney disease, one study demonstrated that dialysis patients with lower physical health scores (SF-36 PCS) tended to have greater concern for being a burden on caregivers (Suri et al., 2011). Older adults also tend to report that the process of traveling to and from dialysis and the treatment itself is a burden and may even affect decisions about whether to initiate and discontinue dialysis treatments (Aggarwal & Baharani, 2014; Johnston & Noble, 2012). Thus, older and younger adults may have different perceptions of factors that are important to their quality of life. Further research is needed to determine quality-of-life domains of greatest importance to older adults receiving dialysis.

Although prior studies demonstrate associations between albumin, hemoglobin, and Kt/V levels and quality of life, we found that KDQOL-36 subscales are not correlated with these markers in either older or younger patients, suggesting that these biological markers and subscales scores measure different constructs. Average values for each of these biological markers approached clinical practice goals, but members of our cohort seldom reported the highest score on any of the KDQOL-36 subscales. This finding implies that achievement of target levels of albumin, hemoglobin, and/or Kt/V may not be sufficient to ensure patients will report good quality of life on the KDQOL-36.

Our study has implications for dialysis social work practice. Currently, social workers present subscale scores to patients and highlight low scores as areas for improvement. To facilitate that communication with patients aged ≥ 75 years, social workers can compare their patients' subscale scores to the average subscale scores that we identified (**Table 2**). Because we found that both the SF-12 physical component score and the burden of kidney disease scores were significantly lower in patients aged ≥ 75 years, compared to younger patients < 75, social workers could also proactively plan clinical and/or psychosocial interventions that enhance these quality-of-life domains. Because older adults may interpret KDQOL-36 items differently than younger patients, social workers would likely understand more about quality of life in older patients by using specific KDQOL-36 item responses as a starting point to inform in-depth conversations about the patient's well-being and what matters most to them.

Our study has limitations. First, all subjects received care from dialysis units belonging to a single LDO in the U.S. The characteristics of patients in this cohort are similar to those of the overall U.S. dialysis population, but may differ from older adults receiving dialysis in other countries by race/ethnicity, comorbidity burden, and age distribution (Canaud et al., 2011). Second, our cohort was limited to subjects who had KDQOL-36 responses, so we could not report on the KDQOL-36's performance among patients who did not have any KDQOL-36 responses or how those patients may differ from our study cohort. Still, our findings are representative because the KDQOL-36 annual assessment is routine for all patients, excluding those with significant cognitive impairment who would need a different approach to assessing quality of life. Last, we did not have access to serial KDQOL-36 assessments in our dataset, so were unable to compare

test-retest reliability or responsiveness to change across age groups. However, prior studies have demonstrated that KDQOL scores can change over time (Bakewell, Higgins, & Edmunds, 2002; Hall et al., 2012).

In summary, the KDQOL-36 appears to be a valid instrument for assessing quality of life in adults aged ≥ 75 years who receive dialysis. As a result, it should remain a valuable tool to inform individualized care that optimizes quality of life in these patients.

RELEVANCE TO NEPHROLOGY SOCIAL WORKERS

Nephrology social workers have the critical role of routine administration of the KDQOL-36 in dialysis units. Although the KDQOL-36 is administered to adult patients of all ages, there is reasonable concern that the KDQOL-36 may not assess quality of life appropriately in older dialysis patients. The study answers the following question: does the KDQOL-36 uncover valid information for both older and younger patients? This study revealed that the KDQOL-36 items and their related subscale scores actually do measure the same underlying aspects (or constructs) of quality of life in both older and younger patients. Thus, the KDQOL-36 subscale scores are useful for both age groups, even if older patients may report lower scores in some subscales. Practically, this study supports continued use of the KDQOL-36 in adult patients of all ages. However, if there is suspicion of worsening quality of life in an older dialysis patient that may not be reflected by their KDQOL-36 subscale scores, nephrology social workers are highly encouraged to ask the patient additional questions beyond the KDQOL-36.

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Table 1. Description of Approach to Psychometric Evaluation of KDQOL-36

Psychometric Property	Research Question	Approach
Ceiling or floor effects	Are there ceiling and floor effects more common among older patients?	Proportion of subscale responses with highest or lowest score
Missingness	Is missingness more common among older adults?	Proportion of items missing within each subscale
Internal consistency reliability	In both age groups, are KDQOL-36 items assigned to the appropriate subscale in both age groups?	Corrected item-total correlations of each item with each kidney-specific subscale score
Construct validity	In both age groups, do the KDQOL-36 subscale scores correlate with biological markers associated with quality of life?	Correlations of KDQOL-36 subscale scores with Kt/V, hemoglobin, and albumin levels

Table 2. Characteristics Of Cohort, Overall And By Age Group

Variable	Total sample (N = 4,000)	75+ years (n = 3,500)	21–74 years (n = 500)	P-value
Demographic characteristics				
Age, year	77.0 (10.9)	80.5 (4.4)	52.17 (10.2)	< 0.001
Race, *n* (%)				< 0.001
Caucasian	1,889 (47.2)	1,786 (51.0)	103 (20.6)	
African-American	1,288 (32.2)	988 (28.2)	300 (60.0)	
Hispanic	533 (13.3)	466 (13.3)	67 (13.4)	
Other	289 (7.2)	259 (7.4)	30 (6.0)	
Men, *n* (%)	2,046 (51.2)	1,770 (50.6)	276 (55.2)	0.053
Insurance status, ***n*** (%)				< 0.001
Medicare only	2,884 (72.1)	2,655 (75.9)	229 (45.8)	
Dual Eligible	1,020 (25.5)	798 (22.8)	222 (44.4)	
Other/None[a]	96 (2.4)	47 (1.3)	49 (9.8)	
Medical history				
Time on Dialysis (years)	6.9 (4.5)	5.9 (2.9)	14.1 (7.0)	< 0.001
Kt/V	1.7 (0.3)	1.7 (0.3)	1.7 (0.4)	0.880
Hemoglobin (g/dL)	10.9 (1.1)	10.8 (1.0)	11.0 (1.5)	0.006
Albumin (gm/dL)	3.9 (0.4)	3.9 (0.4)	4.0 (0.4)	< 0.001
Charlson Comorbidity Index	7.0 (1.8)	7.4 (1.3)	4.0 (1.6)	< 0.001
Modality, *n* (%)				< 0.001
Hemodialysis	3,814 (95.4)	3,358 (95.9)	456 (91.2)	
Peritoneal dialysis	185 (4.6)	141 (4.0)	44 (8.8)	
Access type among hemodialysis patients, *n* (%)				< 0.001
Catheter	380 (10.0)	318 (9.5)	62 (13.6)	
Arteriovenous fistula	2,392 (62.7)	2,160 (64.3)	232 (50.9)	
Arteriovenous graft	1,041 (27.3)	879 (26.2)	162 (35.5)	

[a]Other/None includes patients with only state Medicaid insurance (n = 59), other (private medical insurance), or no documented medical insurance.

Table 3. Central Tendency, Floor And Ceiling Effects, And Missingness Of KDQOl-36 Subscale Scores By Age Group

	Mean (SD) Score[a]		Ceiling (%)[b]		Floor (%)[b]		Missing responses (%)[c]	
KDQOL-36 Subscale	75+ years	21–74 years	75+ years	21–74 years	75+ years	21–74 years	75+ years	21–74 years
Burden of kidney disease	**52.54 (29.37)**	**56.09 (29.02)**	307 (8.9)	55 (11.1)	158 (4.6)	14 (2.8)	73 (2.1)	6 (1.2)
Symptoms/ problems	78.2 (15.72)	77.65 (16.38)	119 (3.4)	18 (3.6)	0 (0.0)	1 (0.0)	344 (9.8)	39 (7.8)
Effects of kidney disease	**74.30 (21.18)**	**72.14 (22.10**)	365 (10.4)	53 (10.7)	5 (0.1)	0 (0.0)	461 (13.2)	42 (8.4)
Physical component score	**34.53 (9.96)**	**38.69 (10.55)**	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	175 (5.0)	23 (4.6)[d]
Mental component score	50.96 (10.33)	50.18 (10.41)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)		

Data expressed as *n* (%), unless otherwise specified. Significant group differences in mean subscale score ($p < .05$) indicated in bold.

[a] Range of subscale scores is 0 to 100. Higher score indicated better quality of life.

[b] % of patients with highest possible subscale score (100) or lowest possible subscale score (0). Ceiling or floor effect is present if > 15% responses were at the lowest or highest scores of each subscale.

[c] % of respondents with 1+ missing responses in subscale

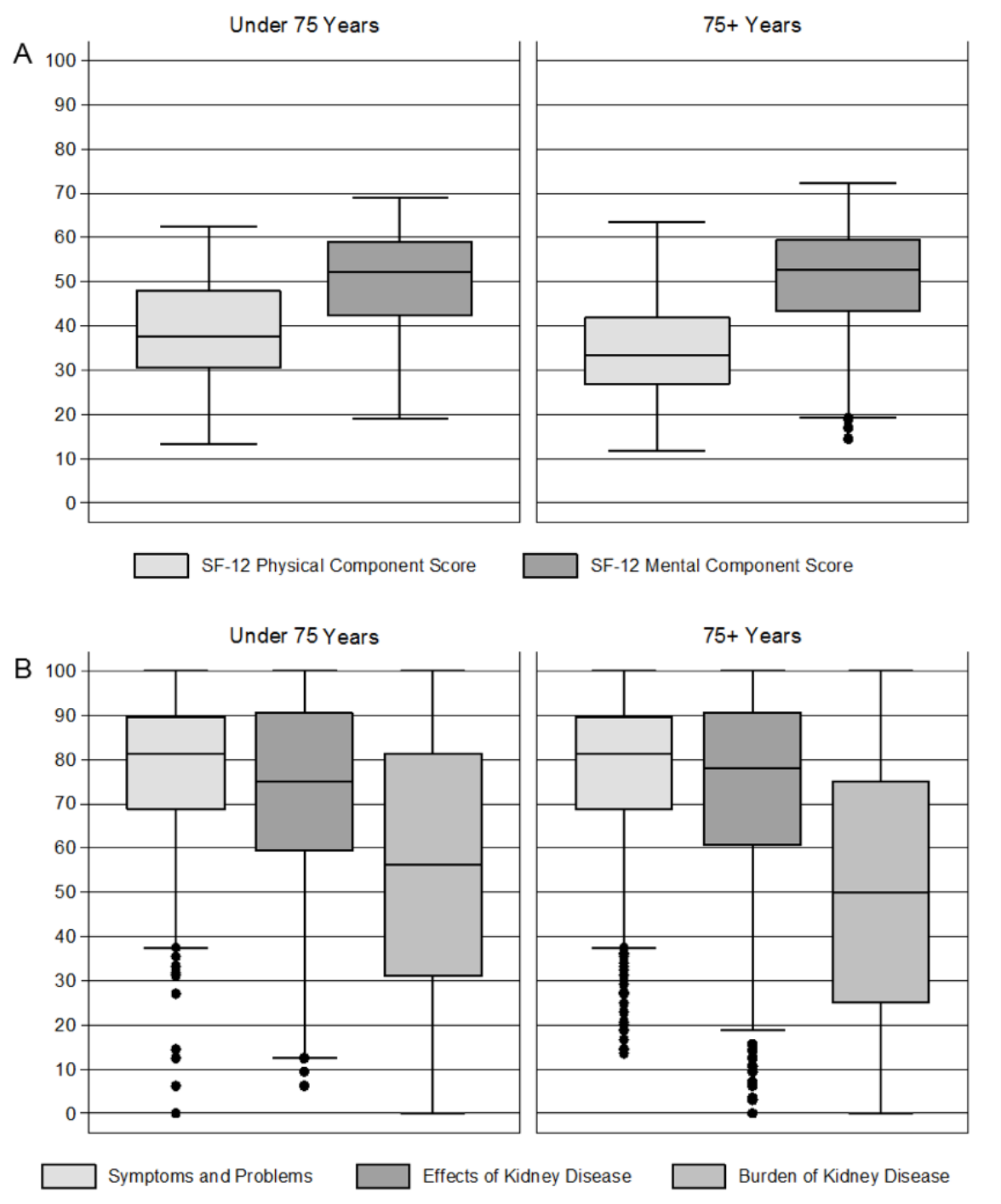
[d] % of missingness is identical for both SF-12 physical component score and mental component score.

Table 4. Corrected Item-total Correlation Matrix by Age Group

	21–74 YEARS			75+ YEARS		
Variable	**Symptoms**	**Effects**	**Burden**	**Symptoms**	**Effects**	**Burden**
Item 13			.76			.74
Item 14			.79			.77
Item 15			.78			.77
Item 16			.58			.63
Item 17	.51			.53		
Item 18	.59			.48		
Item 19	.49			.46		
Item 20	.47			.52		
Item 21	.53			.55		
Item 22	.61			.53		
Item 23	.57			.53		
Item 24	.43			.46		
Item 25	.66			.63		
Item 26	.50			.52		
Item 27	.58			.56		
Item 28	.40			.41		
Item 29		.58			.58	
Item 30		.55			.59	
Item 31		.61			.65	
Item 32		.67			.66	
Item 33		.67			.67	
Item 34		.71			.69	
Item 35		.49			.46	
Item 36		.63			.59	

Calculations for corrected item-total correlation matrix involved pairwise deletion so there was variation in the number of subjects included in each calculation. For those aged 21–74 years, number of subjects varied from 481 to 497. For those aged ≥ 75 years, number of subjects varied from 3137 to 3449.

Figure 1. Kidney Disease Quality of Life (KDQOL-36) Subscale Scores by Age Group



Panel A shows the distributions of SF-12 Physical Component Score (PCS) and SF-12 Mental Component Score (MCS) for patients aged ≥ 75 years and patients aged 21–74 years.

Panel B shows the distributions of the scores in three kidney disease-specific subscales (symptoms/problems; effects of kidney disease; and burden of kidney disease) for patients aged ≥ 75 years and patients aged 21–74 years.

Nephrology Social Workers' Caseloads and Hourly Wages in 2014 and 2017: Findings from the National Kidney Foundation Council of Nephrology Social Workers Professional Practice Survey ✯

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In 2014 and 2017, the National Kidney Foundation Council of Nephrology Social Workers (NKF-CNSW) conducted online surveys of nephrology social workers employed in outpatient dialysis settings and transplant programs to assess caseload and salary trends at the state, national, and End-Stage Renal Disease Network levels. Between 2014 and 2017, the mean caseloads for outpatient dialysis social workers remained steady at 75 for those employed 20–31 hrs/wk, increased from 113.2 to 126.9 (up 12.1%) for those employed 32–40 hrs/wk, and increased from 116.1 to 129.5 (up 11.5%) for those employed 40 hrs/wk. Median caseloads showed a similar pattern between 2014 and 2017 for those employed 32–40 hrs/wk (110.0 to 120.0; up 9.1%) and for those employed 40 hrs/week (117.0 to 120.0; up 2.6%). Increases in mean hourly wage between 2014 and 2017 were also reported across all three employment status groups: $29.45 to $31.31 per hour (up 6.3%) for those working 20–31 hrs/wk, $28.23 to $30.62 per hour (up 8.5%) for those working 32–40 hrs/wk, and $28.21 to $30.48 per hour (up 8.0%) for dialysis social workers employed 40 hrs/wk.

Annual pre-transplant evaluations of potential donors increased between 2014 and 2017 for transplant social workers who were employed full time (32–40 hrs/wk) and those who worked 40 hrs/wk. Specifically, the mean number of potential donor evaluations increased from 22.1 to 33.8 (up 52.9%) for those employed 32–40 hrs/wk and 23.0 to 33.8 (up 46.9%) for those employed 40 hrs/wk. Pre-transplant evaluations of potential recipients decreased for those employed full-time (283.7 to 219.2, down 22.7%) and for those employed 40 hrs/wk (315.6 to 219.2, down 30.5%). Mean hourly wage data showed an increase for transplant social workers employed full time ($30.74 to $31.50, up 2.5%) and for those employed 40 hrs/wk ($28.74 to $31.03, up 7.9%). In general, increases in social work caseloads and increases in hourly wages were found on a national level; however, variability in mean caseloads and mean hourly wages across ESRD Networks and states persists.

INTRODUCTION

Nephrology social workers occupy a unique and vital role on interprofessional teams in renal care settings. The inclusion of a social worker on these teams is mandated in dialysis facilities by the Centers for Medicare and Medicaid Services' (CMS) Conditions for Coverage (CfC) for End Stage Renal Disease Facilities (Medicare and Medicaid Programs; Conditions for Coverage for End-Stage Renal Disease Facilities, 2008) and in transplant programs by CMS's *Hospital Conditions of Participation*: *Requirements for Approval and Re-Approval of Transplant Centers to Perform Organ Transplants* (Medicare Program; Hospital Conditions of Participation, 2007). Specifically, these federal guidelines stipulate that a Master's-prepared social worker from an accredited program must be included in every U.S. dialysis facility and kidney transplant center because of the many psychosocial barriers to optimal dialysis and transplant outcomes (Browne, 2012; Cukor, Cohen, Peterson, & Kimmel, 2007).

The primary role of social workers in dialysis and kidney transplant settings is to assist patients with a range of psychosocial barriers to positive outcomes and help them manage the often complex aspects of their renal replacement therapy (Browne, 2012). Some of the main interventions provided by social workers include patient and family education, supportive counseling, crisis intervention, case management, interdisciplinary care planning and collaboration, and patient advocacy (Browne, 2012; Dobrof, Dolinko, Lichtiger, Uribarri, & Epstein, 2001; McKinley & Callahan, 1998; McKinley, Schrag, & Dobrof, 2000; Merighi & Ehlebracht, 2004a, 2004b, 2004c; Russo, 2002; Wolfe, 2011). In the case of dialysis patients, social workers are especially qualified to assist with depression (McCool et al., 2011; Sledge et al., 2011), pursuit of living kidney donation (Boulware et al., 2013), and missed dialysis treatments (Medical Education Institute, 2004). For kidney transplant patients, social workers are skilled in assessing aspects of transplant suitability, providing assistance to helping patients navigate transplant barriers, help patients self-manage their immunosuppressive medications, and being living donor advocates for the patients (Browne, 2012; Harder, Klein, Peace, Browne & Sparks, 2006; Prendergast & Gaston, 2010).

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To assist patients with end-stage renal disease, nephrology social workers must have adequate time and resources to complete required documentation and provide their patients with psychosocial support services as mandated by CMS. Research has shown that high caseloads can hinder dialysis social workers' abilities to provide adequate clinical services to their patients (Merighi, 2012; Merighi & Ehlebracht, 2002) and result in job dissatisfaction and burnout for social workers in general (Hamama, 2012; Lloyd, King, & Chenoweth, 2002; Thomas, Kohli, & Choi, 2014). Nephrology social workers' caseloads in dialysis units often exceed the National Kidney Foundation Council of Nephrology Social Workers (NKF-CNSW) recommendation of 75 patients per full-time social worker (Merighi & Browne, 2015; Merighi, Browne, & Bruder, 2010; Merighi & Ehlebracht, 2004a; NKF-CNSW, 1998, 2014). Although study findings have shown that large patient caseloads are associated with decreased patient satisfaction and reduced patient access to rehabilitation services (Callahan, Moncrief, Wittman, & Maceda, 1998), dialysis social workers continue to be responsible for caseloads that exceed the CNSW recommendation. Further, as the population of patients on dialysis comes to include a greater proportion of medically and psychosocially complex cases, social workers will be further challenged in providing essential services to their patients in accordance with the 2008 CfC.

Nephrology social workers have reported that large caseloads hindered their ability to provide clinical interventions (Bogatz, Colasanto, & Sweeney, 2005). Social work respondents in the study by Bogatz et al. reported caseloads as high as 170 patients, and 72% had a median caseload of 125 patients. The researchers found that 68% of social workers did not have enough time to do casework or counseling; 62% did not have enough time to do patient education; and 36% said that they spent excessive time doing clerical, insurance, and billing tasks. One participant in their study stated: "the combination of a more complex caseload and greater number of patients to cover make it impossible to adhere to the federal guidelines as written. I believe our patients are being denied access to quality social work services" (Bogatz et al., 2005, p. 59). Merighi (2012) corroborated Bogatz et al.'s (2005) findings, based on data obtained from a national sample of 231 part-time and 1,091 full-time dialysis social workers. Specifically, he found that 70.4% of part-time and 76.6% of full-time workers reported that they had insufficient time to provide psychosocial services to patients. In addition, since the implementation of the 2008 CfC, 41.2% of part-time and 50.1% of full-time social workers reported an increase in their patient caseloads, and 80.2% of part-time and 85.9% of full-time respondents reported an increase in their job tasks. Approximately one-half (49.2%) of full-time social workers indicated being somewhat or very dissatisfied with their caseloads, and more than one-half of part-time (50.4%) and full-time (52.8%) social workers indicated being somewhat or very dissatisfied with their job tasks. Qualitative comments provided by 406 of the survey respondents offered insights into day-to-day social work practice in dialysis clinics after the 2008 CfC. In particular, these respondents discussed increases in paperwork expectations, loss of patient contact, increased workload demands, and job dissatisfaction.

NKF-CNSW conducted four national online salary and caseload surveys of nephrology social workers in 2007, 2010, 2014, and 2017. These surveys examined the work characteristics and experiences of dialysis and transplant social workers in the United States so that the findings could be used, in part, to advocate employers for improved work conditions (e.g., lower caseloads, clerical assistance). The data gathered in these surveys document key trends in nephrology social workers' caseloads and salaries over a 10-year period. Although most of the findings summarized in this article are for dialysis social workers, national-level data are provided for kidney transplant social workers with regard to work with potential organ donors and recipients, hourly wages, and annual salaries. The aim of the current study was to gather 2017 caseload and hourly wage data and compare them to national survey findings obtained in 2014.

METHOD

Study Design

A cross-sectional research design was used to conduct an online survey of nephrology social workers in the United States.

Respondents

Dialysis Social Workers – Part Time. 131 part-time (i.e., 20–31 hrs/wk) outpatient dialysis social workers responded to this study. The sample was 93.2% White, 0.8% Native American, 1.7% African American, 2.5% Asian/Pacific Islander, and 1.8% other/mixed race. Respondents who identified as Hispanic or Latino/a comprised 3.4% of the sample. The majority of the respondents were women (98.3%), and had a social work license in their state of employment (94.7%). The social workers' mean age was 48.0 years (SD = 12.8), and they reported an average of 9.8 (SD = 8.2) years of nephrology social work practice experience.

Dialysis Social Workers – Full Time. 800 full-time (i.e., 32–40 hours per week) dialysis social workers responded to this study. The sample was 81.0% White, 13.3% African American, 4.9% Asian/Pacific Islander, and 0.8% Native American. Respondents who identified as Hispanic or Latino/a comprised 8.5% of the sample. The majority of the respondents were women (91.7%), and had a social work license in their state of employment (90.9%). The social workers' mean age was 46.3 years (SD = 12.0), and they reported an average of 9.0 (SD = 8.1) years of nephrology social work practice experience.

Transplant Social Workers – Full Time. 26 full-time (i.e., 32–40 hours per week) transplant social workers responded to this study. The sample was 85.0% White, 5.0% Native American, and 10.0% African American. No respondents self-identified as Hispanic or Latino/a. The majority of the respondents were women (90.0%), and had a social work license in their state of employment (88.5%). The social workers' mean age was 41.2 years (SD = 11.4), and they reported an average of 8.0 (SD = 7.1) years of nephrology social work practice experience.

Measure

A 59-item 2017 Caseload, Salary, and Professional Practice Survey was used to assess nephrology social work practice in dialysis and transplant settings at both the state and national level, and across all 18 End-Stage Renal Disease (ESRD) Networks. In particular, the survey measured social workers' level of responsibility for a variety of professional tasks (e.g., patient education, counseling, advance-care planning), frequency of collaborations with healthcare professionals and family members, caseload size, hourly pay rate, and employer characteristics. To assess the survey's face validity, four social workers with expertise in dialysis or kidney transplant social work were asked to review each survey item and provide detailed feedback regarding word choice, relevance to the specific domain of practice (dialysis vs. transplant), and alignment with real-world practice.

Data Collection Procedure

The online survey was created using SurveyMonkey® and distributed with the assistance of staff at the National Kidney Foundation (NKF). A brief description of the study along with a hyperlink was emailed as follows: (1) the NKF sent an electronic message with the survey link to 1,371 social workers listed in their database; (2) the message was posted on the Council of Nephrology Social Workers (CNSW) listserv; and (3) several members of the CNSW Executive Committee shared the survey link with local NKF Chapters and other relevant ESRD distribution lists. The survey was administered from June 6 to July 31, 2017. Prospective respondents were informed of the confidential and voluntary nature of the survey, and that it would take 15 minutes to complete. No incentives were offered for participation. The survey data were maintained on a secure server at NKF, prior to being released for statistical analysis. After the data were de-identified by NKF staff (i.e., by removing e-mail addresses and other information that could potentially reveal the identity of an individual respondent), the first author (JRM) received the data in Excel format and transferred it to Statistical Package for the Social Sciences (SPSS) software for data analysis with the help of his doctoral assistant (MZ). All the data were stored on a secure network at the University of Minnesota. Please see Merighi, Browne, and Bruder (2010) for a summary of the study procedures used in this article. This study was deemed exempt by the University of Minnesota and University of South Carolina Institutional Review Boards.

RESULTS

The survey data are summarized according to employment status groups, based on the number of hours worked per week (hrs/wk): 20–31 hrs/wk, 32–40 hrs/wk, and exactly 40 hrs/wk. The "exactly 40 hours per week" category was created by selecting only the respondents who reported having a 40 hrs/wk position. Therefore, these respondents constitute a subset of the 32–40 hrs/wk category. Individual sample sizes are provided for all employment status groups in **Tables 1–6**.

Descriptive findings (i.e., mean, median, and range) for caseload and salary data collected in 2014 and 2017 are presented in **Tables 1–6**. National summaries for social workers in outpatient dialysis and transplant social workers are provided in **Tables 1 and 2**. In order to preserve the confidentiality of the sole part-time transplant social worker who provided usable caseload and salary information, no summary information is reported in **Table 2**. Breakdowns by ESRD Network (see **Table 7)** for outpatient dialysis social workers are provided in **Tables 3 and 4**, and state-level findings are presented in **Tables 5 and 6**.

Between 2014 and 2017, the mean caseloads for outpatient dialysis social workers remained steady at approximately 75 for those employed 20–31 hrs/wk, increased from 113.1 to 126.9 (up 12.1%) for those employed 32–40 hrs/wk, and increased from 116.1 to 129.5 (up 11.5%) for those employed 40 hrs/wk. Median caseloads showed a similar pattern between 2014 and 2017 for those employed 32–40 hrs/wk (110.0 to 120.0, up 9.1%) and for those employed 40 hrs/week (117.0 to 120.0, up 2.6%). Increases in mean hourly wages between 2014 and 2017 were also reported across all three employment status groups: $29.45 to $31.31 per hour (up 6.3%) for 20–31 hrs/wk, $28.23 to $30.62 per hour (up 8.5%) for 32–40 hrs/wk, and $28.21 to $30.48 per hour (up 8.0%) for social workers employed 40 hrs/wk.

Pre-transplant evaluations of potential donors increased between 2014 and 2017 for social workers who were employed full time (32–40 hrs/wk) and those who worked 40 hrs/wk. Specifically, the mean number of potential donor evaluations increased annually from 22.1 to 33.8 (up 52.9%) for those employed 32–40 hrs/wk and 23.0 to 33.8 (up 46.9%) for those employed 40 hrs/wk. Pre-transplant evaluations of potential recipients decreased for those employed full-time (283.7 to 219.2, down 22.7%) and for those employed 40 hrs/wk (315.6 to 219.2, down 30.5%). Mean hourly wage data showed a slight increase for transplant social workers employed full time ($30.74 to $31.50, up 2.5%), and for those employed 40 hrs/wk ($28.74 to $31.03, up 7.9%).

In general, caseload and hourly wage data by ESRD Network **(Tables 3–4)** and state (**Tables 5–6**) showed similar trends to the overall/aggregate trends reported above for social workers employed in outpatient dialysis settings.

DISCUSSION

Findings from this national study document an increase in caseload size for full-time outpatient dialysis social workers and an increase in pre-transplant evaluations of potential donors for transplant social workers between 2014 and 2017. In a study conducted more than a decade ago, nephrology social workers reported that large caseloads hindered their ability to provide clinical interventions (Bogatz et al., 2005). The researchers found that 68% of social workers in 2017 did not have enough time to do casework or counselling, 62% did not have enough time to do patient education, and 36% said that they spent excessive time doing clerical, insurance, and billing tasks. More recently, approximately 70% of part-time and 77% of full-time dialysis social workers reported in a national survey that they had insufficient time to provide psychosocial services to patients (Merighi, 2012). This dual trend of increasing caseloads and decreasing time spent with patients to address their psychosocial needs underscores the need for policy that will provide reasonable and fair guidance for employers with regard to caseload size in dialysis clinics.

There are limitations to this study. For both dialysis and transplant settings, we do not know if there is more than one social worker in the organization. In transplant settings, there are likely more than one transplant social worker. Therefore, the caseloads may be shared between social workers, and the 2017 reported caseloads per social worker may be lower in actual practice. There also are a small number of transplant social worker responses to the survey, however, because of sample size; those caseloads and salary findings may not be reflective of national trends.

Some dialysis social workers reported caseloads in 2017 that were very small (e.g., 13 patients) or very large (e.g., 1,500 patients). Small caseloads may be associated with newly opened units that are not yet operating at full capacity. The very high caseloads reported by four social workers—one each in Hawaii, Massachusetts, Mississippi, and Wisconsin—are more difficult to explain. It is possible these four social workers were responsible for covering multiple large units in a region due to staff vacancies or they were responsible for clinics with large home and in-center dialysis patient populations. Given this uncertainty and the influence of extremely high or low caseloads (outliers) when calculating summary statistics such as the mean, it is preferable to use the median as the summary statistic of choice when reporting and making comparisons.

The survey findings pinpointed 16 states and U.S. territories with mean patient caseloads at or above the national mean of 126.9 patients. Examining the median caseload of dialysis social workers, which reduces the influence of outliers, the findings indicated that there are 23 states and U.S. territories with median patient caseloads at or above the national median of 120 patients. Both of these findings are very troubling, as the National Kidney Foundation Council of Nephrology Social Workers (NKF-CNSW, 1998, 2014) recommends an acuity-based social-worker-to-patient ratio that takes into consideration the psychosocial risks of patients, recommending a maximum of 75 patients per full-time dialysis social worker. Texas mandates a caseload of 75 to 100 patients per full-time social worker, and Nevada has a mandated ratio of one full-time social worker per 100 dialysis patients. However, data from the 2017 survey indicated that not one state with more than one full-time respondent had an average caseload size of 75 or fewer. In fact, the national mean caseload size for a full-time social worker (32–40 hrs/week) was 126.9 and the median was 120. With CNSW's recommendation as a benchmark, the 2017 mean caseload for dialysis social workers is 69% higher than recommended, and the 2017 median caseload is 60% higher than recommended. Regardless of the summary statistic used, dialysis social worker caseloads far exceed what is advocated by CNSW.

High caseloads prevent nephrology social workers from developing and implementing clinical interventions that can ameliorate psychosocial barriers to improved kidney disease outcomes (Bogatz et al., 2005; Merighi & Ehlebracht, 2002, 2004c) and exercising the full scope of their training. In addition, elevated caseloads can potentially contribute to job dissatisfaction, burnout, and social workers leaving nephrology care for other specialties that do not have such high workloads (Hamama, 2012; Lloyd, King, & Chenoweth, 2002; Thomas, Kohli, & Choi, 2014).

NKF-CNSW hopes that social workers will find this information helpful in their self-advocacy efforts with employers. Specifically, nephrology social workers can use these data to assess their salaries and caseloads in comparison to state and national trends. If social workers determine that they have a higher caseload and/or lower salary, they can present these findings to their employers. They can also communicate to their employers the importance of lower caseloads so that patient outcomes may improve, that their clinics remain in compliance with the federal Conditions for Coverage (Medicare and Medicaid Programs; Conditions for Coverage for End-Stage Renal Disease Facilities, 2008) (i.e., avoid a survey citation), and that social workers may avoid burnout and leaving their jobs. It is the authors' hope that this information may help social workers improve their caseloads and compensation and, ultimately, patient care itself.

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TABLE 1.
Social Workers in Outpatient Dialysis Settings

	2014		2017	
	Mean / Median	**Range**	**Mean / Median**	**Range**
Caseload				
20–31 hrs/wk	75.34 / 72.00	16–205	74.61 / 75.00	17–187
32–40 hrs/wk	113.22 / 110.00	1–1,500	126.98 / 120.00	13–1,500
40 hrs/wk	116.14 / 117.00	1–1,500	129.50 / 120.00	13–1,500
Hourly Wage				
20–31 hrs/wk	29.45 / 27.87	19.98–53.23	31.31 / 30.92	22.00–45.00
32–40 hrs/wk	28.23 / 28.00	17.00–50.42	30.62 / 30.00	12.50–55.00
40 hrs/wk	28.21 / 27.95	17.00–50.42	30.48 / 30.00	12.50–51.00
Annual Salary				
32–40 hrs/wk	58,721 / 58,240	35,360–104,873	62,880 / 61,920	26,000–158,100
40 hrs/wk	58,647 / 58,136	35,360–104,873	63,405 / 62,400	26,000–106,080
	Sample sizes (*n*) for 2014: 20–31 hrs/wk caseload = 70 20–31 hrs/wk hourly wage = 92 32–40 hrs/wk caseload = 352 32–40 hrs/wk hourly wage = 553 32–40 hrs/wk annual salary = 553 40 hrs/wk caseload = 272 40 hrs/wk hourly wage = 430 40 hrs/wk salary = 430		Sample sizes (*n*) for 2017: 20–31 hrs/wk caseload = 125 20–31 hrs/wk hourly wage = 118 32–40 hrs/wk caseload = 773 32–40 hrs/wk hourly wage = 745 32–40 hrs/wk annual salary = 745 40 hrs/wk caseload = 665 40 hrs/wk hourly wage = 639 40 hrs/wk salary = 639	

TABLE 2.
Social Workers in Transplant Settings

	2014		2017	
	Mean / Median	**Range**	**Mean / Median**	**Range**
Caseload (Potential Donors)				
32–40 hrs/wk	22.13 / 11.00	1–101	33.75 / 37.50	1–66
40 hrs/wk	23.00 / 11.00	1–76	33.75 / 37.50	1–66
Caseload (Potential Recipients)				
32–40 hrs/wk	283.69 / 221.00	11–1,001	219.20 / 190.00	15–500
40 hrs/wk	315.56 / 241.00	11–1,001	219.20 / 190.00	15–500
Hourly Wage				
32–40 hrs/wk	30.74 / 30.00	22.00–45.00	31.50 / 29.33	22.84–45.23
40 hrs/wk	28.74 / 27.40	22.00–38.95	31.03 / 28.85	22.84–45.23
Annual Salary				
32–40 hrs/wk	63,934 / 62,400	45,760–93,600	65,197 / 60,996	47,507–94,078
40 hrs/wk	59,772 / 56,992	45,760–81,016	64,538 / 60,008	47,507–94,078
Note: Caseload data are for a 12-month period. Summary findings for part-time respondents are not reported due to small sample size (≤ 5).	Sample sizes (*n*) for 2014: 32–40 hrs/wk caseload = 16 32–40 hrs/wk hourly wage = 17 32–40 hrs/wk annual salary = 17 40 hrs/wk caseload = 9 40 hrs/wk hourly wage = 10 40 hrs/wk salary = 10		Sample sizes (*n*) for 2017: 32–40 hrs/wk caseload = 16 32–40 hrs/wk hourly wage = 20 32–40 hrs/wk annual salary = 20 40 hrs/wk caseload = 16 40 hrs/wk hourly wage = 19 40 hrs/wk salary = 19	

TABLE 3.
Caseload of Social Workers in Outpatient Dialysis Settings by End-Stage Renal Disease (ESRD) Network
(See Table 7. ESRD Network Geographic Areas)

ESRD Network	2014			2017		
	n	Mean / Median	Range	*n*	Mean / Median	Range
Network 1						
20–31 hrs/wk	4	84.25 / 98.50	40–100	9	65.56 / 50.00	31–136
32–40 hrs/wk	12	90.90 / 92.01	1–161	44	138.30 / 110.00	60–1,500
40 hrs/wk	11	92.00 / 110.00	1–161	28	167.25 / 116.50	60–1,500
Network 2						
20–31 hrs/wk	3	114.00 / 72.00	65–205	9	63.44 / 76.00	17–100
32–40 hrs/wk	16	98.50 / 109.50	32–135	41	121.90 / 120.00	57–600
40 hrs/wk	12	95.67 / 101.00	32–135	30	112.67 / 120.00	57–160
Network 3						
20–31 hrs/wk	2	75.00 / 75.00	24–126	18	84.00 / 85.00	50–130
32–40 hrs/wk	10	115.10 / 112.50	65–187	39	126.74 / 120.00	82–303
40 hrs/wk	6	118.33 / 116.00	65–187	33	125.21 / 120.00	82–205
Network 4						
20–31 hrs/wk	6	66.67 / 67.50	39–92	4	86.25 / 87.50	65–105
32–40 hrs/wk	8	99.63 / 107.50	17–140	28	105.04 / 104.00	35–300
40 hrs/wk	4	88.00 / 97.50	17–140	21	92.86 / 95.00	35–140
Network 5						
20–31 hrs/wk	2	37.00 / 37.00	20–54	1	81.00	—
32–40 hrs/wk	12	111.92 / 105.00	72–155	32	123.45 / 121.00	72–176
40 hrs/wk	11	115.55 / 105.00	88–155	27	123.92 / 121.00	72–176
Network 6						
20–31 hrs/wk	2	77.00 / 77.00	54–100	5	81.20 / 80.00	62–115
32–40 hrs/wk	24	117.88 / 116.00	26–180	109	126.03 / 125.00	13–366
40 hrs/wk	15	121.73 / 130.00	26–180	101	128.17 / 125.00	13–366
Network 7						
20–31 hrs/wk	1	150.00	—	4	71.25 / 77.50	45–85
32–40 hrs/wk	18	108.61 / 121.00	8–180	47	121.70 / 125.00	25–170
40 hrs/wk	13	111.92 / 125.00	8–180	45	120.93 / 125.00	25–170

TABLE 3.
Caseload of Social Workers in Outpatient Dialysis Settings by End-Stage Renal Disease (ESRD) Network
(See Table 7. ESRD Network Geographic Areas)

ESRD Network	2014			2017		
	n	Mean / Median	Range	*n*	Mean / Median	Range
Network 8						
20–31 hrs/wk	4	101.00 / 92.50	79–140	5	81.00 / 76.00	60–105
32–40 hrs/wk	25	127.88 / 135.00	1–240	33	178.70 / 140.00	88–1500
40 hrs/wk	22	135.95 / 139.00	75–240	31	183.52 / 140.00	100–1500
Network 9						
20–31 hrs/wk	12	85.33 / 83.00	49–125	9	84.67 / 79.00	50–120
32–40 hrs/wk	38	114.58 / 117.50	5–223	45	120.16 / 121.00	55–177
40 hrs/wk	30	112.27 / 120.50	5–170	39	122.92 / 125.00	65–177
Network 10						
20–31 hrs/wk	0	—— / ——	—	8	71.13 / 65.50	58–95
32–40 hrs/wk	22	96.36 / 106.00	5–140	24	120.87 / 120.00	35–212
40 hrs/wk	20	95.75 / 106.00	5–140	23	123.96 / 120.00	35–212
Network 11						
20–31 hrs/wk	3	52.67 / 54.00	45–59	14	70.64 / 73.50	35–120
32–40 hrs/wk	45	100.22 / 97.00	1–186	46	139.54 / 110.50	50–1,500
40 hrs/wk	34	100.76 / 96.50	20–186	39	149.03 / 115.00	50–1,500
Network 12						
20–31 hrs/wk	6	79.00 / 73.00	40–125	9	66.11 / 68.00	36–90
32–40 hrs/wk	28	102.25 / 96.00	40–300	44	115.70 / 111.00	20–274
40 hrs/wk	20	96.60 / 97.50	40–150	35	117.20 / 115.00	20–274
Network 13						
20–31 hrs/wk	4	49.75 / 47.00	30–75	3	133.00 / 116.00	96–187
32–40 hrs/wk	10	113.60 / 121.00	72–140	32	122.88 / 122.50	75–169
40 hrs/wk	10	113.60 / 121.00	72–140	29	126.45 / 125.00	86–169
Network 14						
20–31 hrs/wk	0	—— / ——	—	11	71.09 / 67.00	29–154
32–40 hrs/wk	14	106.93 / 112.00	57–155	74	103.26 / 102.00	36–190
40 hrs/wk	12	114.17 / 115.00	72–155	65	105.05 / 105.00	36–190

TABLE 3.
Caseload of Social Workers in Outpatient Dialysis Settings by End-Stage Renal Disease (ESRD) Network
(See Table 7. ESRD Network Geographic Areas)

ESRD Network	2014			2017		
	n	Mean / Median	Range	*n*	Mean / Median	Range
Network 15						
20–31 hrs/wk	0	—— / ——	—	7	65.86 / 62.00	55–85
32–40 hrs/wk	7	98.14 / 100.00	65–122	29	116.79 / 115.00	62–300
40 hrs/wk	5	99.40 / 100.00	65–122	28	118.75 / 116.50	65–300
Network 16						
20–31 hrs/wk	7	55.86 / 60.00	16–81	3	56.33 / 62.00	40–67
32–40 hrs/wk	27	171.04 / 118.00	60–1,500	26	109.92 / 107.50	60–160
40 hrs/wk	21	193.81 / 127.00	97–1,500	21	112.43 / 110.00	60–160
Network 17						
20–31 hrs/wk	2	73.00 / 73.00	72–74	4	61.25 / 58.50	48–80
32–40 hrs/wk	12	87.50 / 87.50	29–153	31	180.26 / 133.00	65–1,500
40 hrs/wk	7	103.57 / 105.00	29–153	27	190.19 / 134.00	65–1,500
Network 18						
20–31 hrs/wk	9	80.11 / 75.00	63–108	2	80.00 / 80.00	60–100
32–40 hrs/wk	25	126.84 / 132.00	1–254	41	121.15 / 120.00	68–208
40 hrs/wk	20	123.95 / 131.00	1–254	36	124.28 / 121.00	81–208

TABLE 4.
Hourly Wage of Social Workers in Outpatient Dialysis Settings by End-Stage Renal Disease (ESRD) Network
(See Table 7. ESRD Network Geographic Areas)

ESRD Network	2014			2017		
	n	Mean / Median	Range	*n*	Mean / Median	Range
Network 1						
20–31 hrs/wk	4	26.68 / 27.15	23.00–29.40	8	31.72 / 30.53	23.00–38.00
32–40 hrs/wk	12	30.72 / 30.38	20.43–41.25	43	32.83 / 33.00	22.00–42.37
40 hrs/wk	12	30.72 / 30.38	20.43–41.25	27	33.05 / 33.40	22.00–42.37
Network 2						
20–31 hrs/wk	7	30.51 / 28.00	24.65–38.50	9	34.61 / 32.00	26.00–42.00
32–40 hrs/wk	26	31.33 / 30.88	22.86–41.25	37	32.85 / 33.00	20.00–47.00
40 hrs/wk	21	30.39 / 29.80	22.86–41.25	28	32.16 / 32.61	20.00–47.00
Network 3						
20–31 hrs/wk	3	32.05 / 35.00	26.00–35.16	17	34.63 / 35.55	27.96–40.00
32–40 hrs/wk	16	28.94 / 27.69	22.70–39.00	39	32.85 / 33.00	25.00–45.38
40 hrs/wk	10	28.41 / 26.01	22.90–39.00	33	32.77 / 32.95	25.00–45.38
Network 4						
20–31 hrs/wk	8	26.82 / 26.08	23.00–31.00	4	24.98 / 23.92	22.72–29.38
32–40 hrs/wk	20	27.58 / 28.31	21.26–32.50	28	31.64 / 32.43	20.00–42.00
40 hrs/wk	13	27.46 / 28.61	21.26–32.50	21	31.72 / 32.57	20.00–37.17
Network 5						
20–31 hrs/wk	2	32.34 / 32.34	29.00–35.67	—	—— / ——	—
32–40 hrs/wk	20	27.91 / 29.22	19.68–33.65	31	31.45 / 31.73	24.51–37.98
40 hrs/wk	17	27.50 / 28.85	19.68–32.00	27	31.67 / 31.73	24.51–37.98
Network 6						
20–31 hrs/wk	2	32.50 / 32.50	24.50–40.50	5	27.67 / 27.44	23.40–34.00
32–40 hrs/wk	45	26.90 / 27.00	18.39–33.52	108	28.30 / 28.38	21.50–47.00
40 hrs/wk	37	26.52 / 26.92	18.39–33.52	100	27.67 / 27.44	23.40–34.00
Network 7						
20–31 hrs/wk	1	30.00	—	4	27.94 / 28.50	23.40–30.75
32–40 hrs/wk	29	27.88 / 27.15	24.04–34.53	44	30.31 / 29.93	24.52–45.00
40 hrs/wk	22	28.23 / 27.89	24.04–34.53	42	30.39 / 29.93	24.52–45.00

TABLE 4.
Hourly Wage of Social Workers in Outpatient Dialysis Settings by End-Stage Renal Disease (ESRD) Network
(See Table 7. ESRD Network Geographic Areas)

ESRD Network	2014			2017		
	n	Mean / Median	Range	*n*	Mean / Median	Range
Network 8						
20–31 hrs/wk	6	23.39 / 21.19	19.98–30.13	5	27.26 / 24.76	22.00–36.02
32–40 hrs/wk	38	24.79 / 24.50	17.00–36.00	32	25.88 / 25.64	21.57–32.69
40 hrs/wk	33	24.79 / 23.62	17.00–36.00	30	25.95 / 25.64	22.00–32.69
Network 9						
20–31 hrs/wk	13	27.17 / 26.25	22.80–33.65	9	28.75 / 29.00	23.23–33.00
32–40 hrs/wk	63	26.20 / 26.44	19.78–34.31	43	28.74 / 28.13	23.48–34.58
40 hrs/wk	48	24.99 / 25.93	20.00–34.31	37	28.74 / 28.13	23.48–34.58
Network 10						
20–31 hrs/wk	4	29.96 / 30.40	25.40–33.65	7	29.46 / 25.00	22.50–39.79
32–40 hrs/wk	34	27.11 / 27.20	20.19–34.00	23	28.03 / 27.40	20.19–38.61
40 hrs/wk	28	26.19 / 26.04	20.90–31.60	22	28.28 / 27.56	20.19–38.61
Network 11						
20–31 hrs/wk	9	27.15 / 26.91	24.43–31.76	11	28.85 / 28.61	24.04–36.80
32–40 hrs/wk	60	27.64 / 24.47	19.14–35.91	48	30.79 / 29.95	24.60–39.83
40 hrs/wk	39	27.35 / 26.75	19.14–34.00	41	30.76 / 30.28	24.60–38.50
Network 12						
20–31 hrs/wk	10	26.43 / 26.00	21.95–31.92	9	28.69 / 29.70	23.84–32.00
32–40 hrs/wk	37	26.75 / 26.00	19.01–38.00	39	26.87 / 26.92	12.50–35.50
40 hrs/wk	26	27.28 / 26.69	19.01–38.00	30	27.53 / 27.80	12.50–35.50
Network 13						
20–31 hrs/wk	2	36.00 / 36.00	29.50–42.50	3	32.00 / 28.50	22.50–45.00
32–40 hrs/wk	15	27.99 / 28.00	22.39–36.53	31	29.02 / 29.31	24.00–36.00
40 hrs/wk	15	27.99 / 28.00	22.39–36.53	28	29.12 / 30.25	24.00–36.00
Network 14						
20–31 hrs/wk	0	—— / ——	—	10	31.07 / 31.98	25.50–35.53
32–40 hrs/wk	31	27.61 / 28.00	20.80–35.00	72	29.37 / 29.52	22.00–39.00
40 hrs/wk	22	27.88 / 27.82	22.24–35.00	63	29.10 / 28.90	22.00–36.00

TABLE 4.
Hourly Wage of Social Workers in Outpatient Dialysis Settings by End-Stage Renal Disease (ESRD) Network
(See Table 7. ESRD Network Geographic Areas)

ESRD Network	2014			2017		
	n	Mean / Median	Range	*n*	Mean / Median	Range
Network 15						
20–31 hrs/wk	4	29.49 / 29.25	25.78–33.66	7	33.24 / 33.00	31.00–38.35
32–40 hrs/wk	21	28.06 / 28.85	21.68–32.50	26	30.17 / 30.10	23.10–40.00
40 hrs/wk	17	28.49 / 29.18	21.68–32.50	25	30.00 / 29.98	23.10–40.00
Network 16						
20–31 hrs/wk	6	29.01 / 28.98	21.70–35.50	3	30.00 / 28.53	26.48–35.00
32–40 hrs/wk	33	29.90 / 29.00	22.38–39.40	25	32.40 / 32.00	21.15–45.17
40 hrs/wk	26	30.39 / 30.00	25.00–39.26	20	31.86 / 32.00	21.15–44.60
Network 17						
20–31 hrs/wk	2	45.46 / 45.46	37.69–53.23	4	40.07 / 40.14	36.00–44.00
32–40 hrs/wk	17	34.16 / 34.06	25.65–44.00	30	36.52 / 35.06	24.40–55.00
40 hrs/wk	14	34.01 / 34.08	25.65–44.00	26	36.09 / 35.06	26.92–49.51
Network 18						
20–31 hrs/wk	10	38.71 / 39.74	29.52–49.49	3	41.47 / 43.90	36.00–44.52
32–40 hrs/wk	38	34.63 / 33.45	26.00–50.42	39	37.94 / 37.41	30.80–51.00
40 hrs/wk	31	34.87 / 33.40	26.00–50.42	34	37.66 / 36.75	30.80–51.00

TABLE 5.
Caseload of Social Workers in Outpatient Dialysis Settings by State

State	2014			2017		
	n	Mean / Median	Range	*n*	Mean / Median	Range
Alabama						
20–31 hrs/wk	1	79.00	——	2	74.50 / 74.50	60–89
32–40 hrs/wk	10	129.90 / 141.50	1–240	5	138.60 / 145.00	120–148
40 hrs/wk	9	144.22 / 145.00	100–240	4	143.25 / 145.00	135–148
Alaska & Montana						
20–31 hrs/wk	1	60.00	——	0	—— / ——	——
32–40 hrs/wk	0	—— / ——	——	3	116.33 / 125.00	96–128
40 hrs/wk	0	—— / ——	——	3	116.33 / 125.00	96–128
Arizona						
20–31 hrs/wk	0	—— / ——	——	0	—— / ——	——
32–40 hrs/wk	1	65.00	——	10	95.50 / 90.50	62–151
40 hrs/wk	1	65.00	——	9	99.22 / 95.00	65–151
Arkansas						
20–31 hrs/wk	2	52.50 / 52.50	30–75	0	—— / ——	——
32–40 hrs/wk	0	—— / ——	——	2	108.50 / 108.50	92–125
40 hrs/wk	1	28.00	——	2	108.50 / 108.50	92–125
California						
20–31 hrs/wk	11	78.81 / 74.00	63–108	6	67.5 / 63.50	48–100
32–40 hrs/wk	36	115.72 / 130.00	1–254	66	122.05 / 120.00	65–290
40 hrs/wk	26	121.12 / 131.00	1–254	58	125.76 / 121.00	65–290
Colorado						
20–31 hrs/wk	1	55.00	——	0	—— / ——	——
32–40 hrs/wk	0	—— / ——	——	7	138.71 / 115.00	78–300
40 hrs/wk	0	—— / ——	——	7	138.71 / 115.00	78–300
Connecticut						
20–31 hrs/wk	0	—— / ——	——	1	31.00	——
32–40 hrs/wk	4	117.75 / 115.00	80–161	8	98.88 / 95.00	63–142
40 hrs/wk	3	130.33 / 120.00	110–161	4	113.50 / 111.00	90–142

TABLE 5.
Caseload of Social Workers in Outpatient Dialysis Settings by State

State	2014			2017		
	n	Mean / Median	Range	*n*	Mean / Median	Range
DC						
20–31 hrs/wk	0	—— / ——	——	0	—— / ——	——
32–40 hrs/wk	1	105.00	——	0	—— / ——	——
40 hrs/wk	1	105.00	——	0	—— / ——	——
Delaware						
20–31 hrs/wk	0	—— / ——	——	0	—— / ——	——
32–40 hrs/wk	0	—— / ——	——	2	80.00 / 80.00	35–125
40 hrs/wk	0	—— / ——	——	1	35.00	——
Florida						
20–31 hrs/wk	1	150.00	——	4	71.25 / 77.50	45–85
32–40 hrs/wk	18	108.61 / 121.00	8–180	47	121.70 / 125.00	25–170
40 hrs/wk	13	111.92 / 125.00	8–180	45	120.93 / 125.00	25–170
Georgia						
20–31 hrs/wk	1	39.00	——	1	64.00	——
32–40 hrs/wk	8	118.13 / 121.00	91–145	34	125.24 / 120.00	67–366
40 hrs/wk	4	124.75 / 131.50	91–145	32	127.28 / 122.50	67–366
Hawaii						
20–31 hrs/wk	0	—— / ——	——	0	—— / ——	——
32–40 hrs/wk	0	—— / ——	——	10	308.70 / 173.00	100–1,500
40 hrs/wk	0	—— / ——	——	10	308.70 / 173.00	100–1,500
Idaho & Wyoming						
20–31 hrs/wk	0	—— / ——	——	2	52.50 / 52.50	40–65
32–40 hrs/wk	2	114.50 / 114.50	104–125	5	112.20 / 105.00	93–143
40 hrs/wk	1	125.00	——	5	112.20 / 105.00	93–143
Illinois						
20–31 hrs/wk	1	65.00	——	8	71.13 / 65.50	58–95
32–40 hrs/wk	22	96.36 / 106.00	5–140	24	120.87 / 120.00	35–212
40 hrs/wk	20	95.75 / 106.00	5–140	23	123.96 / 120.00	35–212

TABLE 5.
Caseload of Social Workers in Outpatient Dialysis Settings by State

State	2014			2017		
	n	Mean / Median	Range	*n*	Mean / Median	Range
Indiana						
20–31 hrs/wk	1	80.00	80–80	2	92.00 / 92.00	80–104
32–40 hrs/wk	12	102.00 / 120.00	10–133	14	120.79 / 125.00	70–148
40 hrs/wk	11	102.73 / 120.00	10–133	12	123.00 / 126.50	70–148
Iowa						
20–31 hrs/wk	0	—— / ——	——	3	43.67 / 45.00	36–50
32–40 hrs/wk	13	98.23 / 100.00	53–140	12	107.75 / 107.50	20–220
40 hrs/wk	9	101.00 / 100.00	53–140	9	102.00 / 110.00	20–220
Kansas						
20–31 hrs/wk	2	64.50 / 64.50	63–66	2	79.00 / 79.00	68–90
32–40 hrs/wk	2	89.00 / 89.00	85–93	6	132.00 / 103.50	90–274
40 hrs/wk	0	—— / ——	——	3	174.00 / 131.00	117–274
Kentucky						
20–31 hrs/wk	0	—— / ——	——	2	72.50 / 72.50	70–75
32–40 hrs/wk	11	120.55 / 120.00	70–170	6	118.17 / 120.50	101–137
40 hrs/wk	8	134.25 / 135.00	70–170	6	118.17 / 120.50	101–137
Louisiana						
20–31 hrs/wk	1	40.00	——	1	116.00	——
32–40 hrs/wk	4	104.25 / 99.50	78–140	8	142.12 / 142.50	128–158
40 hrs/wk	4	104.25 / 99.50	78–140	8	142.12 / 142.50	128–158
Maine						
20–31 hrs/wk	1	100.00	——	3	46.67 / 45.00	45–50
32–40 hrs/wk	1	86.00	——	6	90.67 / 98.00	60–118
40 hrs/wk	1	86.00	——	3	106.00 / 100.00	100–118
Maryland						
20–31 hrs/wk	1	54.00	——	1	81.00	——
32–40 hrs/wk	3	121.67 / 120.00	105–140	11	132.27 / 133.00	100–176
40 hrs/wk	3	121.67 / 120.00	105–140	11	132.27 / 133.00	100–176

TABLE 5.
Caseload of Social Workers in Outpatient Dialysis Settings by State

State	2014			2017		
	n	Mean / Median	Range	*n*	Mean / Median	Range
Massachusetts						
20–31 hrs/wk	2	98.50 / 98.50	97–100	3	109.67 / 118.00	75–136
32–40 hrs/wk	2	59.00 / 59.00	1–117	23	173.52 / 112.00	75–1,500
40 hrs/wk	2	59.00 / 59.00	1–117	16	207.94 / 117.50	96–1,500
Michigan						
20–31 hrs/wk	1	45.00	——	6	79.33 / 75.50	50–120
32–40 hrs/wk	16	104.63 / 108.00	1–145	14	124.71 / 120.00	70–168
40 hrs/wk	11	110.82 / 106.00	85–145	13	128.92 / 120.00	96–168
Minnesota						
20–31 hrs/wk	1	59.00	——	5	65.00 / 72.00	35–100
32–40 hrs/wk	9	114.33 / 125.00	67–160	19	108.21 / 102.00	50–155
40 hrs/wk	7	124.57 / 125.00	97–160	16	111.06 / 110.50	50–155
Mississippi						
20–31 hrs/wk	0	—— / ——	——	0	—— / ——	——
32–40 hrs/wk	7	139.71 / 150.00	70–180	19	207.84 / 145.00	88–1,500
40 hrs/wk	6	151.33 / 152.50	128–180	18	214.50 / 145.00	100–1,500
Missouri						
20–31 hrs/wk	3	101.67 / 100.00	80–125	3	84.00 / 85.00	80–87
32–40 hrs/wk	12	94.83 / 88.50	40–150	20	111.70 / 111.00	75–150
40 hrs/wk	11	95.72 / 92.00	40–150	19	112.47 / 112.00	75–150
Nebraska						
20–31 hrs/wk	1	40.00	——	1	54.00	——
32–40 hrs/wk	2	205.00 / 205.00	110–130	6	128.67 / 126.50	100–160
40 hrs/wk	1	110.00	——	4	131.25 / 132.50	100–160
Nevada						
20–31 hrs/wk	1	55.00	——	3	61.67 / 62.00	61–61
32–40 hrs/wk	0	—— / ——	——	5	138.20 / 128.00	118–175
40 hrs/wk	0	—— / ——	——	4	131.25 / 132.50	100–160

TABLE 5.
Caseload of Social Workers in Outpatient Dialysis Settings by State

State	2014			2017		
	n	Mean / Median	Range	*n*	Mean / Median	Range
New Hampshire & Vermont						
20–31 hrs/wk	0	—— / ——	——	2	45.00 / 45.00	40–50
32–40 hrs/wk	3	96.67 / 110.00	60–120	3	78.33 / 85.00	60–90
40 hrs/wk	3	96.67 / 110.00	60–120	1	60.00	——
New Jersey						
20–31 hrs/wk	2	75.00 / 75.00	24–126	18	84.00 / 85.00	50–130
32–40 hrs/wk	8	123.25 / 128.50	85–187	38	126.92 / 118.00	82–303
40 hrs/wk	4	136.25 / 133.50	91–187	32	125.38 / 122.50	82–205
New Mexico						
20–31 hrs/wk	0	—— / ——	——	2	78.00 / 78.00	71–85
32–40 hrs/wk	2	111.00 / 111.00	100–122	5	110.00 / 120.00	85–125
40 hrs/wk	2	111.00 / 111.00	100–122	5	110.00 / 120.00	85–125
New York						
20–31 hrs/wk	3	114.00 / 72.00	65–205	9	63.44 / 76.00	17–100
32–40 hrs/wk	16	98.50 / 109.50	32–135	41	121.90 / 120.00	57–600
40 hrs/wk	12	95.67 / 101.00	32–135	30	112.67 / 120.00	57–160
North Carolina						
20–31 hrs/wk	0	—— / ——	——	2	97.50 / 97.50	80–115
32–40 hrs/wk	2	111.00 / 111.00	110–112	38	134.55 / 128.50	13–298
40 hrs/wk	2	111.00 / 111.00	110–112	37	135.14 / 130.00	13–298
North Dakota & South Dakota						
20–31 hrs/wk	0	—— / ——	——	1	60.00	——
32–40 hrs/wk	6	70.25 / 76.50	20–100	4	84.25 / 84.50	78–90
40 hrs/wk	6	70.25 / 76.50	20–100	3	86.33 / 90.00	79–90
Ohio						
20–31 hrs/wk	9	88.78 / 91.00	49–125	5	86.60 / 79.00	50–120
32–40 hrs/wk	21	108.19 / 120.00	5–233	24	119.58 / 120.50	55–177
40 hrs/wk	19	102.21 / 115.00	5–155	20	123.60 / 126.50	65–177

TABLE 5.
Caseload of Social Workers in Outpatient Dialysis Settings by State

State	2014			2017		
	n	Mean / Median	Range	*n*	Mean / Median	Range
Oklahoma						
20–31 hrs/wk	1	54.00	——	2	141.50 / 141.50	96–187
32–40 hrs/wk	4	114.25 / 122.50	72–140	22	117.18 / 117.50	75–169
40 hrs/wk	4	114.25 / 122.50	72–140	19	121.74 / 120.00	86–169
Oregon						
20–31 hrs/wk	3	64.33 / 70.00	42–81	1	67.00	——
32–40 hrs/wk	8	133.38 / 139.50	80–160	9	97.78 / 90.00	60–160
40 hrs/wk	7	141.00 / 144.00	127–160	6	100.83 / 100.00	60–160
Pennsylvania						
20–31 hrs/wk	5	72.20 / 75.00	50–92	4	86.25 / 87.50	65–105
32–40 hrs/wk	8	99.63 / 107.50	17–140	26	106.96 / 104.00	40–300
40 hrs/wk	4	88.00 / 97.50	17–140	20	95.75 / 97.50	40–140
Rhode Island						
20–31 hrs/wk	1	40.00	——	0	—— / ——	——
32–40 hrs/wk	2	78.50 / 78.50	35–122	3	131.33 / 130.00	124–140
40 hrs/wk	2	78.50 / 78.50	35–122	3	131.33 / 130.00	124–140
South Carolina						
20–31 hrs/wk	2	77.00 / 77.00	54–100	2	73.50 / 73.50	62–85
32–40 hrs/wk	14	118.71 / 120.00	26–180	39	118.10 / 120.00	70–160
40 hrs/wk	9	122.78 / 139.00	26–180	34	120.94 / 120.00	70–160
Tennessee						
20–31 hrs/wk	3	108.33 / 95.00	90–140	3	85.33 / 76.00	75–105
32–40 hrs/wk	8	115.00 / 122.50	75–142	8	139.38 / 130.00	105–230
40 hrs/wk	7	112.14 / 110.00	75–142	8	139.38 / 130.00	105–230
Texas						
20–31 hrs/wk	0	—— / ——	——	11	71.09 / 67.00	29–154
32–40 hrs/wk	14	106.93 / 112.00	57–155	74	103.26 / 102.00	36–190
40 hrs/wk	12	114.17 / 115.00	72–155	65	105.05 / 105.00	36–190

TABLE 5.
Caseload of Social Workers in Outpatient Dialysis Settings by State

State	2014			2017		
	n	Mean / Median	Range	*n*	Mean / Median	Range
U.S. Territory						
20–31 hrs/wk	0	—— / ——	——	0	—— / ——	——
32–40 hrs/wk	2	67.50 / 67.50	65–70	4	188.80 / 193.50	160–208
40 hrs/wk	2	67.50 / 67.50	65–70	3	190.00 / 202.00	160–208
Utah						
20–31 hrs/wk	0	—— / ——	——	1	55.00	——
32–40 hrs/wk	4	100.00 / 105.00	80–110	2	110.00 / 110.00	100–120
40 hrs/wk	2	105.00 / 105.00	100–110	2	110.00 / 110.00	100–120
Virginia						
20–31 hrs/wk	2	30.00 / 30.00	20–40	0	—— / ——	——
32–40 hrs/wk	4	110.25 / 112.00	72–145	16	113.44 / 117.00	72–147
40 hrs/wk	3	123.00 / 124.00	100–145	13	115.08 / 120.00	72–147
Washington						
20–31 hrs/wk	3	46.00 / 60.00	16–62	1	62.00	——
32–40 hrs/wk	17	194.53 / 112.00	60–1,500	8	114.75 / 111.00	96–150
40 hrs/wk	13	226.38 / 115.00	97–1,500	6	116.00 / 111.00	96–150
West Virginia						
20–31 hrs/wk	0	—— / ——	——	0	—— / ——	——
32–40 hrs/wk	3	92.33 / 89.00	88–100	3	145.67 / 140.00	135–162
40 hrs/wk	3	92.33 / 89.00	88–100	2	137.50 / 137.50	135–140
Wisconsin						
20–31 hrs/wk	1	54	——	2	64.00 / 64.00	50–78
32–40 hrs/wk	13	100.15 / 87.00	71–186	9	253.33 / 95.00	65–1,500
40 hrs/wk	10	92.30 / 83.50	71–186	7	300.00 / 100.00	65–1,500

TABLE 6.
Hourly Wage of Social Workers in Outpatient Dialysis Settings by State

State	2014			2017		
	n	Mean / Median	Range	*n*	Mean / Median	Range
Alabama						
20–31 hrs/wk	2	21.13 / 21.25	20.36–21.89	2	29.76 / 29.76	23.50–36.02
32–40 hrs/wk	17	24.99 / 24.50	17.00–36.00	5	26.54 / 26.76	24.50–28.00
40 hrs/wk	15	24.79 / 23.62	17.00–36.00	4	26.17 / 26.26	24.50–27.67
Alaska & Montana						
20–31 hrs/wk	1	26.71	——	0	—— / ——	–
32–40 hrs/wk	3	29.67 / 29.67	27.59–35.00	2	24.52 / 24.52	21.15–27.88
40 hrs/wk	3	29.67 / 29.67	27.59–35.00	2	24.52 / 24.52	21.15–27.88
Arizona						
20–31 hrs/wk	1	25.78	——	0	—— / ——	——
32–40 hrs/wk	7	28.37 / 28.50	23.40–31.67	9	31.35 / 32.25	25.00–36.26
40 hrs/wk	7	28.37 / 28.50	23.40–31.67	8	30.95 / 31.74	25.00–36.26
Arkansas						
20–31 hrs/wk	1	42.50	——	0	—— / ——	——
32–40 hrs/wk	1	23.04	——	2	26.76 / 26.76	25.52–28.00
40 hrs/wk	2	22.52 / 22.52	22.00–23.04	2	26.76 / 26.76	25.52–28.00
California						
20–31 hrs/wk	12	39.83 / 39.75	29.52–53.23	7	40.67 / 40.16	36.00–44.52
32–40 hrs/wk	52	34.60 / 33.98	25.00–50.42	63	38.19 / 37.41	25.96–55.00
40 hrs/wk	45	34.76 / 33.95	25.00–50.42	55	37.70 / 37.00	25.96–51.00
Colorado						
20–31 hrs/wk	2	30.58 / 30.58	27.50–33.66	1	38.35	——
32–40 hrs/wk	1	31.73	——	7	28.25 / 28.14	24.00–30.50
40 hrs/wk	1	31.73	——	7	28.25 / 28.14	24.00–30.50
Connecticut						
20–31 hrs/wk	0	—— / ——	——	1	23.00	——
32–40 hrs/wk	5	33.50 / 35.35	30.00–41.25	8	35.25 / 36.24	24.85–42.37
40 hrs/wk	5	33.50 / 35.35	30.00–41.25	4	37.58 / 38.98	30.00–42.37

TABLE 6.
Hourly Wage of Social Workers in Outpatient Dialysis Settings by State

State	2014			2017		
	n	Mean / Median	Range	*n*	Mean / Median	Range
DC						
20–31 hrs/wk	0	—— / ——	——	1	37.98	——
32–40 hrs/wk	2	26.71 / 26.71	25.60–27.81	1	37.98	——
40 hrs/wk	2	26.71 / 26.71	25.60–27.81	0	—— / ——	——
Delaware						
20–31 hrs/wk	0	—— / ——	——	0	—— / ——	——
32–40 hrs/wk	2	28.20 / 28.20	27.69–28.70	2	32.15 / 32.15	31.60–32.70
40 hrs/wk	0	—— / ——	——	1	32.70	——
Florida						
20–31 hrs/wk	1	30.00	——	4	27.94 / 28.50	24.00–30.75
32–40 hrs/wk	29	27.88 / 27.15	24.04–34.53	44	30.31/ 29.93	24.52–45.00
40 hrs/wk	22	28.23 / 27.89	24.04–34.53	42	30.39/ 29.93	24.52–45.00
Georgia						
20–31 hrs/wk	1	23.00	——	1	34.00	——
32–40 hrs/wk	15	26.74 / 27.00	18.39–33.52	32	29.15 / 28.93	21.64–40.19
40 hrs/wk	12	25.89 / 26.42	18.39–33.52	30	29.19 / 28.93	21.64–40.19
Hawaii						
20–31 hrs/wk	0	—— / ——	——	0	—— / ——	——
32–40 hrs/wk	3	31.65 / 30.75	30.15–34.06	9	34.11 / 34.00	26.92–39.53
40 hrs/wk	3	31.65 / 30.75	30.15–34.06	9	34.11 / 34.00	26.92–39.53
Idaho & Wyoming						
20–31 hrs/wk	0	—— / ——	——	2	29.15 / 29.15	26.48–31.82
32–40 hrs/wk	2	26.87 / 26.87	23.75–30.00	5	29.18 / 30.00	25.00–32.40
40 hrs/wk	1	30.00	——	5	29.18 / 30.00	25.00–32.40
Illinois						
20–31 hrs/wk	4	29.96 / 30.40	25.40–33.65	7	29.46 / 25.00	22.50–39.79
32–40 hrs/wk	34	27.11 / 27.20	20.19–34.00	23	28.03 / 27.40	20.19–38.61
40 hrs/wk	28	26.19 / 26.04	20.90–31.60	22	28.28 / 27.56	20.19–38.61

TABLE 6.
Hourly Wage of Social Workers in Outpatient Dialysis Settings by State

State	2014			2017		
	n	Mean / Median	Range	*n*	Mean / Median	Range
Indiana						
20–31 hrs/wk	2	23.90 / 23.90	22.80–25.00	2	31.50 / 31.50	31.00–32.00
32–40 hrs/wk	26	26.03 / 24.82	20.00–39.00	14	28.76 / 28.43	23.48–34.00
40 hrs/wk	23	25.38 / 24.60	20.00–39.00	12	28.78 / 28.43	23.48–34.00
Iowa						
20–31 hrs/wk	3	25.83 / 26.00	24.04–27.46	3	28.92 / 29.70	26.29–30.77
32–40 hrs/wk	15	27.51 / 26.00	21.00–38.00	10	24.57 / 24.32	19.23–32.00
40 hrs/wk	12	27.97 / 27.41	21.00–38.00	7	24.11 / 24.00	19.23–28.75
Kansas						
20–31 hrs/wk	3	26.29 / 25.00	21.95–31.92	2	27.34 / 27.34	23.84–30.84
32–40 hrs/wk	3	25.62 / 24.64	24.50–27.70	4	24.88 / 23.75	23.00–29.00
40 hrs/wk	2	26.10 / 26.10	24.50–27.70	1	29.00	——
Kentucky						
20–31 hrs/wk	0	—— / ——	——	2	28.12 / 28.12	23.23–33.00
32–40 hrs/wk	13	24.69 / 25.50	19.78–28.00	6	28.14 / 27.25	24.90–32.00
40 hrs/wk	9	24.69 / 25.00	21.50–27.00	6	28.14 / 27.25	24.90–32.00
Louisiana						
20–31 hrs/wk	0	—— / ——	——	1	22.50	——
32–40 hrs/wk	6	25.98 / 25.35	22.39–30.45	7	26.88 / 26.77	24.00–32.10
40 hrs/wk	8	26.74 / 25.35	22.39–35.00	7	26.88 / 26.77	24.00–32.10
Maine						
20–31 hrs/wk	1	23.00	——	3	32.54 / 30.00	30.00–37.61
32–40 hrs/wk	1	20.43	——	6	26.94 / 25.25	23.63–35.53
40 hrs/wk	1	20.43	——	3	24.54 / 25.00	23.63–25.00
Maryland						
20–31 hrs/wk	1	35.67	——	0	—— / ——	——
32–40 hrs/wk	4	31.97 / 31.60	31.00–33.65	11	34.41 / 34.00	30.67–37.00
40 hrs/wk	3	35.70 / 32.00	31.21–43.89	11	34.41 / 34.00	30.67–37.00

TABLE 6.
Hourly Wage of Social Workers in Outpatient Dialysis Settings by State

State	2014			2017		
	n	Mean / Median	Range	*n*	Mean / Median	Range
Massachusetts						
20–31 hrs/wk	2	29.35 / 29.35	29.30–29.40	2	36.16 / 36.16	34.32–38.00
32–40 hrs/wk	2	32.47 / 32.47	27.95–37.00	23	33.12 / 33.40	22.00–40.00
40 hrs/wk	2	32.47 / 32.47	27.95–37.00	16	32.70 / 33.20	22.00–40.00
Michigan						
20–31 hrs/wk	3	28.07 / 27.73	26.97–29.50	4	31.83 / 30.93	28.67–36.80
32–40 hrs/wk	22	29.28 / 29.08	23.50–35.91	17	31.37 / 31.32	25.50–37.21
40 hrs/wk	16	29.23 / 29.08	24.45–34.00	15	31.64 / 31.90	25.50–37.21
Minnesota						
20–31 hrs/wk	1	25.75	——	5	27.19 / 27.51	24.04–29.54
32–40 hrs/wk	16	26.98 / 26.99	23.00–33.00	19	30.11 / 28.85	24.60–39.83
40 hrs/wk	13	27.56 / 26.67	23.10–36.40	16	29.49 / 28.51	24.60–38.50
Mississippi						
20–31 hrs/wk	0	—— / ——	——	0	—— / ——	——
32–40 hrs/wk	10	23.79 / 23.50	19.23–29.00	19	25.04 / 25.20	21.57–30.00
40 hrs/wk	8	24.12 / 23.69	19.23–29.00	18	25.24 / 25.38	22.00–30.00
Missouri						
20–31 hrs/wk	3	28.00 / 28.00	26.00–30.00	3	30.14 / 30.75	27.66–32.00
32–40 hrs/wk	18	26.69 / 26.70	19.01–34.88	19	28.27 / 28.57	12.50–35.50
40 hrs/wk	13	26.98 / 27.04	19.01–34.88	18	28.32 / 28.64	12.50–35.50
Nebraska						
20–31 hrs/wk	1	24.00	——	1	26.40	——
32–40 hrs/wk	3	29.70 / 26.20	25.77–37.14	6	27.57 / 27.64	22.00–33.65
40 hrs/wk	2	31.45 / 31.45	25.77–37.14	4	29.57 / 30.32	24.00–33.65
Nevada						
20–31 hrs/wk	1	31.00	——	2	32.75 / 32.75	32.00–33.50
32–40 hrs/wk	3	28.25 / 29.50	25.00–30.25	4	34.59 / 34.76	28.85–40.00
40 hrs/wk	2	27.25 / 27.25	25.00–29.50	4	34.59 / 34.76	28.85–40.00

TABLE 6.
Hourly Wage of Social Workers in Outpatient Dialysis Settings by State

State	2014			2017		
	n	Mean / Median	Range	*n*	Mean / Median	Range
New Hampshire & Vermont						
20–31 hrs/wk	1	25.00	——	2	30.42 / 30.42	29.79–31.05
32–40 hrs/wk	3	25.01 / 26.23	22.35–26.44	3	31.64 / 32.00	29.00–33.91
40 hrs/wk	3	25.01 / 26.23	22.35–26.44	1	33.91	——
New Jersey						
20–31 hrs/wk	3	32.05 / 35.00	26.00–35.16	17	34.63 / 35.55	27.96–40.00
32–40 hrs/wk	13	28.46 / 26.87	22.70–36.60	38	32.96 / 33.09	25.00–45.38
40 hrs/wk	8	27.76 / 26.01	22.90–36.60	32	32.90 / 32.98	25.00–45.38
New Mexico						
20–31 hrs/wk	0	—— / ——	——	2	33.00 / 33.00	33.00–33.00
32–40 hrs/wk	4	28.94 / 29.05	28.00–29.64	4	29.18 / 30.19	23.64–32.70
40 hrs/wk	4	28.94 / 29.05	28.00–29.64	4	29.18 / 30.19	23.64–32.70
New York						
20–31 hrs/wk	7	30.51 / 28.00	24.65–38.50	9	34.61 / 32.00	26.00–42.00
32–40 hrs/wk	26	31.33 / 30.88	22.86–41.25	37	32.85 / 33.00	20.00–47.00
40 hrs/wk	21	30.39 / 29.80	22.86–41.25	28	32.16 / 32.61	20.00–47.00
North Carolina						
20–31 hrs/wk	0	—— / ——	——	2	25.45 / 25.45	23.40–27.50
32–40 hrs/wk	9	27.39 / 26.49	24.41–31.25	38	27.69 / 28.17	21.63–35.02
40 hrs/wk	10	26.82 / 26.49	21.63–31.25	37	27.59 / 28.00	21.63–35.02
North Dakota & South Dakota						
20–31 hrs/wk	1	25.12	——	0	—— / ——	——
32–40 hrs/wk	5	26.33 / 24.97	19.14–33.74	4	32.23 / 32.74	26.59–36.86
40 hrs/wk	5	26.33 / 24.97	19.14–33.74	3	33.44 / 36.86	26.59–36.86
Ohio						
20–31 hrs/wk	9	25.65 / 25.00	20.19–32.00	5	27.90 / 27.55	25.00–31.19
32–40 hrs/wk	27	26.99 / 27.04	21.63–34.31	22	29.15 / 29.16	24.47–34.58
40 hrs/wk	22	26.73 / 26.83	21.63–34.31	18	29.23 / 29.26	24.47–34.58

TABLE 6.
Hourly Wage of Social Workers in Outpatient Dialysis Settings by State

State	2014			2017		
	n	Mean / Median	Range	*n*	Mean / Median	Range
Oklahoma						
20–31 hrs/wk	1	29.50	——	2	36.75 / 36.75	28.50–45.00
32–40 hrs/wk	6	28.32 / 28.71	23.75–32.63	22	29.90 / 30.73	24.08–36.00
40 hrs/wk	7	28.27 / 28.70	23.75–32.63	19	30.20 / 30.87	24.08–36.00
Oregon						
20–31 hrs/wk	2	32.08 / 31.25	31.25–32.90	1	35.00	——
32–40 hrs/wk	9	28.99 / 30.00	22.38–34.16	9	32.52 / 32.00	25.78–44.60
40 hrs/wk	8	29.82 / 30.24	25.27–34.16	6	32.41 / 29.89	25.78–44.60
Pennsylvania						
20–31 hrs/wk	7	27.37 / 27.15	23.00–31.00	4	24.99 / 23.92	22.72–29.38
32–40 hrs/wk	18	27.51 / 28.31	21.26–32.50	26	31.60 / 32.43	20.00–42.00
40 hrs/wk	13	27.46 / 28.61	21.26–32.50	20	31.67 / 32.43	20.00–37.17
Rhode Island						
20–31 hrs/wk	0	—— / ——	——	0	—— / ——	——
32–40 hrs/wk	1	36.53	——	2	35.63 / 35.63	33.00–38.25
40 hrs/wk	1	36.53	——	2	35.63 / 35.63	33.00–38.25
South Carolina						
20–31 hrs/wk	2	32.50 / 32.50	24.50–40.50	2	26.72 / 26.72	26.00–27.44
32–40 hrs/wk	22	26.72 / 27.46	21.00–31.25	40	28.10 / 28.43	21.50–47.00
40 hrs/wk	18	26.31 / 26.94	21.00–31.25	35	28.30 / 28.45	21.50–47.00
Tennessee						
20–31 hrs/wk	4	24.52 / 24.00	19.98–30.15	3	25.59 / 24.76	22.00–30.00
32–40 hrs/wk	11	25.38 / 25.07	21.89–29.65	7	27.30 / 25.37	23.32–32.69
40 hrs/wk	10	25.32 / 24.04	21.89–29.65	7	27.30 / 25.37	23.32–32.69
Texas						
20–31 hrs/wk	0	—— / ——	——	10	31.07 / 31.98	25.50–35.53
32–40 hrs/wk	31	27.61 / 28.00	20.80–35.00	72	29.37 / 29.52	22.00–39.00
40 hrs/wk	23	27.83 / 27.63	22.24–35.00	63	29.10 / 28.90	22.00–36.00

TABLE 6.
Hourly Wage of Social Workers in Outpatient Dialysis Settings by State

State	2014			2017		
	n	Mean / Median	Range	*n*	Mean / Median	Range
U.S. Territory						
20–31 hrs/wk	0	—— / ——	——	0	—— / ——	——
32–40 hrs/wk	3	25.73 / 25.73	23.00–31.25	3	27.33 / 27.00	24.40–30.59
40 hrs/wk	3	25.73 / 25.73	23.00–31.25	2	28.80 / 28.80	27.00–30.59
Utah						
20–31 hrs/wk	0	—— / ——	——	1	31.00	——
32–40 hrs/wk	6	26.40 / 25.60	21.68–32.50	2	24.77 / 24.77	23.10–26.44
40 hrs/wk	3	27.89 / 29.50	21.68–32.50	2	24.77 / 24.77	23.10–26.44
Virginia						
20–31 hrs/wk	2	29.00 / 29.00	29.00–29.00	0	—— / ——	——
32–40 hrs/wk	9	29.09 / 29.81	24.40–32.00	16	29.43 / 29.95	24.51–33.18
40 hrs/wk	7	29.27 / 29.81	24.40–31.14	13	29.88 / 30.04	24.51–33.18
Washington						
20–31 hrs/wk	3	27.73 / 26.00	21.70–35.50	1	28.53	——
32–40 hrs/wk	18	30.68 / 30.00	25.00–39.40	8	35.49 / 34.25	29.52–45.17
40 hrs/wk	14	31.49 / 31.38	25.75–39.26	6	34.87 / 34.25	29.75–41.00
West Virginia						
20–31 hrs/wk	0	—— / ——	——	0	—— / ——	——
32–40 hrs/wk	3	21.59 / 22.45	19.68–22.65	3	29.21 / 25.06	25.06–37.50
40 hrs/wk	3	21.59 / 22.45	19.68–22.65	2	25.06 / 25.06	25.06–25.06
Wisconsin						
20–31 hrs/wk	4	27.33 / 26.56	24.43–31.76	2	27.06 / 27.06	25.50–28.61
32–40 hrs/wk	18	26.53 / 25.03	22.00–32.32	8	30.45 / 30.24	26.92–34.00
40 hrs/wk	11	27.09 / 26.75	22.00–32.32	7	30.63 / 31.25	26.92–34.00

TABLE 7. ESRD Network Geographic Areas	
Network 1	Connecticut, Massachusetts, Maine, New Hampshire, Rhode Island, Vermont
Network 2	New York
Network 3	New Jersey, Puerto Rico, Virgin Islands
Network 4	Delaware, Pennsylvania
Network 5	District of Columbia, Maryland, Virginia, West Virginia
Network 6	Georgia, North Carolina, South Carolina
Network 7	Florida
Network 8	Alabama, Mississippi, Tennessee
Network 9	Indiana, Kentucky, Ohio
Network 10	Illinois
Network 11	Michigan, Minnesota, North Dakota, South Dakota, Wisconsin
Network 12	Iowa, Kansas, Missouri, Nebraska
Network 13	Arkansas, Louisiana, Oklahoma
Network 14	Texas
Network 15	Arizona, Colorado, New Mexico, Nevada, Utah, Wyoming
Network 16	Alaska, Idaho, Montana, Oregon, Washington
Network 17	American Samoa, Guam, Hawaii, Northern California, Northern Mariana Islands
Network 18	Southern California

National Kidney Foundation 2018 Spring Clinical Meetings— Social Work Abstracts

CKD-ESRD – Other

HOSPITALIZATIONS AMONG PERITONEAL DIALYSIS AND HOME HEMODIALYSIS PATIENTS WITH SYMPTOMS OF DEPRESSION: Kathryn Aebel-Groesch[1], Duane Dunn[1], Angie Major[1], Levi Njord[1], Francesca Tentori[2], Deborah Benner[1]. 1DaVita Inc, Denver, CO, USA; [2]DaVita Clinical Research, Minneapolis, MN, USA

SUICIDALITY SCREENING IN DIALYSIS PATIENTS: Brooke Chehoski[1], Dodie Stein[2], Teri Browne[1]. [1]University of South Carolina, Columbia, SC, USA; [2]DaVita Home Dialysis, Indianapolis, IN, USA

Transplantation

CHARACTERIZATION OF END-STAGE RENAL DISEASE (ESRD) PATIENTS ON THE TRANSPLANT WAITLIST: Deborah Evans[1], Duane Dunn[1], Kristi Robinson[1], Shayne Sossamon1, Deborah Benner[1]. [1]DaVita Inc, Denver, CO, USA

Other

PATIENT-CENTERED KIDNEY DISEASE RESEARCH EXPERIENCE AND PRIORITIES: Teri Browne[1], Derek L. Forfang[2], Jessica Joseph[3], Laura Brereton[3], Kelli Collins[3], Kathryn Pucci[3]. [1]University of South Carolina, Columbia, SC, USA; [2]National Forum of ESRD Networks, Birchwood, WI, USA; [3]National Kidney Foundation, New York, NY, USA

1. HOSPITALIZATIONS AMONG PERITONEAL DIALYSIS AND HOME HEMODIALYSIS PATIENTS WITH SYMPTOMS OF DEPRESSION: Kathryn Aebel-Groesch[1], Duane Dunn[1], Angie Major[1], Levi Njord[1], Francesca Tentori[2], Deborah Benner[1]. [1]DaVita Inc, Denver, CO, USA; [2]DaVita Clinical Research, Minneapolis, MN, USA

We have previously reported that in-center hemodialysis (ICHD) patients with depressive symptoms are less likely to be adherent to dialysis treatment schedules and more likely to be admitted to the hospital. In the current study, we characterized the incidence of depression among patients on peritoneal dialysis (PD) and home hemodialysis (HHD) and assessed the impact of depression on hospitalization rates in these patient populations.

We analyzed data from the electronic health records of a large dialysis organization (LDO) for the period May 2016 to April 2017. Depression screenings were performed biannually by LDO social workers using the PHQ-2 scale (total score range 0-6). Patients with an active diagnosis of depression, bipolar disorder, cognitive impairment, or a language barrier were not screened. Hospital admissions in the 3 months following screening were compared among patients with symptoms of depression (total PHQ-2 score ≥3) and those without (total score ≤2).

A total of 2661 (6.5%) of 40,676 completed PD patient depression screenings and 353 (6.0%) of 5882 HHD patient depression screenings were scored as positive for depressive symptoms. For both modalities, hospitalization rates were greater among patients with symptoms of depression compared to those without: 1.9 vs 1.1 admissions per-patient year for PD patients and 1.9 vs 1.4 admissions per-patient year for HHD patients.

Symptoms of depression were identified among patients on PD and HHD with a frequency similar to that previously observed in ICHD patients. Moreover, PD and HHD patients with symptoms of depression were more likely to be hospitalized than those without, as has been reported for ICHD patients. Clinical initiatives to target patients who screen positive for depression should be designed to reach PD and HHD patients as well as those receiving ICHD.

2. PATIENT-CENTERED KIDNEY DISEASE RESEARCH EXPERIENCE AND PRIORITIES: Teri Browne[1], Derek L. Forfang[2], Jessica Joseph[3], Laura Brereton[3], Kelli Collins[3], Kathryn Pucci[3]. [1]University of South Carolina, Columbia, SC, USA; [2]National Forum of ESRD Networks, Birchwood, WI, USA; [3]National Kidney Foundation, New York, NY, USA

Despite the growing importance of Patient-Centered Outcomes Research (PCOR), there has been limited growth of such methodology in kidney disease research. Getting patients engaged early in research will help insure the data, device, or drug is meaningful to patients and patients are willing use it.

We conducted internet surveys of patients living with kidney disease, care partners & CKD researchers about their experiences with PCOR. Survey questions included: How common is patient involvement in research projects, and what role do patients currently play in research? What has been the patient and researcher experience in PCOR? What research topics do patients and care partners prioritize?

860 patients and care partners, and 647 researchers completed the survey. The majority of patients (89.1%) were interested in kidney disease research but have not been involved in a research study. The majority of researchers (73.2%) had not been involved in PCOR and almost half of them (46.8%) do not publish research findings in non-academic venues. Researchers reported barriers to patient involvement including: difficulty corresponding with dialysis centers; lack of funding for patient engagement within projects; and lack of knowledge of how to best engage with patients. Patient reported barriers included travel limitations; lack of motivation; limited understanding of research; and lack of awareness of research opportunities. Patient and care partner priorities for research topics included 'understanding the biology of kidney disease' and 'preventing kidney disease' as most or very important.

Kidney disease researchers need to better engage patients and care partners in meaningful ways to improve PCOR in the United States. Encouragingly, patients are very interested in such participation and researchers can use our results to improve kidney disease PCOR and patient outcomes.

3. SUICIDALITY SCREENING IN DIALYSIS PATIENTS: Brooke Chehoski[1], Dodie Stein[2], Teri Browne[1]. [1]University of South Carolina, Columbia, SC, USA; [2]DaVita Home Dialysis, Indianapolis, IN, USA

Suicidal ideation is more prevalent among people with End Stage Renal Disease (ESRD) than in the general population. It is not known how often screenings for suicidality or lethality are performed in this population. The purpose of this study was to survey dialysis and transplant social workers on their clinical practice in screening for and identifying suicidality/lethality in their patient populations.

An electronic survey of 13 items was circulated via the Survey Monkey platform to the email listserv of the NKF's Council of Nephrology Social Workers in October 2017. The survey link was distributed to a total of about 700 social workers.

167 (24%) social workers responded to the survey. Data suggests that about 71% of social workers do screen for suicidality or suicidal ideation. About 66% use the Physicians Health Questionnaire Version 9 (PHQ-9) depression screening survey that has questions about self-harm, while 40% use informal questioning for suicidality/suicidal ideation screening. 61% percent of the social workers responded that only 1-10% of their patients were at risk for suicide; another 13% reported a rate of 11-20%; and 13% reported no suicidality with their patients.

Though the risk of suicide is relatively low for dialysis patients in this study, good clinical practice necessitates screening for suicidality/lethality when depression is identified or conversation suggests patient self-harm. A standardized suicidality tool is recommended and further study to better define suicidal ideation in the dialysis population would be useful for improved clinical care.

4. CHARACTERIZATION OF END-STAGE RENAL DISEASE (ESRD) PATIENTS ON THE TRANSPLANT WAITLIST: Deborah Evans[1], Duane Dunn[1], Kristi Robinson[1], Shayne Sossamon[1], Deborah Benner[1]. [1]DaVita Inc, Denver, CO, USA

For most patients with ESRD, receipt of a transplant offers the best possible treatment option. However, the process of qualification for transplant is complex and may be challenging for some patients to navigate. To better understand these potential challenges, we sought to characterize patients listed as active on the transplant waitlist.

We analyzed data from the electronic health records of a large dialysis organization. Transplant waitlist status was assessed as of Nov 2017; patients with status listed as "active" were compared to the patient population overall within categories of age, sex, race/ethnicity, dialysis vintage, modality, and geographic region.

A greater proportion of male patients than female patients were listed as active on the waitlist (10.6% vs 8.1%). Listing status varied by race/ethnicity, with 11.9%, 9.9%, and 7.6% of patients listed as active among Hispanic, black, and white patients, respectively. The proportion of patients listed as active was highest in patients <40 years of age (18.5%) and lowest in those >80 years of age (0.2%) and increased with dialysis vintage: 1.7% for patients on dialysis for <3 months vs 13.5% for patients on dialysis for 24-48 months. Among patients on in-center hemodialysis, 8.1% were listed as active, compared to 20.3% and 20.1% for home hemodialysis and peritoneal dialysis patients, respectively. The proportion of patients listed as active ranged from 3.4%-17.1% when considered by state.

Our analysis revealed considerable variation in the proportion of patients listed as active on the transplant waitlist based on a number of demographic and dialysis treatment criteria. It is likely that some of these differences reflect patient health status and engagement as well as factors specific to individual transplant programs. However, these findings may inform the design and targeting of education to ensure that all patients are able to make informed decisions about transplant as an alternative to their current modality.

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www.kidney.org/livingdonation—NKF's website provides information for kidney patients and potential donors.

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