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“Examining Demographic Factors Influencing the Choice of Dialysis Modalities in Patients with End-Stage Renal Disease”

BACKGROUND: Dialysis serves to remove waste and excess fluid from the body in patients with end-stage renal disease (ESRD). Patients with ESRD have two primary options for dialysis: in-center or home dialysis, which can include both home hemodialysis and peritoneal dialysis. Several studies have shown home dialysis to have reduced levels of morbidity and mortality as well as costs for dialysis providers. However, there are low levels of home dialyzers compared to in-center, particularly in the African American community. Our study aims to investigate the influence of demographic factors on choice of dialysis modalities in patients with end-stage renal disease.

METHODS: The study was LSUHSC-NO IRB approved, and the study’s population was a convenience sample that consisted of LSU Nephrology patients at selected DaVita dialysis units across the New Orleans metro area. Patients were presented with a standardized survey with no identifiers other than zip code. The variables of interest included age, sex, race, education level, employment status before beginning dialysis, and health insurance. Upon completion, surveys were reviewed and uploaded into a REDCap database for analysis. Patients were grouped into those who performed dialysis at home and in-center. Between group comparisons were made by one-way ANOVA. Logistic regression was used to do multivariate analysis. SPSS ver was used to conduct all analysis.

Factor	In-Center Dialysis	Home Dialysis
Age	63.56 ± 11.46	54.96 ± 13.14
Sex		
Male	36, 40.4%	13, 50.0%
Female	51, 57.3%	12, 46.2%
Other	2, 2.2%	1, 3.8%
Race		
White	4, 4.5%	8, 30.8%
African American	82, 92.1%	17, 65.4%
Other	0, 0.0%	1, 3.8%
No response	3, 3.4%	0, 0.0%
Education		
Some college or less	86, 96.5%	14, 53.8%
Undergraduate degree or more	1, 1.1%	12, 46.2%
No response	2, 2.2%	0, 0.0%
Pre-Dialysis Employment		
Employed	31, 34.8%	14, 53.8%
Unemployed	34, 38.2%	8, 30.8%
Retired	21, 23.6%	4, 15.4%
No response	3, 3.4%	0, 0.0%
Health Insurance		
Yes	21, 23.6%	21, 80.8%
No	68, 76.4%	5, 19.2%

Table 1. Baseline data of demographic factors between patients who dialyze in-center and those who dialysis at home. Age values are mean ± SEM. Total in-center was 89 dialysis patients. Total home was 26 dialysis patients.

RESULTS: The baseline demographic factors between groups are summarized in Table 1. The average age of in-center was 63.56 ± 11.46 and that of home was 54.96 ± 13.14. Compared to in-center, patients who dialyzed at home had higher levels of education levels (undergraduate degree or above: 46.2% vs. 1.1%) and were more likely to be employed before beginning dialysis (53.8% vs. 34.8%) and have health insurance (80.8% vs. 23.6%). After completing a one-way ANOVA test, age was the only variable with P<0.05 (0.47, df=1). There is a significant difference in age values between in-center patients and home patients. The multivariate logistics regression test revealed statistically significant differences in both age (P=0.007) and employment status before starting dialysis (P=0.005).

CONCLUSION: Our findings demonstrate that lower age and employment status before dialysis treatment were strong predictors of home dialysis. Our survey needs to be repeated in a larger sample size and an unselected patient population for validation. Qualitative studies such as focus groups should be completed to further find what factors influence these decisions on dialysis modalities.