

## RESEARCH LETTER

## Weight, Weight Perception, and Self-reported Access to Transplantation in African American Hemodialysis Patients



To the Editor:

The obesity epidemic in the United States is a growing concern. Approximately 34% of US adults are obese.<sup>1</sup> However, in dialysis patients, increased body mass index (BMI) is paradoxically linked with improved survival for both overweight and obese patients, defined as BMI of 25 to 29.9 and BMI  $\geq 30$  kg/m<sup>2</sup>, respectively.<sup>2</sup>

Despite improved outcomes for obese or overweight patients receiving hemodialysis, kidney transplantation in obese candidates is associated with worse short-term outcomes, including longer surgical times, increased postoperative complications, and delayed graft function.<sup>3</sup> However, recent work has found no significant differences in graft loss and survival between nonobese and obese recipients.<sup>4</sup> Still, many transplantation centers have exclusion criteria based on the patient's BMI, with most centers' cutoffs between 35 and 40 kg/m<sup>2</sup>.<sup>5</sup> For example, the University of Chicago Medical Center requires that patients have BMI  $\leq 38$  kg/m<sup>2</sup>.

In African Americans, the relationship between BMI, dialysis, and transplantation may be more complicated. African Americans have a higher prevalence of overweight and obesity and also a higher incidence of end-stage kidney disease.<sup>1,6</sup> African American race is associated with greater survival on hemodialysis in patients older than 50 years compared with non-Hispanic whites.<sup>2,6</sup> In addition, African Americans are less likely to be considered for transplantation.<sup>7</sup> We sought to investigate this relationship by surveying African American hemodialysis patients to understand their perception of BMI and its relationship to transplantation access.

We surveyed African American hemodialysis patients on the South Side of Chicago from June to July 2016 in 3 university-affiliated (DaVita) dialysis units. The survey included questions related to patient perception about ideal weight, exercise, transplantation eligibility, and lifestyle. BMI was calculated using measured values. Full survey and methods are available in [Item S1](#).

Our sample included 134 hemodialysis patients surveyed June to July 2016 in 3 university-affiliated dialysis facilities. We excluded 7 respondents (4 without weight data and 3 non-African Americans). Among 127 African American patients, 52% were women, and 82% had completed 12 or more years of school. Mean age was  $58 \pm 16$  years. Mean BMI was  $27.3 \pm 7.3$  kg/m<sup>2</sup>, 32 patients (25%) were overweight, and 50 patients (39%) were obese; proportions did not differ by sex.

Among patients with low BMI, 100% wanted to gain weight; among those with normal BMI, 43% perceived a need to gain weight; and among overweight patients, 79% wanted to maintain or gain weight ([Table 1](#)). Most (70%)

**Table 1.** Perceived Need to Gain or Lose Weight by BMI

BMI Category	Perceived Need for Weight Change			Total
	Lose	Maintain	Gain	
Underweight	0 (0%)	0 (0%)	3 (100%)	3
Normal	1 (2%)	23 (55%)	18 (43%)	42
Overweight	8 (24%)	20 (61%)	5 (15%)	33
Obese	34 (70%)	14 (29%)	1 (2%)	49
Total	43	57	27	127

Note: Values expressed as number (percent). Chi-square  $P < 0.001$ . Abbreviation: BMI, body mass index.

obese patients wanted to lose weight. BMI  $> 38$  kg/m<sup>2</sup> (University of Chicago Medical Center transplantation eligibility cutoff) was seen in 14 (11%) patients.

Overall, we found that 67% of participants reported exercising. By far, the most common exercise was walking (44%), followed by calisthenics (6.29%). We found no association between self-reported exercise and participant report of trying to lose weight or weight category. Further examination of factors associated with trying to lose weight found that in bivariable analysis, years of education, weight category, estimated BMI, and awareness of transplantation center weight limit were significantly associated, all  $P > 0.05$ . There was no association between sex, exercise, or self-reported transplantation evaluation status and trying to lose weight. Using multivariable logistic regression, we found that estimated BMI and years of education were significantly associated with trying to lose weight: odds ratio (OR) 1.41; 95% confidence interval (CI), 1.02-1.85; and OR, 1.41; 95% CI, 1.25-1.60, respectively.

In our sample ([Table 2](#)), 67 (53%) patients reported that they had had a transplantation evaluation, 9 (7%) reported that their evaluation was in progress, and 51 (40%) reported that they had not been evaluated. Of those who had not been evaluated, 22 (43%) reported they had not gone for a transplantation evaluation and 15 (29.4%) reported they were not interested in a transplantation evaluation. Only 3 (5.9%) reported that their weight was a factor preventing them from receiving a transplantation evaluation.

There was no significant difference by BMI category in transplantation evaluation status ( $P = 0.7$ ). Among 127

**Table 2.** Self-reported Transplantation Evaluation Status by BMI Category

BMI Category	Transplantation Evaluation Status			Total
	In Progress	No, Not Evaluated	Yes, Completed Evaluation	
Underweight	0 (0%)	2 (67%)	1 (33%)	3
Normal	4 (10%)	18 (43%)	20 (48%)	42
Overweight	1 (3%)	11 (33%)	21 (64%)	33
Obese	4 (8%)	20 (40%)	25 (51%)	49
Total	9 (7%)	51 (40%)	67 (53%)	127

Note: Values expressed as number (percent). Chi-square  $P = 0.7$ . Abbreviation: BMI, body mass index.

patients, the proportion that had a transplantation evaluation completed or in progress was 59.2% if obese, 66.7% if overweight, 57.1% if normal weight, and 33.3% if underweight. Among 67 patients who completed the transplantation evaluation, the proportion waitlisted was 60% if obese, 71% if overweight, and 55% if normal BMI;  $P = 0.6$ .

In our sample of African American hemodialysis patients, a majority of patients preferred to be at an overweight BMI. Prior work has shown that in general, African Americans prefer a higher weight.<sup>8</sup> For hemodialysis patients, this preference may also be associated with improved survival.<sup>2</sup> Diet and exercise programs for African Americans should focus on health benefits—cardiovascular health, mobility, and quality of life—other than weight loss.<sup>9</sup>

Only a small proportion of our sample was above the local transplantation center's BMI cutoff despite a high prevalence of obesity and overweight. Obese and overweight African Americans' rates of referral for transplantation evaluation and appearance on the waitlist did not differ significantly from their normal-weight counterparts. We still found a large proportion of individuals, 40%, who reported that they had not been evaluated for transplantation. Most stated that they were not interested in transplantation or that they had not gone for evaluation (>70%). We were unable to determine whether they were recommended for a transplantation evaluation.

African Americans continue to experience disparities in kidney transplantation access.<sup>10</sup> Despite a high prevalence of obesity, weight did not appear to be a barrier to transplantation referral. Continued efforts should focus on ensuring that all hemodialysis patients, regardless of race or BMI, are aware of the benefits of transplantation and have the emotional and material supports necessary to consider and complete the transplantation evaluation. Hemodialysis providers can work to reduce disparities by providing all patients with education on the benefits of transplantation, early referral for transplantation, and assistance in timely completion of the transplantation evaluation.

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## SUPPLEMENTARY MATERIAL

### Supplementary File (PDF)

Item S1: Survey and detailed methods.

## ARTICLE INFORMATION

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