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Provider communication quality: influence of patients' weight and race

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Abstract

Objective—To examine the relationship between patient weight and provider communication quality and determine whether patient race/ethnicity modifies this association.

Methods—We conducted a cross-sectional analysis with 2009-2010 Medical Expenditures Panel Survey – Household Component (N = 25,971). Our dependent variables were patient report of providers explaining well, listening, showing respect, and spending time. Our independent variables were patient weight status and patient weight-race/ethnicity groups. Using survey weights, we performed multivariate logistic regression to examine the adjusted association between patient weight and patient-provider communication measures, and whether patient race/ethnicity modifies this relationship.

Results—Compared to healthy weight whites, obese blacks were less likely to report that their providers explained things well (OR 0.78; p=0.02) or spent enough time with them (OR 0.81; p=0.04), and overweight blacks were also less likely to report that providers spent enough time with them (OR 0.78; p=0.02). **Healthy weight** Hispanics were **also** less likely to report adequate provider explanations (OR 0.74; p=0.04).

Conclusion—Our study provides preliminary evidence that overweight/obese black and **healthy weight** Hispanic patients experience disparities in provider communication quality.

Practice Implication—Curricula on weight bias and cultural competency might improve communication between providers and their overweight/obese black and **healthy weight** Hispanic patients.

Keywords

Provider communication; obesity; health disparities

1. Introduction

High quality patient-provider communication has generally been associated with increased patient satisfaction and perceived health care quality [1, 2]. It is also positively associated with patient recall, adherence to medications and self-management, behavior change, and health outcomes for **some** chronic conditions [3-6]. For example, better patient-provider communication among patients **with diabetes mellitus** has been linked to increased adherence to medication, diet and exercise recommendations, as well as foot care self-management [5].

Patient body weight may influence the quality of communication between patients and their **providers**. Physicians have less respect for patients with obesity [7] and believe that they lack motivation [8], which may affect how **physicians** communicate with these patients [9]. Studies among primary care physicians suggest that they demonstrate less emotional rapport building (e.g., empathy, concern, reassurance, and partnership) with obese patients compared to normal weight patients [10]. Impaired communication between obese patients and **their health care providers** may be a consequence of **provider** weight bias, which has been well documented **among physicians and nurses** [11-13].

The body of research examining **provider** communication, patient-provider relationship quality and patient satisfaction with care among obese patients is mixed. With respect to weight bias, some evidence suggests that obese patients identify physicians as one of the most frequent sources of stigmatization [14]. Nurses, although to a lesser extent than physicians, were also identified as a source of stigma, [14]. Other research has found that older obese patients report greater satisfaction **with their provider as** compared to healthy-weight counterparts [15]. The literature related to patient-provider communication and patient satisfaction has documented few differences between obese and healthy weight individuals in **how they rate** relationship quality with their providers [16] **or their** satisfaction with ambulatory care [17]. These null findings may **result from** failure to account for important patient-level confounders – such as co-morbid conditions, health status, language preference, U.S. acculturation, and smoking status – which may affect **patient-provider** relationships [18-25].

Patient-provider communication may also be influenced by **providers'** biases related to patient race/ethnicity. Prior research has shown that some **providers** have implicit biases against black patients, associating these patients with being less cooperative, more contentious, and less adherent [26-28]. As a result, black patients may experience less patient-centered communication [29] and report lower levels of trust in providers [30]. Among Hispanic patients, research has found that Spanish-speaking and foreign-born Hispanics are less satisfied with provider communication **quality** as compared to white, black, English-speaking Hispanics and U.S.-born Hispanics [18, 25]. Patient acculturation, patient-provider language barriers, and perceived lack of provider cultural competency may contribute to this disparity [18, 25, 31]. Given the documented disparities in patient-provider communication among minority and overweight groups [7, 10, 18, 25, 29], individuals included in both groups (e.g., obese **and black**) **might experience poorer** patient-provider communication than individuals who belong to only one **group** (e.g., obese **or black**). We

are unaware of prior studies that have considered differences in patient-provider communication **by such weight-race/ethnicity groups**.

Our primary aim was to examine the association between patient weight and satisfaction **with provider communication quality**. We hypothesized that overweight and obese patients would report poorer provider communication **within 4 domains** (explained things so patients understood, listened carefully, showed respect, and spent enough time). In addition, we examined whether patient race/ethnicity modified the association between patient weight and provider communication quality. We hypothesized that minority patients **with overweight and obesity** would report poorer provider communication than healthy **weight-white** patients.

2. Methods

2.1 Data source

This cross-sectional analysis pooled 2009 and 2010 data from Medical Expenditure Panel Survey's (MEPS) Household Component (MEPS-HC) and supplemental Adult Self-Administered Questionnaire (SAQ) files. The MEPS, which is conducted by the Agency for Healthcare Research and Quality (AHRQ), collects data from a nationally representative sample of U.S. non-institutionalized and non-military families and individuals [32]. The SAQ is administered to all MEPS-HC respondents 18 years and older [33]. Additional details about MEPS methodology and sampling can be found through the MEPS website [32]. The study population consisted of MEPS participants 18 years who had **an appointment at a doctor's office or clinic** within the previous 12 months (n=25,971). Pregnant women and underweight individuals (BMI <18.5 kg/m²) were excluded from the analysis (n=1,855). We excluded underweight individuals due to the small sample size (n=272), and pregnant women as weight gain during pregnancy could affect weight status classification.

2.2 Measure

Our four dependent variables were previously validated measures of patient satisfaction with provider communication quality. These measures were obtained from four questions incorporated into the MEPS from the Consumer Assessment of Healthcare Providers and Systems (CAHPS) survey [34, 35]. These questions asked, within the past 12 months how frequently patients thought that their health care providers a) explained things so that they understood, b) listened carefully to them, c) showed respect for them, and d) spent enough time with them during visits. Individuals could answer: never, sometimes, usually, and always. Each of the four domains have been shown to improve patient-provider communication. For example, thorough provider explanations provided patients with sufficient information to make well-informed decisions [36] and improves treatment adherence [37, 38]. Another example is that spending more time with patients allowed for more information to be exchanged with patients, including detailed patient medical histories and lifestyle counseling [39]. We chose to dichotomize these responses based upon the cut-points in the data, as few participants (<3%) responded "never." We defined "low quality" if

participants responded never or sometimes, and “high quality” if they responded usually or always.

Our primary independent variable was patient weight status based on self-reported body mass index (BMI), which we classified according to standard NIH categories of healthy weight, overweight, and obese [40]. For the second aim, the independent variable was an interaction of patient weight status and patient race/ethnicity. Race/ethnicity was categorized as non-Hispanic white, non-Hispanic black, and Hispanic. We excluded the non-Hispanic other category from this analysis as the group was highly heterogeneous, and thus would be difficult to draw conclusions about the effects of race/ethnicity and obesity on communication quality.

Covariates of interest included patient demographics, health status, and access to care. Demographic variables included age, gender, race/ethnicity, U.S. geographic region, country of birth (U.S. vs. foreign-born), and language most frequently spoken at home. Health status variables included self-rated health status, number of obesity-related comorbidities (hypertension, heart disease, stroke, high cholesterol, and diabetes mellitus), and smoking status. Access to care variables included insurance status and having a usual source of care.

2.3 Statistical analysis

We conducted all analyses in Stata IC 12.0 (College Park, TX). We used descriptive statistics to characterize the study sample. For the primary aim, we performed multivariate logistic regression to examine the association between patient weight and the quality of each of the four aspects of the provider communication. We adjusted for all the demographic variables, health status variables, and access to care variables described above, given prior evidence suggesting them as potential confounders [15-24]. For the secondary aim, we conducted multivariate logistic regression that included the interaction term between patient weight and race/ethnicity (weight-race/ethnicity groups), and adjusted for patient demographics, health status, and access to care. We used healthy weight whites as the reference group for our analyses. MEPS **employs a complex** survey design **that** includes stratification, clustering, multiple states of selection, and oversampling of low-income and minority groups. The analyses accounted for MEPS’ complex survey design by using Stata’s suite of survey commands (“svy” commands), which ensure that the standard errors are not inappropriately small. To obtain estimates that representative of the 2009-2010 U.S. non-institutionalized civilian population, we adjusted all models using the sampling weights (SAQ sampling weights as recommended by MEPS methodology [41]), which accounts for the stratified and clustered design of the MEPS survey

3. Results

Table 1 presents the study sample characteristics. More than half of the sample was female (55%). Two-thirds were overweight (35%) or obese (33%). Most were non-Hispanic white (74%); non-Hispanic blacks and Hispanics each comprised 10% of the sample. The majority reported English as the most common language spoken at home (92%) and were born in the U.S. (88%). More than half of the study sample was in excellent or very good health (55%), and 41% of the study sample reported having no obesity-related comorbidities. Most were

non-smokers (84%), had a usual source of care (87%), and had private health insurance for some part of the previous year (73%).

Unadjusted bivariate relationships between provider communication quality and patient weight status are shown in Table 2, and results of the fully adjusted models are in Appendix Table A-1. We found no significant difference in any measure of provider communication quality by patient weight status.

The figure presents the adjusted odds ratios comparing reports of high quality provider communication across **weight-race/ethnicity** groups. Obese black patients were significantly less likely to report that their providers explained things well (OR = 0.78, 95% CI: 0.62 – 0.97, $p = 0.02$) and spent enough time (OR = 0.81, 95% CI: 0.66 – 0.99, $p = 0.04$). Overweight black patients also reported that providers did not spend enough time (OR = 0.78, 95% CI: 0.63 – 0.95, $p = 0.02$). Interestingly, healthy weight Hispanic patients were significantly less likely to report that their provider explained things well (OR = 0.74, 95% CI: 0.55 – 0.99, $p = 0.04$). Results from the full weight-race/ethnicity interaction model can be found in Appendix Table A-2.

4. Discussion and Conclusion

4.1 Discussion

Across four domains of provider communication, we found that patients experience similar communication quality regardless of body weight. Our findings are similar to prior studies that found few differences in patient satisfaction with provider communication and ambulatory care [15-17]. Importantly, we were able to account for potential patient-level confounders in our analysis, for which these prior studies had not accounted and that we suspected might have contributed to their null findings. Given that we showed no differences in provider communication despite our robust analysis, patient weight alone does not seem to be associated with differential provider communication. Prior research has shown that overweight and obese patients generally trust their healthcare providers [42] and providers spend more time with their obese patients related to management of multimorbidity [43, 44]. These factors may contribute to equitable perceptions of provider communication across patient weight groups.

In addition to individually examining the effects of patient weight and race/ethnicity on provider communication, we considered whether an interaction between weight-race/ethnicity influences provider communication quality. We believe that this is the first study to explore this interaction, and therefore, we consider all of our findings of a preliminary nature. We discuss our findings below by weight-race/ethnicity groups.

We found that obese black patients were significantly less likely to report that their provider explained things to them in a way that they could understand or spent enough time with them as compared to healthy weight whites. Similarly, overweight black patients were significantly less likely to state that their provider dedicated adequate time during their visits. We found no significant communication differences among healthy weight blacks. These findings suggest that while overweight/obese patients experience similar

communication quality as healthy weight white patients, overweight/obese black patients may experience worse communication quality with their providers. In the U.S., the prevalence of overweight and obesity is higher among blacks than whites [45] and blacks experience a greater burden on chronic disease such as hypertension and diabetes mellitus [46]. Therefore, providers may be called upon to engage in more counseling with these patients to manage their obesity and increased risk for multimorbidity, if not already present. Prior studies have suggested that strong patient-provider communication is associated with improved patient adherence and better health outcomes [3-6]. Therefore, our finding that overweight and obese black patients experience poorer provider communication quality suggests that the effectiveness of provider counseling may be impaired and contribute to these patients' health disparities. Additional studies are needed to confirm these differences in provider communication among overweight and obese black patients and to evaluate whether they do contribute to poorer health outcomes.

Among Hispanics, we found that healthy weight patients were less likely to report receiving clear explanations from their providers as compared to health weight whites, and there were no significant differences in provider communication among overweight or obese Hispanics. This finding of poorer provider communication among healthy weight Hispanics was unexpected, and we have identified no other studies with similar findings. It is unclear what might be driving this phenomenon. Rather than speculate on possible explanations, we urge other researchers to confirm our findings and explore in detail provider and patient factors contributing to this perception.

There are several limitations with this study. BMI was self-reported, **which is** likely to be underestimated [47]. The cross-sectional design limits our ability to **make conclusions about causal inference**. We were unable to control for provider characteristics **that** have **previously** been shown to influence patient-provider communication quality [48-51], **as these variables had a** high degree of missing data **in MEPS** (e.g., 57% for provider gender and 58% for provider race). Failing to include provider characteristics may bias our results away from the null, since provider characteristics may explain some of the variation in patient response [51, 52]. We also could not determine which health care providers patients were considering when answering the communication questions or the number of health care providers that they encountered last month. If a patient saw more than one provider, they may experience differences in the quality of communication with each provider. Our analysis is unable to account for these differences. MEPS only provided patient-reported perceptions of communication quality, and we could not include provider perceptions or independent assessments of communication quality. Prior research has indicated that providers and patients may differ in their perception and definition of quality health care, including communication [53]. Finally, we ultimately consider the analyses presented to be exploratory in nature. Future studies **should be adequately powered to confirm of the association of weight-race/ethnicity groups on provider communication, given that multiple comparisons are inherent element of the study** design.

4.2 Conclusion

Our analysis of a large nationally representative dataset **of the U.S.** suggests that provider communication quality does not vary for white patients by weight status. However, overweight and obese blacks and **healthy weight** Hispanics **may** experience poorer communication quality with their providers.

4.3 Practice Implications

High quality patient-provider communication is an important part of maintaining a strong relationship and high quality patient care. Improving communication quality between providers and overweight and obese black and healthy weight Hispanics may play an important role in helping these patients improve their health. Understanding factors that influence communication quality weight-race/ethnicity groups may be critical to the future development culturally tailored counseling programs [54].

I confirm all patient/personal identifiers have been removed or disguised so the patient/person(s) described are not identifiable and cannot be identified through the details of the story.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

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Figure I.

Odds ratios comparing patient reported provider communication quality by patient weight and race/ethnicity. OR calculated using multivariate logistic regression models adjusted for patient characteristics: age, gender, education, race/ethnicity, language spoken at home, perceived health status, number of obesity-related chronic comorbidities, current smoking status, usual source of care, health insurance, and region. Estimates calculated using survey weights.

* Denotes statistically significant odds ratios (ORs) at $p < 0.05$ as compared to white, healthy weight patients (reference group).

Table 1

Sample characteristics

	Healthy Weight n = 8,301	Overweight n = 9,161	Obese n = 8,509	Overall N = 25,971
Age in years, Mean (SD)	47.1 (0.4)	51.6 (0.3)	50.7 (0.3)	49.8 (0.3)
Gender, %				
Female	64.6	46.8	55.2	55.4
Education, %				
Less than high school	12.7	12.0	14.1	13.0
High School or GED degree	42.6	46.1	52.2	46.8
College degree or beyond	44.7	42.0	33.7	40.3
Race/Ethnicity, %				
Non-Hispanic white	75.6	73.9	71.6	73.8
Non-Hispanic black	7.3	9.9	14.2	10.3
Hispanic	8.5	10.9	10.8	10.0
Non-Hispanic other *	8.6	5.3	3.4	5.8
Language spoken most often at home, %				
English	91.6	91.5	93.9	92.3
Spanish	3.9	5.9	5.0	4.9
Other	4.5	2.6	1.2	2.8
U.S. Born Status, %				
Yes	85.7	86.7	91.1	87.7
Perceived health status, %				
Excellent/Very good	65.5	56.7	41.2	54.8
Good	23.1	29.8	36.5	29.6
Fair/Poor	11.5	13.6	22.3	15.6
Number of obesity-related comorbidities, %				
0	57.4	36.4	26.9	40.5
1 or 2	31.9	47.3	47.7	42.2
3 or more	10.7	16.3	25.4	17.3
Current smoking status, %				
Smoker	15.5	16.1	16.2	15.9
Has a usual source of care, %				
Yes	85.3	87.3	89.9	87.4
Health insurance, %				
Any private	74.6	74.2	70.3	73.1
Public **	17.1	17.5	21.0	18.4
Uninsured	8.3	8.3	8.7	8.4
Region, %				
Northeast	21.2	18.9	18.0	19.4

	Healthy Weight n = 8,301	Overweight n = 9,161	Obese n = 8,509	Overall N = 25,971
Midwest	20.9	22.3	24.3	22.4
South	33.6	37.1	38.3	36.3
West	24.4	21.7	19.4	21.9

Percent missing is <2% for all variables. Estimates calculated using survey weights.

Healthy weight BMI: 18.5 – 24.9 kg/m²; Overweight BMI: 25.0-29.9 kg/m²; Obese BMI: ≥ 30 kg/m²

* Other race includes: Asian, Pacific Islander, American Indian, Aleut, Eskimo

** Public insurance includes: Medicare or Medicaid

Table 2

Unadjusted bivariate relationships between patient-provider communication quality and patient weight status, n(%)

	Healthy Weight	Overweight	Obese	P-value
Explain well (n=25,837)				
Low quality	744 (9.0)	813 (9.0)	801 (9.4)	0.49
High quality	7,521 (91.0)	8,295 (91.1)	23,479 (90.5)	
Listen carefully (n= 25,715)				
Low quality	793 (9.7)	823 (9.1)	866 (10.3)	0.01
High quality	7,428 (90.4)	8,242 (90.9)	7,557 (89.7)	
Show respect (n=25,868)				
Low quality	632 (7.6)	713 (7.8)	748 (8.8)	0.03
High quality	7,638 (92.4)	8,409 (92.2)	7,729 (91.2)	
Enough time (n=25,837)				
Low quality	1,157 (14.0)	1,187 (13.0)	1,192 (14.1)	0.14
High quality	7,108 (86.0)	7,922 (87.0)	7,271 (85.9)	

Healthy weight BMI: 18.5 – 24.9 kg/m²; Overweight BMI: 25.0-29.9 kg/m²; Obese BMI: ≥ 30 kg/m²