The Association of Visit Length and Measures of Patient-Centered Communication in HIV Care:

A Mixed Methods Study

M. Barton Laws, Ph.D.,
Department of Community Health, Brown University, 121 South Main St., G-S121-7, Providence, RI 02912. 401-863-6977. Michael_Barton_Laws@Brown.edu

Lauren Epstein, M.D.,
Tufts Medical Center

Yoojin Lee, M.Sc.,
Tufts Medical Center

William Rogers, Ph.D.,
Tufts Medical Center

Mary Catherine Beach, M.D., and
John Hopkins University School of Medicine

Ira B. Wilson, M.D., M.Sc.
Brown University

Abstract

Introduction—Patient centered clinical communication may be associated with longer encounters.

Methods—We used the General Medical Interaction Analysis System (GMIAS) to code transcripts of routine outpatient visits in HIV care, and create 5 measures of patient-centeredness. We defined visit length as number of utterances. To better understand properties of encounters reflected in these measures, we conducted a qualitative analysis of the 15 longest and 15 shortest visits.

Results—All 5 measures were significantly associated with visit length (P<.05, rank order correlations .21 to .44). In multivariate regressions, association of patient centeredness with visit length was attenuated for 4 measures, and increased for 1; two were no longer statistically significant (p>0.05). Black and Hispanic race were associated with shorter visits compared with white race. Some of the longest visits featured content that could be considered extraneous to appropriate care.

Conclusion—Patient centeredness is weakly related to visit length, but may reflect inefficient use of time in long encounters.

Practice Implications—Efforts to make visits more patient centered should focus on improving dialogue quality and efficient use of time, not on making visits longer. Shorter visits for Black and Hispanic patients could contribute to health disparities related to race and ethnicity.

Introduction

The length of primary care visits in the United States has been the focus of much recent discussion. While there is no evidence that typical primary care visits have grown shorter in recent decades,(1) the perception that available time is too short is common. One possible reason for this perception is that patients' needs may have become more complex, for such reasons as an aging population, and the increasing technical complexity of medicine. A recent report estimated that implementing recommended guidelines for preventive services would place an unrealistic time burden on routine ambulatory care.(2)

Another possible explanation is that the expectations of physicians and patients have changed such that the 15 to 20 minute visit typical in the U.S. no longer seems adequate. Until the mid 20th Century, the generally accepted physician-patient relationship in the West was "benevolent paternalism."(3, 4) The expertise and wisdom to choose appropriate treatment resided entirely with the physician. The patient's role was to trust and to follow "doctor's orders." The "patient centered" care movement began to transform the paradigm in the 1970s. Lipkin et al in 1984 defined it as treating the patient "as a unique human being with his [sic] own story to tell."(5) Many others have since proposed definitions and criteria for patient centeredness, as reviewed by Saha, et al.(6)

For example, Epstein, et al(7) propose that patient-centered communication must include: "1. Eliciting and understanding the patient's perspective – concerns, ideas, expectations, needs, feelings and functioning. 2. Understanding the patient within his or her unique psychosocial context. 3. Reaching a shared understanding of the problem and its treatment …, 4. Helping patients to share power and responsibility … " Plausibly, achieving these ideals would require more time than interactions centered purely on biomedical issues, as framed and directed by the physician. As Epstein et al further discuss, however, there is no consensus about how to measure patient-centeredness, and limited evidence as to how its various components are related to outcomes.

Evidence shows that patients are generally more satisfied with longer visits,(8, 9) and that patients who spend more time with physicians than initially expected are more satisfied.(10) Furthermore, studies have found that patients ask more questions during longer visits and are generally more engaged.(8, 9) Also, physicians prescribe fewer medications and ask more questions regarding lifestyle and preventive activities during longer visits.(11)

On the other hand, some studies suggest that patients are more satisfied by the quality of time spent with physicians than by quantity. Visits that patients describe as more 'positive' are perceived as longer by patients.(12) Patients are more satisfied with their visit when time is spent 'chatting' with physicians regarding non-medical topics, and not just based on the length of the visit.(8, 9)

To better understand the relationship between visit length and indicators of patient centeredness, we used a new coding system to conduct a quantitative analysis of audio-recorded visits in HIV care. The General Medical Interaction Analysis System (GMIAS), can capture various concepts which have been used previously, and others, such as patient expressive utterances (e.g. opinions, goals, affect) that are not captured by comparable systems. We used the GMIAS to create measures of patient-centeredness. But in addition, we conducted a qualitative analysis of the 15 visits with the most utterances, and the 15 with

the fewest. Our goal was twofold: first, to insure that our quantitative analysis didn't oversimplify or misconstrue the dialogue that took place during these visits, and second, gain a more intuitive feel for why visits were long or short

2. Methods

2.1 Patients

The clinical trial for which these audio recordings were made is described elsewhere.(13–15) The intervention provided physicians with information about patients' recent antiretroviral (ARV) adherence, and was intended to improve physician-patient communication about the issue. The trial used a cross-over design in which each patient had two control and two intervention visits. We attempted to audio-record the first and third visit – constituting one intervention and one control visit for each patient. Usable recordings were sometimes unavailable due to reasons such as participant or provider refusal, or poor audio quality. Of the 126 who completed 3 study visits, paired audio-recorded visits were assessable for 58 participants (46%). These 116 recordings constitute the data for this study. There were no differences between the participants for whom we did and did not have paired recorded visits on the following characteristics: age, gender, race, education, marital status, housing status (% homeless), sexual orientation, employment, HIV risk factor, physical or mental health status, depression, or beliefs about the usefulness of HIV antiretroviral therapies (p>0.05). Patient eligibility criteria included current use of HIV antiretrovirals, detectable HIV RNA at the most recent clinical visit, willingness to use an electronic pill bottle cap, and English fluency. All participants signed written informed consent, and the study was approved by the local Institutional Review Boards and Ethics Committees of all participating sites.

2.2 Physicians

Twenty five physicians participated, from 5 diverse practice sites: two hospital based specialty clinics, a group practice, a community health center, and an individual practice. Twenty-two were white, non-Hispanic, one Hispanic, one Iranian-American and one Indian-American. All had extensive HIV-care experience.

2. 3 The Generalized Medical Interaction Analysis System

The GMIAS incorporates constructs from existing, widely used coding systems such as the Roter Interactional Analysis System (RIAS),(16) and the DYAD,(17) which have been used previously to operationalize patient-centeredness and related concepts. However the GMIAS, uniquely, assigns two codes to each utterance, one for topic, one for interaction process. Previous systems, such as the RIAS, do not consistently separate these properties, and so do not permit analysis of interaction process within detailed topic categories. For topic codes, we began with concepts consistent with the RIAS, but added subcategories in order to capture information of specific interest for our research (See Table 1). For coding interaction process, we applied Speech Act Theory,(18, 19) which holds that language not only represents reality, but accomplishes social acts such as questioning, giving information, conversation management, showing empathy, directives (urging or mandating action by another), commissives (promising or indicating action), humor, or social ritual.

We divide giving information into two major categories, "representatives" – assertions about intersubjective reality, facts about the world; and "expressives" -- revelations of the speaker's state of mind, beliefs, desires, and feelings. Because symptom reports are normally treated as factual by providers, and the speaker's purpose in making them is not self-revelation, we code them as representatives. Examples of representatives include "It hurts when I swallow" and "This condition is called peripheral neuropathy." Examples of

expressives include "I prefer a once-a-day regimen" and "I hope you feel good about what you have accomplished." The codes are hierarchical with several levels of specificity. More information about the GMIAS is available at http://160.109.101.132/icrhps/docs/codingmanual2.doc.

Intercoder reliability, based on comparing the work of three trained coders with that of the system developer (MBL), ranged from moderate to excellent, depending on the level of specificity. For the first digit of topic codes, percent agreements ranged from 0.89 to 1.0, and for the second and third digits ranged from 0.85 to 0.99 and from 0 .72 to 0.96, respectively. Corresponding kappas ranged from 0.69 to 1.0. For the first digit of speech act codes, percent agreements ranged from 0.81 to 0.95, and for the second and third digits ranged from 0.67 to 0.94 and 0.54 to 0.94, respectively; kappas ranged from 0.49 to 0.93. The GMIAS has been used for two previous publications: the report of the intervention trial(14), and a study of communication about sexual risk behavior.(20)

2.4 Quantitative Analysis

2.4.1 Variables

Patient-centered Care: We used the GMIAS to construct five variables operationalizing previously used indicators of patient-centered care. A key component in standard definitions of patient centered care is "Eliciting and understanding the patient's perspective – concerns, ideas, expectations, needs, feelings and functioning."(7) These correspond to expressive speech acts, as coded in the GMIAS. The first measure is therefore the fraction of all utterances which are patient expressives.

The second measure is the proportion of all utterances which are within the psychosocial topic, as inclusion of psychosocial context is part of common definitions of patient-centeredness. A similar measure has been applied before using the RIAS.(21) While it does not follow that psychosocial subjects will be discussed at length in every visit during an ongoing patient-centered physician-patient relationship, we reasoned that when it does occur, it will be associated with longer visits.

The third measure is physician verbal dominance – simply the ratio of physician to patient utterances. This measure was used in a seminal work which found that patient engagement in care – a concept similar to what would today be called patient-centeredness – was associated with improved glycemic control among people with diabetes.(17)

The fourth and fifth measures, adapted from Greenfield et al,(17) are the ratio of patient to physician questions, and percent of patient utterances which are in the "control parameter." In the GMIAS, these are questions, topic introductions and closures, directives, and commissives.

Visit Length: Although most previous research in this field has operationalized visit length as clock time, we used the number of utterances. We believe that utterance count is a more accurate measure of the amount of communication in the visit. Clock time is influenced by such factors as speakers' disfluency – stammering, false starts, repetition – and silences. Visits are frequently interrupted by phone calls and physical intrusions by clinic personnel regarding extraneous matters. And some people simply talk more rapidly than others. Nevertheless, in our data the utterance count and clock time were highly correlated (r=.84, p<.0001). We tested our analyses using clock time as well as utterance count as a measure of robustness.

Covariates: Patient characteristics were assessed by self-report. Race/ethnicity categories were White, Black, Asian, Hispanic and other. We classified as "heavy drinkers" those who

reported drinking 3–4 times a week or more and having 3 or 4 drinks or more per occasion. Those who reported using illicit drugs in the past six months were classified as "current" drug users. Viral loads and CD4+ counts were taken from tests done 20 to 30 days before each visit. We also tested models including site of care. (These data are not well-suited to test the importance of provider characteristics as some have only one or two patients in the sample, making it impossible to sort out the influence of provider vs. patient.)

2.4.2 Analyses—While we make no assumption as to the direction of causation, visit length was the dependent variable, and measures of patient centered care the independent variables, for analyses. Because the frequencies of various categories of utterances are markedly non-normal, skewing toward smaller counts, we used rank order for bivariate analyses, to prevent extreme cases from being overly influential. We used Generalized Estimating Equations in bivariate tests to account for the fact that each patient had two recorded visits.

We used negative binomial regression to examine multivariable relationships of each measure of patient-centeredness with visit length, again accounting for clustering within patients. Covariates considered for inclusion in the multivariable model on the basis of bivariate testing and theoretical interest included patient gender, patient race, intervention vs. control condition, patient sexual orientation, log viral load, CD4+ count, and patient self-reported substance abuse. Final models included only covariates with p-values of <0.05.

2. 5 Qualitative description

To better understand the implications of our quantitative observations, Dr. Laws read the transcripts of the 15 longest and 15 shortest visits, and summarized the events in each of them. Two of the other authors also read the transcripts and after discussion, the authors came to agreement on interpretation. This approach did not aim at formal thematic analysis or theoretical interpretation, but case description, in order to see how the events in each visit may have generated the observed quantitative patterns.

3. Results

3.1 Patient and visit characteristics

Of the 58 patients, the mean age was 42.7 years (SD 7.5), 31% were female, 49.1% were white, 26.3% African American, 21.1% Hispanic, and 3.5% were of other race/ethnicity; 55.2% were heterosexual, and the median CD4 count was 314 cells/mm^3. Having detectable viral load was a selection criterion, but most were not very high (median 432 particles/mm^3, 25th percentile 75, 75th percentile 5,731). Observed visit length was quite consistent with previous studies, with a mean duration of 16:31 minutes and a median of 15:27 minutes. (Clock time did not include periods when the physician was not in the room.) The median utterance count was 539, ranging from 130 to 1,490. Table 2 shows the distribution of the various measures.

3.2 Bivariate relationships

All five measures of patient centeredness were significantly positively associated (p<.05) with visit length, with rank order correlations ranging from .21 to .44 after adjusting for clustering within patients (Table 3). These parameters can theoretically range from 0 to 1. They correspond to the change in rank of the dependent variable associated with one change in rank of the independent variable. The pattern of relationships between indicators of patient-centeredness and clock time was similar (data not shown.)

3.3 Multivariable relationships

Table 4 shows two sets of models. Model 2 is adjusted for race, study arm (control vs. intervention), and site (parameters not shown), which were the only statistically significant covariates. Only one of the sites, a group practice, was significantly different from the reference site in visit length, tending to have longer visits. In four cases, the adjustment attenuated the relationship between the measure of patient centeredness and visit length. For "percent of patient expressives" and "ratio of physician to patient utterances" the adjustment caused the p-value to exceed .05. For "percent patient control utterances" the parameter estimate increased with adjustment, and the p-value changed from 0.0044 to 0.0009. The negative binomial coefficients refer to log ratios. A coefficient of 0.1 is interpreted as follows: if the indicator of patient centeredness were increased by 10%, the visit would be $\exp(0.1) = 1.105$ times as long.

Patient race/ethnicity and the intervention indicator were significantly related to visit length in all adjusted models. Black race/ethnicity was significantly associated ($p<0.05$) with shorter visits in all models, and Hispanic race/ethnicity in three of five models. Being in the control arm of the experiment was also consistently associated with shorter visits. This was not surprising as the purpose of the intervention was to increase discussion about antiretroviral medication adherence.(14)

3.4 Qualitative description

The topics are largely driven by the patients in four of the five longest visits. A similar proportion holds in the sixth through fifteenth longest visits. Two are physician dominated and driven by medical complexity, in six the patient does much of the agenda setting, and two of them are relatively balanced in the proportion of patient- and physician-initiated topics. In the following, we number cases by their rank in visit length.

Case 2 is the same physician-patient dyad as Case 12. In both visits the patient initiates a large amount of discussion about issues which we coded as Logistics, such as not liking the way she is treated by clerical and nursing personnel, wanting to have her ob/gyn care transferred to another institution, and wanting office-based methadone treatment rather than attending a methadone clinic. There is also considerable patient-driven biomedical content which is not of great concern to the physician, such as skin tags and spider veins, and both visits feature a great deal that we coded as Socializing.

One way of looking at this is that so much of this patient's time and personal relationships are bound up with her medical care that the distinctions among logistics, biomedical, psychosocial and socializing are not salient for her. On the other hand these interactions also include what might be characterized as digressions, and raise boundary issues. For example, the physician spends considerable time teaching the patient about aspects of recent world history, discusses personal information about another of her patients, and shares an intimate confidence about her family with the patient.

Case 1 also raises boundary issues. The physician is female, and the patient is a gay man who gave up his pattern of casual sex with multiple partners, and drug abuse, after learning that he was HIV positive. He has abandoned his former friendships and is now socially isolated. The physician initiates and pursues a long discussion of this common problem. The physician finally expresses personal fondness for the patient, and asks to meet in a social setting. The patient seems uncomfortable with this suggestion.

Case 3, a woman in recovery, is also struggling to stay away from old associates, once again be a good mother, and rebuild a constructive social life. The physician is consistently affirming, positively reinforces the patient's goals, and listens reflectively.

Case 4 features predominantly biomedical content but it is driven by concerns raised by the patient, who works as an allied health professional. There are long stretches consisting of the physician providing information, but in response to explicit patient requests. For example, the patient wants liposuction because of liposdystrophy, and is transgendered. The physician spends considerable time discussing whether various plastic surgeons will constitute a good referral for a transgendered person. The visit also features much socializing, including banter about a popular singer, and the physician criticizing colleagues who work in the same practice about matters unrelated to the patient's care.

Case 5 is long because of biomedical complexity. The patient has viral drug resistance and is pregnant, and the physician is considering changing the regimen. This physician is highly directive and spends some time "lecturing" the patient about the importance of strict adherence. The physician's agenda clearly dominates in this visit, and there is little psychosocial content.

Cases 14 and 15 are the same physician-patient dyad. In case 14, the patient tells a long, emotional story about his mother's recent death and squabbling with his siblings over the estate. In the second visit, the patient comes in with a lengthy written list of symptoms and biomedical concerns. In both cases, the patient's agenda dominates, but one is mostly psychosocial, the other mostly biomedical.

There is less to be said about the 15 shortest visits because, obviously, there is much less content. Although some are coded as having an above-average proportion of psychosocial content, this is never very meaningful. For example, in one case the physician merely asked if the patient was still using heroin, and the patient responded negatively. Since the visit was so short, this still registered as a substantial percentage of the total. For the most part, these visits are highly biomedically focused. Patients ask few or no questions, and do not initiate topics. Patient responses to physician questions are brief. The visits largely consist of review of medications, review of systems, and a brief inquiry about adherence.

In two of the short visits, there are special circumstances. In one, the physician thought the patient had come in only to have a wart removed. The physician confessed that he had not reviewed the patient's lab reports. After a brief social chat, they rescheduled. In another case, the patient was in a hurry to get to a temporary job, and grew anxious as the physician extended the visit.

4. Discussion and Conclusion

4.1 Discussion

There were two main findings from the quantitative part of this study. First, we found that longer visits were weakly associated with indicators of patient centeredness. Second we found that white, non-Hispanic patients had longer visits than Blacks or Hispanics.

The qualitative analysis showed that visits may be unusually long because of biomedical complexity – but in most cases they were long because of attention to patients' agendas. The "voice" in these discussions is noticeably different. Patient-driven agendas feature complex narrative and a great deal of expressive and emotional content, whereas physician-driven biomedical agendas are characterized more by representative speech acts. Twenty-five years ago Mishler[22] contrasted "The Voice of Medicine" and "The Voice of the Lifeworld." He described physicians thwarting patients' efforts to tell their stories in their own narrative voice, and constraining the conversation within a biomedical frame. In the long, patient-driven visits, the physicians do not do this, and the voice of the lifeworld emerges.

While in our data longer visits are somewhat more likely to feature patient-centered interaction as we operationalized it, the qualitative review shows how complex this relationship is, and emphasizes that the relationship between patient-centeredness, and efficiency of clinical communication, is not straight forward. While there may be intrinsic value in allowing patients to set much of the agenda for a medical visit and to express themselves at length, in some cases the physician did not seem to have a constructive response to the patient's concerns, or the discussion strayed far from the business of a medical encounter in ways that could be construed as having no evident instrumental value. Indeed, four of these encounters involving three physician-patient dyads appeared to transgress the boundaries we normally expect for clinical practice. A plausible way of viewing these events is that, as the encounter enters fully into the voice of the lifeworld, its character as a structured, professional interaction with role asymmetry, at least in some cases, dissolves.

An observational study of primary care visits using simulated patients found that physicians commonly made self-disclosures of no evident benefit to patient care.(23) One of our physician-patient dyads with long visits featured a good deal of such behavior. However in this case it occurred in the context of a long-standing relationship and it appeared the physician had adopted the patient as a regular confidante, which we view as a quite different phenomenon.

These findings suggest that thinking about visits as either patient centered or physician centered is, as others have previously suggested,(24) an oversimplification. The concept of "relationship centered care," because it explicitly recognizes that both physicians and patients have needs and interests that result from patient-physician interactions, has been forwarded as a more useful and complete framework within which to view patient-physician interactions.(25) Our findings support the theory that both physicians and patients have social and relational needs and interests, which manifest themselves in visits. To the extent that physicians' relational needs and interests create a longer visit, our measures do not appear to distinguish the interaction process from one driven by patient-centered communication focusing on patients' biomedical and psychosocial needs. In both cases, there is reduced role asymmetry and more psychosocial or other non-biomedical content.

Racial/ethnic disparities in HIV care have been clearly demonstrated. Moore et al found that African-American HIV-infected patients were 15–20% less likely to receive prophylaxis for Pneumocystis pneumonia than whites with the same clinical indications,(26) and other studies show similar findings.(27–29) In studies that also compared Hispanics with whites, differences were similar but not identical to those seen in blacks.(27, 29) There are also clear disparities in the receipt of antiretroviral therapy.(30–33) There are probably multiple reasons for these disparities, including patient-level variables (treatment preferences, and the clinical appropriateness of care), healthcare system-level factors (organization, financing, and availability of services), and care process-level variables (the role of bias, stereotyping, and uncertainty). (34) Our data are the first that we are aware of that demonstrates a systematic difference in visit length between Blacks and Hispanics, and Whites in HIV care. We believe that it is plausible that shorter visits contribute to the disparities described above.

A recent study found that visits for Black patients with hypertension tended to be shorter than visits with white patients.(35) However, another study has found that visits with Hispanic patients in HIV care, while less patient centered than visits with white non-Hispanic patients, were not shorter.(36) Hooper et al. showed that physicians demonstrated less effective interviewing skills and showed less empathy in visits with Hispanics compared with white patients.(37) As there was only one Hispanic, and no Black physician among the providers that we studied, we cannot say whether results would be different for ethnically

concordant patient/provider pairs. But regardless of their mechanism, the differences in visit length that we observed are concerning. While improving the cultural competence of providers is an important goal, interventions to accomplish this to date have had limited success.(38, 39)

There are several study limitations. Our sample size was relatively small, and so our ability to show statistically significant associations in multivariable models was limited. Second, while the 5 care settings in which this study took place were quite diverse, all of the care sites were in Massachusetts, and our results may not be generalizable to other practices settings or geographic regions. Third, because the data we present are from an adherence intervention study for which detectable viral loads were an entry criterion, we cannot predict how our findings would generalize to all patients with HIV cared for at study sites. Lastly, we studied only patients with HIV, and do not know whether the same results would obtain for the care patients with other conditions.

4.2 Conclusion

In summary, in this study of patients with HIV, we found that visit length was weakly related to patient centeredness, but that patient centeredness as we measured it sometimes reflected what we construed as inefficient use of time, while some shorter visits did score high on measures of patient-centeredness. We also found that blacks and Hispanics had consistently shorter visits than whites.

4.3 Practice implications

Efforts to make visits more patient centered should focus on improving dialogue quality and efficient use of time, and not on making visits longer. Shorter visits for Black and Hispanic patients could contribute to the health disparities related to race and ethnicity that are often observed in HIV care.

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.

Acknowledgments

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Table 1

GMIAS coding categories[*]

General Classification	Examples of Specific Categories
Topics	
Biomedical	Diagnosis, symptoms, tests, risk behavior, screening, treatment
Psychosocial	Substance abuse, recovery, emotions, relationships, health of others, social services, housing.
Logistics Socializing	General, physical exam, pharmacy
Speech Acts	
Questions	Open, closed, leading
Representatives (assertions of fact)	General, own behavior, deduction, prediction
Expressives	Values, opinions, desires/goals, emotions, empathy
Directives	Recommend, mandate, encourage
Commissives	Promises, offers, permissions
Jokes	
Social ritual	

[*] This is not a complete listing of the specific coding categories, of which there are more than 100.

Table 2

Distribution of patient-centered care measures and visit length

Variable	Definition	Range	Median (25th, 75th)
Patient centered care variables			
Percent patient expressive	Percent of total utterances (physician plus patient) that are patient utterances *and* have the expressive speech act code	0–14.8	3.86 (2.2,5.3)
Percent psychosocial content	Percent of total utterances (physician plus patient) that have the psychosocial topic code	0–59	4.27 (0,17.4)
Ratio of patient to physician utterances	Total patient utterances divided by total physician utterances	0.23–0.62	0.44 (0.36, 0.52)
Ratio of patient to physician questions	Ratio of total patient questions to total physician questions	0 – 3.8	0.17 (0.06,0.37)
Percent patient "control" utterances	Percent of total patient utterances that have the control speech act code	0–29	8.2 (4.6,11)
Visit length			
Clock time[*]	--	1:50–45:33	15.27 (10:31,21:41)
Utterance count	--	46–1,490	348 (256,535)

[*] The correlation between the clock time and the utterance count was 0.84

Table 3

Rank order correlations for measures of patient centeredness.[*]

Patient Centeredness Variables	Coefficient	P-value
Percent patient expressive	0.21	0.026
Percent psychosocial topic	0.24	0.0004
Ratio of patient to physician utterances [**]	0.29	0.0038
Ratio of patient to physician questions	0.44	<0.0001
Percent patient "control" utterances	0.34	0.0003

[*]
GEE parameter estimates for rank order correlation of measures of patient-centeredness with total number of utterances. (GEE adjusts for correlation within patients, each of whom had 2 visits.)

[**]
Verbal dominance ratio)

Table 4

Bivariate and multivariable models of visit length

	Model 1[*]		Model 2[*]	
	Parameter Estimate	**P-value**	**Parameter Estimate**	**P-value**
Percent of patient expressives	0.024	0.038	0.015	0.1345
Control	--	--	−0.229	.0018
Black	--	--	−0.421	.0071
Hispanic	--	--	−0.278	.0762
Percent psychosocial content	0.010	0.029	0.007	0.0789
Control	--	--	−0.219	0.0035
Black	--	--	−0.469	0.0056
Hispanic	--	--	−0.345	0.0334
Ratio of patient to physician utterances	0.017	0.0026	0.013	0.0301
Control	--	--	−0.230	0.0016
Black	--	--	−0.343	0.0418
Hispanic	--	--	−0.139	0.4195
Ratio of patient to physician questions	0.48	0.0037	0.381	0.0116
Control	--	--	−0.235	0.003
Black	--	--	−0.426	0.0042
Hispanic	--	--	−0.207	0.1547
Percent patient "control" utterances	0.029	0.0044	0.032	0.0009
Control	--	--	−0.23	0.0037
Black	--	--	−0.465	0.0011
Hispanic	--	--	−0.262	0.0436

[*] Model 1 includes only the patient centered care variables shown in the first column. Model 2 includes the patient care variable and race/ethnicity, with "white" as the reference group, and controls also for experimental group (intervention vs. control), and site of care (not shown).