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Patient-Clinician Ethnic Concordance and Communication in Mental Health Intake Visits

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Abstract

Objective—This study examines how communication patterns vary across racial and ethnic patient-clinician dyads in mental health intake sessions and its relation to continuance in treatment, defined as attending the next scheduled appointment.

Methods—Observational study of communication patterns among ethnically/racially concordant and discordant patient-clinician dyads. Primary analysis included 93 patients with 38 clinicians in race/ethnic concordant and discordant dyads. Communication was coded using the Roter Interaction Analysis System (RIAS) and the Working Alliance Inventory Observer (WAI-O) bond scale; continuance in care was derived from chart reviews.

Results—Latino concordant dyad patients were more verbally dominant ($p < .05$), engaged in more patient-centered communication ($p < .05$) and scored higher on the (WAI-O) bond scale (all $p < .05$) than other groups. Latino patients had higher continuance rates than other patients in models that adjusted for non-communication variables. When communication, global affect, and therapeutic process variables were adjusted for, differences were reversed and white dyad patients had higher continuance in care rates than other dyad patients.

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Dr. Roter is the author of the Roter Interaction Analysis System (RIAS) and holds the copyright for the system. Johns Hopkins University also has rights to enhancements of the system. Neither Debra Roter nor Johns Hopkins collects royalties for use of the system in research. Debra Roter and Susan Larson are co-owners of RIASWorks LLC, a company that provides RIAS coding services for communication projects and it is possible that RIASWorks would benefit from dissemination of the current research.

Conclusion—Communication patterns seem to explain the role of ethnic concordance for continuance in care.

Practice Implications—Improve intercultural communication in cross cultural encounters appears significant for retaining minorities in care.

Keywords

Concordance; Patient-Clinician Communication; RIAs; Therapeutic Alliance

1. Introduction

While racial and ethnic disparities in health services have been attributed to a variety of structural and social processes [1], an especially persistent source of disparities in mental health care is the failure of health care clinicians to retain minority patients in treatment after an initial visit [2, 3]. Communication during the intake session appears critical to the establishment of a therapeutic relationship and the patient's willingness to remain in care [4, 5]. Examining the experience of minority patients, most commonly with a clinician of a different ethnic/racial background, the Commonwealth Fund's *Health Care Quality Survey* found that racial and ethnic minority patients report more communication problems with their clinicians than non-Latino white patients [6]. Among survey participants, 33% of Latinos, 27% of Asian Americans and 23% of African-Americans (as compared to 19% of whites) report dissatisfaction with some aspect of patient-clinician communication.

Research suggests that patient-clinician consultations that are discordant in terms of race, ethnicity, or language are characterized by less participatory decision-making, lower levels of patient satisfaction, and higher rates of miscommunication, even after adjusting for markers of socioeconomic status [7, 8]. As a result, it has been postulated that the ethnic/racial matching between clinician and patient may result in superior outcomes [9-13]. Sue and colleagues [12, 13] found ethnic/racial matching to be associated with longer retention in treatment among multiple minority groups, with the notable exception of African-Americans. This success is attributed to better rapport and comfort between concordant patient-clinician dyads, resulting in greater patient satisfaction [9, 14]. Still, a meta-analysis [11] found that ethnic/racial concordance is not a strong predictor of dropout rates ($r = .03$) or length in treatment ($r = .04$), and raised questions about the rigor of previous studies [10]. Another study [15] suggested that although patients may prefer racial/ethnic concordance and endorse more positive views of a provider of their race and/or ethnicity, the average effect size (0.09) suggests little to no benefit. Further, evidence in support of concordance by sex or age has generally yielded negative or inconclusive findings [16-18]. Results from Street and colleagues ([19]) however, suggest that social and emotional factors tied to the patient's sense of shared similarity with a provider in terms of values and beliefs may shed light on discrepant findings to date [19]. Moreover, the construct of homophily is significantly associated with patient-centered communication [19]. These findings lend support to long-standing calls for [9] research examining the role of communication and relationship variables across ethnic/ racial groups in clinical visits, the purpose of the current study. Given the documented ethnic/racial disparities in mental health encounters [20], evidence suggests that these factors may hold particular salience for Latino and other minority patients given the critical value they place on interpersonal relationships [21].

Although observational studies of patient-provider interactions and ethnic/racial matching have been largely conducted in primary care, a number of these have addressed adult and pediatric mental health concerns [22-27]. Largely missing from this body of literature are observational studies in psychiatry, though recent exceptions include two studies examining

medication management visits for patients with depression or bipolar disease [28, 29]. Both report variations in psychiatrists' communication patterns with respect to degree of patient-centeredness and affective tone similar to variations reported among primary care clinicians [30]. To our knowledge, no study has investigated communication during the initial mental health encounter, where the establishment of good rapport and the foundation of a therapeutic relationship succeeds or fails with consequences for patient continuance in care.

The present study describes communication patterns among racially/ethnically concordant and discordant patient-clinician dyads in mental health intake sessions and how it relates to patient continuance in care (defined as attending the next scheduled appointment). We hypothesize that sessions between both white and Latino concordant dyads will be characterized by a stronger working alliance and more patient-centeredness, resulting in higher continuance in care rates than in racially/ethnically discordant dyad sessions.

2. Methods

2.1. Data collection procedures

Data were collected in eight community outpatient clinics in the Northeast US offering mental health and substance treatment to a diverse client population. Study eligibility was limited to individuals receiving outpatient mental health treatment that demonstrated capacity to consent and were non-suicidal or psychotic at enrollment. Exclusion criteria included: screening responses indicative of psychosis or suicidal ideation; and need for interpreter services. See Alegría et al. for a complete description of the study protocol [31].

Of 171 eligible patients approached for study participation, 129 patients participated, 40 patients refused and 2 did not demonstrate capacity to consent. Of the 129, 29 cases were excluded due to poor audio recording quality and one case was excluded because it was the only instance of a concordant African-American clinician-patient dyad. Six mixed ethnicity dyad sessions representing non-Latino white clinicians who spoke Spanish with Latino patients were also excluded from the primary analysis to avoid the possibility of confounding language concordance with other communication-related differences. Results are described in post hoc analysis exploring the role of language in ethnic/race discordant clinician-patient dyads. Ninety-three patient intake sessions with 38 clinicians were included in the primary analysis: 18 self-identified non-Latino white clinicians saw 34 self-identified non-Latino white patients (36.5 %) in white concordant dyads; 10 self-identified Latino clinicians saw 24 self-identified Latino patients (25.8%) in Latino concordant dyads; and 19 clinicians of varying self-identified race and ethnicity saw 35 patients of varying self-identified races and ethnicities (37.6%) in mixed dyads.

Clinicians were recruited through informational meetings with study investigators. Among clinician participants, 31% (n=13) were psychiatrists, 16% (n=6) were psychologists, 47% (n=16) were social workers, and 6% (n=3) were nurses. Patient recruitment was conducted through direct solicitation at the community mental health clinics. Written informed consent was obtained after a complete description of the study was provided. Institutional review boards at each community clinic and at the principal investigator's institution were approved prior to data collection.

All intake sessions were video recorded. Research assistants installed the equipment in the clinician's office prior to the session, started the camera, and left the room. Following the session, all participants completed survey measures and participated in a post-intake qualitative interview (in English or Spanish) regarding presenting problem, perceived rapport and significance of sociocultural factors in patient-clinician interactions.

2.2. Measures

2.2.1. Sociodemographic and clinical measures—Patients reported their gender, age, nativity, employment status, insurance, education, income and time in the US. Intake language of the interview was recorded. Clinicians also reported their gender, age, nativity, and discipline. Patients were assessed for functional limitations with the question: “How many days within the past 30 were you able to work on or carry out your normal activities, but had to cut down on what you did or not get as much done as usual?” Clinicians reported the patient’s primary diagnosis after the visit was complete. Patients and clinicians self-reported race and ethnicity using Census categories as: 1) White (not of Latino origin), 2) Black (not of Latino origin), 3) Latino (independent of race), 4) Asian or Pacific Islander, and 5) American Indian or Alaskan Native.

2.2.2. Continuance in care—Continuance in care was defined as returning for the next scheduled visit; appointment keeping was derived from clinical chart or electronic record review by clinic staff.

2.2.3. Working alliance coding of intake videotapes—Working Alliance was scored directly from session videotapes using the Working Alliance Inventory observer form (WAI-O) bond scale [32]. The WAI bond scale is a 12 item 7-point Likert scale instrument (1 = never, 4 = sometimes, and 7 = always) with higher scores indicating a stronger patient-clinician bond. Sample items from the WAI-O include: “There is mutual trust between patient and clinician” and; “There is mutual liking between the patient and clinician.” The WAI-O has demonstrated adequate levels of reliability and validity for measuring working alliance [33, 34]. Coders viewed the videotapes independently and then filled out the WAI observer report forms. They then reconvened to compare their results. When disagreements arose, coders reviewed the videotape together, discussed it until a consensus was reached. Inter rater reliability of the WAI-O bond scale was established by having three raters code two master tapes. The Pearson correlation of ratings between the pairs ranged from 0.90 to 0.93. After achieving adequate inter rater reliability, separate coders rated all the videotapes. WAI-O bond scale coders were different than the research assistants conducting clinician or patient interviews; all were blind to study data.

2.2.4. RIAS coding of intake session audiotapes—Ninety-three audio recordings that met audibility standards were coded with the Roter Interaction Analysis System (RIAS) [35]. RIAS provides a framework for understanding the dynamics of patient-clinician communication during clinical encounters and has well-established reliability and predictive validity [35], including recent applications in psychiatry [28, 29]. Coding is done directly from the audio or video recording without transcription. Each statement, defined as a complete thought, is assigned to one of 70 mutually exclusive and exhaustive codes (30 patient and 40 clinician codes). RIAS codes reflect task-focused behaviors and socioemotional or affective communication categories of interaction with relevance to the primary communication functions of the visit. At the completion of a session, coders globally rate the emotional tone or affect of the patient and the clinician across several positive (engagement, friendliness, interest (patient and clinician)) and negative dimensions (e.g., anxiety, irritation (clinicians); distress (patient)) on a scale of 1-5 (1=low/none, 5=high).

The coders were not told the race/ethnicity of patients or clinicians, nor were they aware of study hypotheses. Experienced RIAS coders were used for this study and their performance was supervised and monitored throughout the coding period. A 10% random sample of audiotapes (n=10) were drawn throughout the coding period for blind double coding to establish inter-coder reliability. Pearson correlation coefficients across coders averaged .88

for clinician categories (range .62-.99) and .90 for patient categories (range .56 -.99), similar to reported reliability for other RIAS studies [35].

Analysis focuses on structural indicators of visit communication, which include visit duration (minutes), total number of patient and clinician statements, and verbal dominance constructed as the ratio of total patient to clinician statements. Specific communication elements such as question asking (re: medical symptoms, therapeutic regimen, and psychosocial/lifestyle topics), patient education (re: medical symptoms, therapeutic regimen), partnership and activation statements, and a variety of socioemotional codes reflecting concern, emotional responsiveness, positive exchange, and agreements are also included. A summary score of patient-centered communication was calculated to reflect patient engagement in information seeking and disclosure as related to psychosocial and lifestyle issues relative to biomedical focused communication, reflecting disease management [7, 36]. RIAS and WAI-O bond scale coding were conducted independently by a different set of trained coders.

2.3. Statistical analyses

Bivariate analysis of patient and clinician characteristics by ethnic/racial group dyads is presented using Chi-square or ANOVA as appropriate (Table 1). Differences across concordant and discordant patient-clinician dyads in visit characteristics, patient-centeredness, and working alliance were examined in regression models that adjusted for non-communication covariates (patient gender, diagnoses and functional limitations, clinician discipline) identified through bivariate analysis. Generalized linear models of regression analysis with generalized estimating equations (GEE) was used to assess the effect of ethnic/race group dyads on the outcomes while adjusting for patient and provider characteristics and accounting for the nesting of patients within providers in all statistical tests in Tables 2-5. Using these models, we generated predicted probabilities of these visit characteristics for each dyad group, using the distribution of covariates from the concordant white-white dyad. This approach allows us to identify what differences remain in visit characteristics across dyad groups given identical patient gender, diagnoses, functional limitations and clinician discipline.

Using this same approach, we then investigate dyadic differences in clinician (Table 3) and patient (Table 4) communication patterns and global affect ratings. Table 5 explores dyadic group differences in patient-centeredness and working alliance to examine group differences in continuance in care rates. Using separate generalized linear models, we calculated predicted probabilities of therapeutic process and continuance in care for each dyadic group, adjusting for non-communication covariates, and then by non-communication *and* communication covariates. This approach allows us to calculate predicted probabilities of continuance in care for both Latino concordant dyads and for mixed dyads given the same measured characteristics as the white concordant dyads on non-communication covariates (model 1), and on non-communication and communication covariates (model 2). We use the bootstrap method to obtain 95% predictive intervals and compare the predicted probabilities between dyadic groups concordance on race/ethnicity.

Finally, post-hoc analysis of communication style differences in Spanish language sessions conducted in English by non-Latino white clinicians with Latino patients was done to examine the role of language concordance. STATA version 10 software was used for the analysis [37].

3. RESULTS

Patients were on average 38 years of age, mainly covered by Medicaid, largely unmarried and unemployed and reporting an annual income of less than \$15,000 (Table 1). Also represented in Table 1 are differences between dyadic groups in gender, employment status, and functional limitation days. Latinos are overrepresented in the female category, and present with more functional limitations than the other groups. Almost all patients and clinicians in Latino dyads identified themselves as foreign born in contrast to a handful of patients and clinicians in non-Latino white dyads. Latino clinicians were disproportionately over-represented among psychologists and under-represented among social workers while non-Latino white clinicians were over-represented among social workers but under-represented among psychiatrists.

Intake sessions averaged 50 minutes (Table 2) and did not differ significantly across ethnic/racial dyads after adjusting for differences in the distributions of patient gender, days of functional limitation, diagnosis, clinician discipline and for the nesting of patients within clinicians. While the number of clinician statements did not differ significantly across dyadic group, the number of patient statements did ($p < .05$). Latino dyad patients made approximately 1.4 more statements to each clinician statement compared to ratios of 1.2 and 1.1 for patients in white or mixed ethnicity dyads, respectively.

Differences in clinician communication patterns and global affect across ethnic/race dyads were explored in detail after adjusting for the covariates noted above (Table 3). Clinicians in Latino dyads asked more medically-focused questions about the patient's condition but fewer about therapeutic regimen than clinicians in the other dyads. They also conveyed less patient education about therapeutic regimen than other clinicians. Latino clinicians in Latino dyads showed differences in the socio-emotional realm including greater engagement in partnership and activation attempts, fewer positive exchanges such as approvals or laughter, and fewer agreement statements than clinicians in other dyads. They are also rated significantly lower on positive affect than those in the other dyads.

Differences in patient communication and global affect (Table 4) mirror clinician patterns both in instrumental and socio-emotional domains, after adjusting for covariates. Latino patients asked significantly fewer questions about therapeutic regimen but tended to ask more questions about medical and psychosocial issues, expressed more concern and made fewer statements of optimism than patients in other dyads. Similarly, Latino patients are also rated lower in positive affect and higher on distress than patients in other dyads.

Table 5 provides summary measures of therapeutic process with adjustments for the covariates noted above. Latino intake sessions were significantly more patient-centered and scored higher on the working alliance bond scale than either white or mixed dyad sessions. Of note are similar scores in the white and mixed ethnicity dyads on patient-centeredness and working alliance. However, rates of continuance in care differ across dyadic groups with Latino dyad patients showing marginally higher appointment keeping rates (89%) than patients in mixed ethnicity dyads (62%), adjusting for non-communication based group differences. White concordant dyads patients had an intermediate rate of continuance in care (74%) that was not significantly different from patients in either the Latino or mixed ethnicity dyads. After adjusting for communication covariates, session characteristics and non-communication covariates in the second continuance in care model, the dyads were marginally different from one another, but the direction was reversed. Patients in the non-Latino white dyads had higher rates of continuance in care (74%) than either Latino (47%) or mixed dyad patients (55%).

Table 6 describes six intake sessions conducted in Spanish by four non-Latino white clinicians with their Latino patients. We explored communication style differences in these Spanish language sessions to examine whether language concordance *alone* could explain the communication style differences noted in the Latino dyads compared to the non-Latino white or mixed dyads. However, Latino concordant sessions were marginally longer, with significantly greater patient input into session dialogue, and scored higher on working alliance than the six sessions conducted by non-Latino white clinicians in Spanish with Latino patients.

4. Discussion and conclusion

4.1. Discussion

Our findings suggest that ethnic concordance matters for continuance in care. The Latino dyad sessions differed from those of other dyads in communication characteristics, affective tone, patient-centeredness and working alliance. Further, these differences appear related to patient continuance in care. Latino dyad sessions were characterized by a more socioemotional focus than the other dyad sessions. Less of the communication was focused on questions about therapeutic regimen or patient education. There were, however, more questions asked about the patient's general condition. Our findings confirm previous research suggesting considerable variation in clinician-patient communication across patient ethnicity [38].

In the socio-emotional realm, a distinct affective profile distinguished Latino dyads from the others. Clinicians in Latino dyads actively engaged patients and asked more frequently about shared understanding. They also made fewer statements of agreement with their patients and were less positive and lighthearted, with less joking and fewer compliments - possibly in response to Latino patient's greater distress. Rather, they tended to express more concern than clinicians in other dyads. The patient's in Latino dyads paralleled that of their clinicians; they expressed more concern and less optimism and they were similarly less positive in their exchanges with their providers. Interestingly, however, Latino dyad patients were more verbally dominant and made fewer attempts to clarify understanding between themselves and the clinician, perhaps because their clinicians were so active in checking on mutual understanding. The affective demeanor of Latino dyad patients and providers was rated by coders as less positive, but not anymore negative in demeanor than other dyads. Where there are no comparable studies with which to further examine our results, they may help to explain The Commonwealth Fund's *Health Care Quality Survey* findings of pervasive reporting of communication difficulties with clinicians among racial and ethnic minority patients [6]. Perhaps there is an absence of effective socio-emotional exchange between these patients and their clinicians? The style of communication is different than what the patient expected, resulting in dissatisfaction with the encounter. Evidence of significant difference in communication patterns and relational style between clinicians and patients has been noted in several other studies using rigorous methods [39]. Critics of the matching hypothesis argue that evidence points to little difference in therapeutic outcomes. However, persistent disparities in access to and utilization of mental health services for racial/ethnic minorities compared to non-white Latinos suggests that racial/ethnic matching may prove critical for continuance in care. We concur with Karlsson [9] that ethnic matching is not necessary for all racial/ethnic minority patients; however, it's probable that it does matter for certain individuals, particularly where the patterns of communication may differ in affect, lowering the potential for strong therapeutic alliance. The challenge is to identify what works and for whom.

We also examined two measures of the therapeutic process: patient-centeredness (derived from audio recordings by RIAS coders) and working alliance bond (judged from videotape

by a different set of trained raters). The two measures were positively, but weakly correlated ($r=.26$; $p<.001$), suggesting only a modest degree of shared variance. Somewhat similar relationships were reported in a study considering the relationship between patient centered communication and therapeutic alliance using an adaptation of the Vanderbilt Therapeutic Alliance Scale (VTAS) [40]. Latino dyad sessions were significantly higher on both measures than were the sessions of white concordant or ethnically mixed dyads. Yet in evaluating what seemed to be linked to continuance in care, therapeutic alliance was an independent contributing factor but patient centeredness was not.

Finally, we found that continuance in care was marginally higher for Latino dyad patients than for patients in other dyads. The relationship between the communication, therapeutic process measures and continuance in care is especially intriguing. Latino patients had higher continuance rates in models only adjusted for non-communication variables. However, when communication, global affect and therapeutic process variables were statistically adjusted for, the differences between dyadic groups were reversed with white dyad patients having higher continuance in care rates than others, as typically found in general clinic samples. In the fully adjusted model, Latino patients' continuance in care rates are the same as mixed ethnicity dyad patients in simple models. However, the Latino dyad sessions were conducted in ethnic-specific clinics, which may account for the high continuance in care in this sample. Ethnic-specific services have been found to improve both the use of services and retention in care among racial/ethnic minorities, though elements resulting in these outcomes are not well understood [41, 42]. The possibility that ethnicity and treatment preferences may be confounded must be acknowledged [43]. In-depth exploration of the role of sociocultural factors including nativity, length of residence in the US and culturally-mediated ways of defining mental illness and treatment are beyond this investigation, but merit attention in future research as they may be related to ethnicity and treatment preferences.

A reasonable explanation for positive findings associated with Latino dyad sessions is the power of language concordance for non-English speaking patients rather than ethnic concordance. Although our ability to investigate this question is limited by very small numbers, communication observed for the six Spanish speaking mixed ethnicity dyads differed from the Latino dyads on key markers including verbal dominance, patient-centeredness and working alliance. Language concordance alone cannot explain our findings; significant differences persist between concordant and non-concordant ethnic dyads regardless of language concordance. As hypothesized, racial/ethnic concordance appears to have a stronger positive impact on continuance in care for Latino, compared to non-Latino white patients.

A number of study limitations merit note. First is the possibility of observation bias as the presence of video recorders may affect how clinicians and patients communicate. Several studies addressing the same issue have concluded that recording encounters is unlikely to systematically alter communication [32-33]. Even if clinician behavior were affected, it would likely reflect their best *effort*. We do not know whether the best effort varies by the ethnic and racial composition of the dyad. We posit that detected differences in provider communication resulting from the race/ ethnicity of the patient would be more likely to result from implicit attitudes or other nonverbal behaviors not detected by our coding [36], rather than observation bias.

We could not explore the communication style of Latino clinicians with non-Latino patients and were unable to investigate the impact of ethnic concordance for African American patients and clinicians. An additional limitation is that our Latino sample was too varied in subethnicity to systematically match within the Latino dyad group. We argue that this fact strengthens rather than diminishes confidence in the robustness of our findings.

Randomization to dyads would have allowed for more comparison across clinician and patient characteristics and allowed us to determine if the positive effects noted in the Latino dyads are best attributed to ethnicity or to immigrant status as both are confounded for Latino clinicians and patients.

4.2. Conclusion

Our results need to be replicated with larger samples of patients and clinicians and in more generalized mental health and primary care contexts. There are a great number of questions that arise from the study that deserve further attention but the kinds of communication dynamics described in this study may help inform our understanding of widely documented ethnic/racial disparities in mental health services observed for Latino patients. Whatever the language in which a therapeutic relationship is established, other factors, including therapeutic alliance and global affect, matter for continuance in care.

4.3. Practice Implications

Encouraging clinicians to practice strategies and behaviors that promote therapeutic alliance is recommended. Communication skills that facilitate patient engagement may improve care, particularly for racial and ethnic minority patients.

“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. “

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Table 1

Descriptive Statistics of Patient and Clinician Characteristics Across Patient/Clinician Dyad Types (N=93)

	Total Sample N=93		White Dyads N=34		Latino Dyads N=24		Mixed Dyads N=35	
PATIENT CHARACTERISTICS								
Gender **								
Male	44.1%	41	55.9%	19	16.7%	4	51.4%	18
Female	55.9%	52	44.1%	15	83.3%	20	48.6%	17
Average Age (range)	38 (18-78)		36.3 (21-68)		42.9 (18-78)		37.1(20-63)	
Born in US ***								
Yes	66.7%	62	100%	34	4.2%	1	77.1%	27
No	33.3%	31	0	0	95.8%	23	22.9%	8
Marital Status								
Married	16.1%	15	11.8%	4	25.0%	6	14.3%	5
Unmarried	83.9%	78	88.2%	30	75.0%	18	85.7%	30
Emolvement Status *								
Emoloved	40.9%	38	29.4%	10	50.0%	12	45.7%	16
Unemoloved	29.0%	27	32.4%	11	8.3%	2	40.0%	14
Disabled	30.1%	28	38.2%	13	41.7%	10	14.3%	5
Insurance Status								
No Insurance	4.3%	4	5.9%	2	8.3%	2	0.0%	0
Private	12.9%	12	8.8%	3	25.0%	6	8.6%	3
Medicare	16.1%	15	17.6%	6	16.7%	4	14.3%	5
Medicaid	48.4%	45	47.1%	16	37.5%	9	57.1%	20
Other	18.3%	17	20.6%	17	12.5%	3	20.0%	7
Education								
<HS	35.5%	33	26.5%	9	54.2%	13	31.4%	11
HS/GED	28.0%	26	29.4%	10	12.5%	3	37.1%	13
Post-Secondary	25.8%	24	35.3%	12	20.8%	5	20.0%	7
College >	10.8%	10	8.8%	3	12.5%	3	11.4%	4
Income								
< 15k	67.7%	63	67.6%	23	83.3%	20	57.1%	20
15k-35k	17.2%	16	17.6%	6	12.5%	3	20.0%	7
35k-75k	11.8%	11	11.8%	4	4.2%	1	17.1%	6
>75k	1.1%	1	2.9%	1	0	0	0	0
Not Reported	2.2%	2	0	0	0	0	5.7%	2
Intake Language ***								

	Total Sample N=93		White Dyads N=34		Latino Dyads N=24		Mixed Dyads N=35	
English	74.2%	69	100%	34	0	0	100%	35
Spanish	25.8%	24	0	0	100%	24	0	0
Continuation Intention								
Yes	97.8%	91	94.1%	32	100%	24	100%	35
No	2.2%	2	5.9%	2	0	0	0	0
Days of functional limitation (SD) *	12.1		11(11)		17.3(11.3)		10(9.6)	
Psychiatric Disorders								
Any Depressive Disorder	71.0%	66	64.7%	22	87.5%	21	65.7%	23
Any Anxiety Disorder	68.8%	64	64.7%	22	75.0%	18	68.6%	24
Any Substance Abuse/Dependence **	33.3%	31	52.9%	18	8.3%	2	31.4%	11
Bipolar/Psychotic Disorder	11.8%	11	17.6%	6	8.3%	2	8.6%	3
PROVIDER CHARACTERISTICS								
	38 clinicians-93 patients		18 clinicians-34 patients		10 clinicians-24 patients		19 clinicians-35 patients	
Gender								
Male	39.8%	37	41.2%	14	29.2%	7	45.7%	16
Female	60.2%	56	58.8%	20	70.8%	17	54.3%	19
Average Age (range)								
	40.1(25-69)		43.9(25-69)		39.3(27-49)		37.2(25-69)	
Born in US ***								
Yes	67.7%	63	91.2%	31	4.2%	1	88.6%	31
No	32.3%	30	8.8%	3	95.8%	23	11.4%	4
Discipline *								
Psychiatrist	32.3%	30	20.6%	7	45.8%	11	34.3%	12
Psychologist	14.0%	13	5.9%	2	29.2%	7	11.4%	4
Social worker	47.3%	44	61.8%	21	25.0%	6	48.6%	17
Nurse	6.5%	6	11.8%	4	0	0	5.7%	2

*
p<.05;**
p<.01;***
p<.001.

Table 2

Predicted Values of Intake Session Characteristics Across Patient/Clinician Ethnic Dyads (adjusting for non-communication covariates*)

	Total n=93		White Dyads n=34		Latino Dyads n=24		Mixed Dyads n=35		Omni bus ₁	LLvsW W ₂	MIXvs WW ₃	LLvs MIX ₄
	predicted value	se	95% CL	predicted value	se	95% CL	predicted value	se				
Session Length (in minutes)	50.4	1.1	50.1	48.4	2.0	47.7	48.5	54.4	3.2	53.5	54.8	49.8
Patient Talk (# of statements)	674.4	23.6	667.0	604.3	31.3	588.7	601.7	886.5	60.8	858.3	883.4	608.9
Clinician Talk (# of statements)	570.7	17.1	566.7	560.1	24.8	549.9	560.1	657.3	52.9	645.5	667.3	555.7
Ratio of Patient/Clinician Talk	1.3	0.0	1.2	1.2	0.0	1.1	1.1	1.4	0.2	1.4	1.5	1.1

† p<0.1;

* p<0.05;

** p<0.01;

p<0.001; adjusting for patient gender, days of functional limitations, diagnosis, clinician discipline (adjusting for nesting of patients within clinicians)

1. Omnibus test evaluating differences across group dyads

2. Significant difference between Latino/Latino dyad vs. White/White dyad

3. Significant difference between Mixed dyad vs. White/White dyad

4. Significant difference between Latino/Latino dyad vs. Mixed dyad

Table 3
 Predicted Values of Clinician Communication Patterns and Global Affect Across Patient/Clinician Ethnic Dyads (adjusting for non-communication covariates)

	Total n=93		White Dyads n=34		Latino Dyads n=24		Mixed Dyads n=35		Omni- bus ₃	LLvs WW ₄	MIXvs WW ₅	LLvsM IX ₆						
	predicted values	se	95% CL	predicted values	se	95% CL	predicted values	se					95% CL					
Communication Pattern₁																		
Medical Questions	12.81	1.02	12.60	13.01	11.82	1.67	10.84	11.51	17.72	2.72	17.29	18.38	11.52	1.83	11.36	12.09	+	*
Therapeutic Regimen	11.85	0.72	11.74	12.03	12.85	1.25	12.61	13.11	7.48	2.14	7.08	7.93	12.00	1.49	11.44	12.03	*	**
Psychosocial/Lifestyle Questions	99.25	4.14	97.48	99.22	94.63	7.73	91.45	94.68	114.49	9.85	111.10	115.23	98.82	9.01	95.41	99.18		
Patient education about medical condition	15.24	1.72	14.75	15.44	13.70	2.93	13.02	14.20	10.91	4.77	10.45	12.38	14.06	2.83	13.70	14.85		
Patient Education about Therapeutic Regimen	38.92	2.74	38.34	39.46	41.10	4.81	40.85	42.81	15.55	5.42	15.32	17.52	46.35	4.78	45.31	47.25	**	***
Psychosocial/Lifestyle Education&Counseling	24.88	2.36	24.55	25.53	26.48	3.54	25.49	26.94	23.15	8.2	21.52	24.89	20.70	4.02	20.70	22.35		
Partnership & Activation Statements	185.29	10	182.91	187.16	150.85	15.3	146.58	153.07	218.57	21.1	212.74	221.66	168.62	17.2	165.08	172.36	**	***
Concern Statements	14.70	1.13	14.34	14.81	11.28	1.72	10.51	11.23	17.22	3.07	16.87	18.17	11.13	1.9	11.03	11.83		
Optimism Statements	14.38	0.93	14.03	14.41	14.65	1.57	13.88	14.52	10.74	3.29	10.13	11.48	14.15	1.79	14.06	14.79		
Emotionally Responsive Statements	9.19	0.74	9.01	9.32	7.65	1.04	7.68	8.11	10.16	2.87	9.88	11.07	7.54	1.72	7.21	7.93	**	***
Agreement Statements	75.54				93.19				42.70				75.98				**	***
Positive Statements	17.81	1.33	17.40	17.94	18.53	2.35	18.02	18.96	7.81	2.99	7.07	8.28	16.81	2.4	16.68	17.64	*	*
Global Affect₂																		
Positive Affect	3.98	0.08	3.96	3.99	4.20	0.11	4.18	4.22	3.38	0.20	3.33	3.41	4.09	0.15	4.07	4.13	**	*
Negative Affect	1.55	0.04	1.54	1.56	1.59	0.08	1.58	1.62	1.41	0.09	1.39	1.42	1.54	0.12	1.52	1.57		

⁺ p<0.1;

* p<0.05;

** p<0.01;

*** p<0.001

1. Adjusting for clinician talk, visit length, patient gender, days of functional limitations, diagnosis, clinician discipline and adjusting for nesting of patients within clinicians
2. Adjusting for patient gender, days of functional limitations, diagnosis, clinician discipline and adjusting for nesting of patients within clinicians
3. Omnibus test evaluating differences across dyad groups
4. Significant difference between Latino/Latino dyads vs. White/White dyads

5. Significant difference between Mixed dyads vs. White/White dyads

6. Significant differences between Latino/Latino dyads vs. mixed dyads

Table 4
 Predicted Values of Patient Communication Patterns and Global Affect Across Patient/Clinician Ethnic Dyads (adjusting for non-communication covariates)

	Total n=34			White Dyads n=34			Latino Dyads n=24			Mixed Dyads n=35			Omni- bus ₃		LLvs W ₄		MIXvs WW ₅		LLvs MIX ₆		
	predicted values	se	95% CL	predicted values	se	95% CL	predicted values	se	95% CL	predicted values	se	95% CL	predicted values	se	95% CL	predicted values	se	95% CL	predicted values	se	95% CL
Communication Pattern₁																					
Medical Questions	2.28	0.215	2.26	2.34	2.90	0.464	3.01	3.19	1.37	0.564	1.11	1.33	2.43	0.416	2.20	2.36	+	*			
Psychosocial Questions	158.92	11.24	155.68	160.16	115.45	12.66	112.35	117.40	187.64	20.34	186.30	194.41	128.13	13.55	125.85	131.26	***	***	***	***	***
Medical Information	67.90	3.693	65.42	66.93	73.11	6.154	67.58	70.09	52.13	10.25	50.43	54.61	63.70	7.873	62.25	65.46	**	**	**	**	+
Psychosocial/Lifestyle Information	387.55	18.19	382.68	390.13	338.32	24.38	333.57	343.56	371.16	32.31	367.35	380.59	352.93	24.76	346.48	356.62	*	*	*	*	**
Partnership & Activation Statements	13.76	1.079	13.18	13.61	13.72	2.183	13.13	14.01	4.04	4.107	2.71	4.36	16.93	2.799	16.06	17.19	*	*	*	*	**
Concern Statements	49.15	5.622	50.21	52.53	36.03	3.831	34.90	36.48	59.12	17.34	59.61	66.75	32.63	5.912	31.84	34.27	**	**	**	**	**
Optimism Statements	15.24	1.302	14.82	15.34	14.54	1.612	14.51	15.16	8.41	4.333	7.53	9.27	13.94	2.08	13.53	14.37	*	*	*	*	*
Positive Statements	14.99	1.352	14.44	14.99	14.56	2.361	14.97	15.93	1.03	4.303	-2.09	-0.35	14.71	2.444	14.05	15.04	***	***	***	***	***
Agreement Statements	82.38	4.398	81.04	82.84	85.99	7.485	84.84	87.90	70.83	13.77	65.21	70.85	78.18	8.624	76.57	80.10					
Global Affect₂																					
Positive Affect	3.52	0.07	3.51	3.54	3.68	0.13	3.66	3.72	2.98	0.19	2.91	2.99	3.74	0.17	3.72	3.79	***	***	***	***	***
Distress	2.64	0.12	2.62	2.67	2.09	0.22	1.98	2.06	3.30	0.28	3.30	3.41	2.33	0.28	2.36	2.47					

† p<0.1;
 * p<0.05;
 ** p<0.01;
 *** p<0.001

1. Adjusting for patient talk, visit length, patient gender, days of functional limitations, diagnosis, clinician discipline and adjusting for nesting of patients within clinicians
2. Adjusting for patient gender, days of functional limitations, diagnosis, clinician discipline and adjusting for nesting of patients within clinicians
3. Omnibus test evaluating differences across dyad groups
4. Significant difference between Latino/Latino dyads vs. White/White dyads
5. Significant difference between Mixed dyads vs. White/White dyads
6. Significant difference between Latino/Latino dyads vs. Mixed dyads

Table 5 Predicted Probabilities of Therapeutic Process and Continuance in Care Across Patient/Clinician Ethnic Dyads adjusting for non-communication and communication covariates

	Total n=93		White Dyads n=34		Latino Dyads n=24		Mixed Dyads n=35		Omni- bus ₄	LLvs WW ₅	MIXvs WW ₆	LLvs MIX ₇				
	predicted values	se	95% CL	predicted values	se	95% CL	predicted values	se					95% CL			
Measure of Therapeutic Alliance ₁																
Patient-Centeredness	5.13	0.37	5.14	4.06	0.33	4.04	4.17	7.11	0.87	7.27	7.62	4.07	0.48	4.06	4.26	***
Working Alliance	69.79	0.85	69.58	67.44	1.37	67.33	67.89	73.76	2.38	73.50	74.46	67.18	1.75	66.61	67.32	*
Continuance in Care																
Retention ₂	0.66	0.05	0.65	0.74	0.11	0.70	0.74	0.89	0.12	0.84	0.89	0.62	0.12	0.62	0.67	
Retention ₃	0.64	0.05	0.64	0.74	0.11	0.71	0.75	0.47	0.20	0.45	0.54	0.55	0.13	0.57	0.62	+

+ p<0.1;

* p<0.05;

** p<0.01;

*** p<0.001

1. Adjusting for patient gender, days of functional limitations, diagnosis, clinician discipline (adjusting for nesting of patients within clinicians)
2. Adjusting for patient gender, visit length, days of functional limitations, diagnosis, clinician discipline (adjusting for nesting of patients within providers)
3. Adjusting for patient-centeredness, therapeutic alliance, positive and negative provider affect, positive and negative patient affect (global ratings of distress), visit length, all patient talk, ratio of doctor to patient talk, patient gender, days of functional limitations, diagnosis, clinician discipline (adjusting for nesting of patients within providers)
4. Omnibus test evaluating differences across dyad groups
5. Significant difference between Latino/Latino dyads vs. White/White dyads
6. Significant difference between Mixed dyads vs. White/White dyads
7. Significant difference between Latino/Latino dyads vs. Mixed dyads

Table 6
 Predicted Values Spanish-Language Intake Session Characteristics Across Patient/Clinician Ethnic Dyads

	Total n=30		White/Latino Dyads n=6		Latino Dyads n=24		WLvsLL ₁
	predicted values	se	predicted values	se	predicted values	se	
Session Length (in minutes)	53.38	2.05	45.23	2.46	46.24	2.53	+
Patient Talk (# of statements)	828.99	45.31	515.29	35.57	524.00	50.01	**
Clinician Talk (# of statements)	609.01	38.90	477.70	31.55	486.08	47.27	
Ratio of Patient/Clinician Talk	1.41	0.14	1.06	0.09	1.11	0.16	+
Patient-Centeredness	7.64	0.88	5.05	0.47	5.17	1.03	
Working Alliance	75.73	1.06	70.96	0.91	71.17	1.19	**

⁺ p<0.1;

* p<0.05;

** p<0.01;

p<0.001; adjusting for nesting of patients within clinicians

1. White/Latino dyads vs. Latino/Latino dyads