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African American Women and Prenatal Care: Perceptions of Patient-Provider Interaction

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Abstract

Poor patient-provider interaction among racial/ethnic minorities is associated with disparities in healthcare. In this descriptive, cross-sectional study, we examine African American women's perspectives and experiences of patient-provider interaction (communication and perceived discrimination) during their initial prenatal visit and their influences on perceptions of care received and prenatal health behaviors. Pregnant African American women ($n=204$) and their providers ($n=21$) completed a pre and post-visit questionnaire at the initial prenatal visit. Women were also interviewed face to face at the subsequent return visit. Women perceived high quality patient-provider communication and perceived low discrimination in their interaction with providers. Multiple regression analyses showed that patient-provider communication had a positive effect on trust in provider ($p < .001$) and on prenatal care satisfaction ($p < .001$) but not on adherence to selected prenatal health behaviors. Findings suggest that quality patient-provider communication improves the prenatal care experience for African American women.

Keywords

Patient-provider communication; prenatal care; African American; trust; satisfaction

Since the mid-80s, there has been a national public health effort to increase access and availability of prenatal care for low-income pregnant women (Institute of Medicine [IOM], 1988). Prenatal care is an opportunity for women to access the healthcare system and to receive preventive services, education, nutritional support, and other social services to improve pregnancy outcomes. A key to successful health care encounters is the quality of the patient-provider interaction (communication) because of the influence on subsequent patient health outcomes (Roter & Hall, 2006). However, for African American pregnant women, a perceived barrier to effective prenatal care is ineffective patient provider communication (Raine, Cartwright, Richens, Mahamed, & Smith, 2010). This is especially relevant since African American women are more likely to have negative past experiences with and mistrust in providers (Nicolaidis et al., 2010) including discrimination, in prenatal care (De Marco, Thorburn, & Zhao, 2008; Novick, 2009; Salm Ward, Mazul, Ngui, Bridgewater, & Harley, 2012). The purpose of this study was to quantitatively examine pregnant African American women's perceptions of patient-provider interaction (patient-provider communication and perceived provider discrimination) and its influences on women's perceptions of prenatal care and adherence to selected prenatal health behaviors.

Patient-Provider Communication during Prenatal Care

Existing studies examining African American women's communication with their providers in prenatal care have been conducted using retrospective telephone interviews (Handler, Rosenberg, Raube, & Kelley, 1998; Korenbrot, Wong, & Stewart, 2005) with qualitative methodology (Lori, Yi, & Martyn, 2011; Raine et al., 2010; Wheatley, Kelley, Peacock, & Delgado, 2008). Most have lacked a theoretical framework (Handler et al., 1998.; Korenbrot et al., 2005). One quantitative study described the content and process of communication during prenatal care; but, it was with women of advanced maternal age (>33 year old) and over 75% of the population was white (Roter, Geller, Bernhardt, Larson, & Doksum, 1999).

The majority of recent studies in patient-provider communication in prenatal care have been qualitative. In a study by Lori et al. (2011), patient-provider interaction qualities considered important for African American pregnant women were active listening skills, asking psychosocial questions, and clearly explaining diagnoses. Furthermore, the women wanted providers to treat them with respect, to deliver compassionate care, and provide continuity of care. Similarly, pregnant African American women emphasized the provider's ability to deliver health information in a clear manner, trust in the provider, continuity of care, and close patient-provider relationship as critical elements to effective patient-provider communication (Bennet, Switzer, Aguirre, Evans, & Barg, 2006). Trust in the provider has also been positively associated with effective patient-provider communication among pregnant African American women (Sheppard, Zambrana, & O'Malley, 2004). On the contrary, examples of poor communication in prenatal care include a lack of providing sufficient health information, communicating information unclearly, being insensitive to needs of pregnant women, and displaying a communication style that is discourteous and abrupt (Raine et al., 2010).

For African American women, prenatal care characteristics predictive of satisfaction were provider communication, length of time spent with the client (>15 minutes), receiving care at an urban clinic, and having spent shorter time in the waiting room (<30 minutes; Handler, Rosenberg, Raube, & Lyons, 2003). In addition, dimensions of prenatal interpersonal processes of care that were associated with greater satisfaction among pregnant African American women were communication and provider interpersonal style (Korenbrot et al., 2005).

Theoretical Framework

The framework for this study was a modification of the Interaction Model of Client Health Behavior (IMCHB). The IMCHB is a patient-centered model that explains the relationship between the unique characteristics of an individual (patient singularity), patient-provider interaction (interpersonal processes between patient and provider during a clinical encounter), and resulting patient outcomes (Cox, 1982). Perceived provider discrimination was added to the model. Intermediate outcomes, including trust in provider, prenatal care satisfaction, return visit, and adherence to prenatal health behaviors were added to the model to reflect more precise relationships among health outcomes. For this study, the concepts

patient-provider interaction (patient-provider communication and perceived discrimination), and selected healthcare and behavioral outcomes were examined (See Figure 1).

Method

Sample

Convenience sampling was used to recruit pregnant African-American women (N=204) and providers (N=21) from a prenatal clinic that was part of an urban health system in southeastern Michigan. Women were eligible if they were between 18–45 years of age, identified themselves as African American, were attending their first prenatal visit for the current pregnancy, spoke, read, and wrote English. Providers were eligible if they were currently an obstetrics provider at the prenatal clinic and held an advanced graduate degree.

Measures

All survey questions were based on a 5-point Likert scale with responses ranging from “strongly disagree” to “strongly agree.”

Patient Perceptions of the Patient-Provider Interaction—Patients’ perceptions of the patient-provider interaction were assessed using the Matched-Pair Communication Instrument (MCI) developed by Campbell, Lockyer, Laidlaw, and Macleod (2007), questions adapted from the Everyday Discrimination questionnaire (Williams, Yan, Jackson, & Anderson, 1997; Bird & Bogart, 2001), and selected questions from the 2001 Commonwealth Fund Survey (Collins et al., 2002). Questions that assessed for patient-provider interaction from the MCI were initially divided conceptually according to patient-provider interaction variables of the IMCHB that included: affective support (7 items), health information (7 items), and decisional-control (4 items). One question from the MCI that asked about patient’s overall satisfaction of the visit was used to assess for the outcome variable of prenatal care satisfaction.

Perceived provider discrimination was assessed with seven total items. Five of the seven items with dichotomous responses (yes/no) were adapted from Williams’ Everyday Discrimination questionnaire (“did you feel you were treated with less courtesy than other people,” “...received poorer service than others,” “...feel if your doctor acted as if he/she thinks you are not smart,” “...feel if your doctor acted as if he or she is better than you,” “...feel if the doctor was not listening to what you were saying.”). If women answered yes to any of the 5 items, an additional question, “What do you think was the MAIN reason for this/these experiences? Would you say...? Your ancestry/national origin, gender, race, age, height/weight, shade of skin color, insurance, education, marital status, number of children you have, other,” was asked (Williams et al., 1997; Bird & Bogart, 2001). Two items were adapted from two questions retrieved from the 2001 Commonwealth Fund Survey (“The doctor treated me with respect and dignity,” and, “The doctor treated me fairly”) and changed to a five point Likert scale responses (Collins et al., 2002). These items were recoded as dichotomous scores (yes/no) and combined with the Williams Everyday Discrimination questions to form a total perceived provider discrimination score. The provider discrimination variable was collapsed with “2” indicating some form of provider

discrimination and “1” for no provider discrimination. Any score greater than seven indicated some form of perceived provider discrimination with a possible range of 7–14.

Patient’s Trust in Provider—The Trust in Physician Scale (TPS) was used to measure patients’ perceptions of trust in the provider (Anderson & Dedrick, 1990). The TPS is composed of 11 questions based on a 5 point Likert scale (strongly disagree to strongly agree). Higher scores indicated greater trust.

Patient Prenatal Care Satisfaction—This 4-item scale about satisfaction with prenatal care was adapted from the Prenatal Care Satisfaction Questionnaire, “I would NOT recommend my prenatal doctor to a friend,” (Handler et al., 1998), the MCI, “Overall, I was satisfied with this prenatal visit today,” (Campbell et al., 2007), and two questions that were developed for the study inquiring about patient-provider communication (“The doctor talked to me about things that were important to me.” “Overall, I am satisfied with our communication during the visit”). A composite score based on responses from a 5 point Likert scale (strongly disagree to strongly agree) represented Patient Satisfaction with Prenatal Care with higher scores indicating greater prenatal care satisfaction.

Adherence to Selected Prenatal Health Behaviors—Women’s perceptions of provider recommendations and adherence to providers’ treatment recommendations from the initial prenatal visit were assessed by the following question, “*What did your provider recommend for you to do to better take care of yourself and the baby from your first prenatal visit?*” The women had ten items that were most likely to be recommended in prenatal care: 1) Labs/tests: prenatal labs, ultrasounds, other, 2) Risky Behaviors: stop smoking, stop drinking alcohol, stop using drugs, 3) Take prenatal vitamins or other supplements, 4) Talk to the social worker, 5) Return for next prenatal visit, 6) Sexual Health: use condoms, avoid sex, other, 7) Diet: eat healthy foods, what kind?, amount?, 8) Exercise: what kind?, how often? 9) No recommendation, 10) Other.

At the subsequent return visit, women were asked to recall their provider’s recommendations from the initial prenatal visit. If women were unable to recall provider’s recommendations, the interviewer prompted the woman with series of questions to ascertain if she adhered to the provider recommendations from the responses collected at the initial prenatal visit.

Procedure

The study was approved by the Institutional Review Board at University of Michigan and the health system associated with the prenatal clinic. Written informed consent was obtained from all participants (providers and patients) prior to administering questionnaires. All measures were pre-tested with a sample of ten African American pregnant women and two providers to assess for clarity, content, completeness, and clinic feasibility. Minor adaptations were made based on feedback.

Data collection occurred in two phases: (1) women and providers completed questionnaires regarding the patient-provider interaction immediately after the initial prenatal visit in private, separate rooms and (2) women’s adherence to treatment recommendations (health

behaviors) was assessed through a face to face interview at the subsequent prenatal visit. Prior to taking the questionnaire, the data collector emphasized the importance of honest responses, that there were no right or wrong answers, and that confidentiality would be maintained. In addition, if the women had questions or needed assistance in completing the questionnaire, assistance was made immediately available. However, none required any assistance in completing the questionnaire. If the women did not return for their prenatal visit, one follow-up telephone call was made. Women received \$20 if they completed the post-visit questionnaires and received \$5 after the brief interview at the subsequent visit. Providers were not given any incentives for participating in the study. The PI conducted all patient and provider questionnaires.

Data Analysis

Multiple linear regression was performed to examine the outcome variables of trust in provider and prenatal care satisfaction with variables of patient-provider interaction (patient-provider communication and perceived provider discrimination) as predictors. Logistic regression analysis was performed to predict women's self-reported adherence to provider recommendations of obtaining prenatal labs, getting ultrasounds, taking prenatal vitamins, and return visit. If women did not keep their second appointment, it was recorded as a missed appointment. Only data from women who kept a subsequent prenatal visit were entered into the analyses ($N=153$) for prenatal labs, ultrasounds, and prenatal vitamins. For the analysis of return visits, the entire sample ($N=204$) was used. As patients were nested within providers, the random variations between and within providers were examined using intra-class correlation. Results indicated that the random variations between providers had a small effect size and were not significant. The results confirm there was minimal to no provider effect. Hence, a hierarchical linear model was not used.

Results

Descriptive Analyses of Measures

Sample characteristics for women and providers are presented in Tables 1 and 2 respectively. The women's ages in the sample ranged from 18 to 41 years ($M=24.4$, $SD=4.90$ years), and weeks of gestation ranged from 4 to 38 weeks ($M=14.9$, $SD=7.95$ weeks). Most women were single (79.4%), living with family (59.3%), and on Medicaid (86.8%). Over half of the women ($n=99$, 53.2%) came to their initial prenatal visit during the first trimester of their pregnancy (4–12 weeks). Approximately 42% of the women ($n=85$) had two or more living children and 82% ($n=168$) of the women reported their health status as being good or better. The majority of the providers were female ($n=17$; 81%) with a mean of 3.3 years in OB/GYN practice ($SD=5.62$). The number of new obstetric patients seen by each provider every week during a one day four hour clinic session was one or two patients. The number of initial prenatal care patients seen by each provider throughout the six month data collection period ranged from 1 to 14, ($M=9$, $SD=5.67$ patients).

The sample size for this study was based on a power analysis for multiple regression conducted with PASW software version 18. The power analysis indicated that 162 subjects were needed to provide 80% power to detect an R^2 of .10 in predicting outcomes from as

many as 11 predictor variables with an alpha of .05 two tailed. To be prepared for up to 20% attrition 204 women were recruited.

A list of measures used in this study, the descriptives and reliability scores (α), are listed in Table 3. For the dependent variables of trust in provider and prenatal care satisfaction, the total observed score for the measure of trust in provider ranged from 18–55 ($M = 48.00$, $SD = 6.30$), indicating high values of trust in provider in this study. Women were also highly satisfied with their prenatal care, which ranged from 6–20 out of possible score range of 4–20 ($M = 18.29$, $SD = 2.36$).

Initial correlation analysis showed high correlations for independent variables of patient-provider interaction: affective support, health information, and decisional-control ($r = .80$ to $.86$). As a result, the patient-provider interaction variables of affective support, health information, and decisional-control were combined to create a total patient-provider communication (PPC) score with higher scores indicating greater quality of patient-provider communication. The mean score of the PPC was 81.68 ($SD = 10.43$, with a possible range of 18–90) indicating high levels of quality patient-provider communication. The observed range for the perceived provider discrimination scale was 7–14 with a mean of 7.12 ($SD = 0.64$), showing little perceived provider discrimination. Cronbach's alpha of all measures ranged from .83–.95.

Women's Adherence to Prenatal Health Behavior

Out of 204 women completing the initial survey, 153 women returned for their subsequent prenatal visit. The descriptive summary of women's adherence to provider recommendations is found in Table 4. The most frequent initial prenatal care visit provider recommendations the women recalled at their subsequent visit were obtaining prenatal labs ($n = 122$), eating healthy foods ($n = 99$), getting an ultrasound ($n = 96$), and taking prenatal vitamins ($n = 83$). Out of these provider recommendations cited, women reported high adherence rates from 85–100% in all health behavior categories except for seeing a social worker (54%) (see Table 4).

Predictors of Trust in Provider and Prenatal Satisfaction among measures of Patient-Provider Interaction

Results of the analysis are presented in Table 5. The full model for trust in provider and prenatal care satisfaction included two predictors: patient-provider communication (PPC) and provider discrimination. This model explained 56% of the variance in trust in provider ($F(2,181) = 119.02$, $p < .001$) and 71% of the variance in prenatal care satisfaction ($F(2,181) = 217.16$, $p < .001$). The PPC variable had a significant effect on trust in provider, ($\beta = 0.75$, $p < .001$) and on prenatal care satisfaction ($\beta = 0.81$, $p < .001$). The size and direction of the relationship suggests women who had higher PPC scores reported greater trust in provider and prenatal care satisfaction.

Relationship between Patient-Provider Interaction and Adherence to Provider Recommendations

The overall model for each logistic regression conducted on each of the provider recommendations (obtaining prenatal labs, getting ultrasounds, taking prenatal vitamins, and return visit) was non-significant (see Table 6). Furthermore, PPC and perceived provider discrimination variables were not significant predictors of adherence to any of the provider recommendations.

Discussion

Results from our study indicate patient-provider communication significantly predicted prenatal care satisfaction, an indicator of quality care and trust in provider, and a key component in building a long-lasting provider-patient relationship.

Findings are consistent with other studies examining African American pregnant women's satisfaction with prenatal care. Korenbrot et al. (2005), reported 48% of variance in satisfaction was explained by provider communication (i.e. empowerment, elicitation of patient's problems, and explanation of processes of care) and interpersonal style (i.e. friendliness and courteousness, lack of perceived discrimination, and respectfulness/emotional support). In a review of patient satisfaction in obstetrics and gynecology, Yeh and Nagel (2010) report patient satisfaction continues to be associated with knowing which style of communication to use when talking with patients (patient-centered vs. biomedical) and addressing patients' expectations and needs during the initial history and physical exam.

Quality patient-provider communication was also significantly predictive of greater trust in provider, explaining 56% of variance in trust in provider. Results are similar to other studies of predominantly female adult participants in non-prenatal care settings that report quality patient-provider communication as one of the independent predictors of trust in provider (Haywood et al., 2010; Street, O'Malley, Cooper, & Haidet, 2008). This further emphasizes the important relationship between patient-provider communication and trust among African American women observed in qualitative studies (Battaglia, Finley, & Liebschutz, 2003; Lori et al., 2011; Sheppard et al., 2004).

Regardless, this is one of the few clinical studies that have quantitatively measured patient-provider communication and its relationship to trust in provider with pregnant African American women receiving prenatal care immediately after the visit. Greater trust in one's provider has been predictive of utilizing recommended preventive services among older low-income African American women (O'Malley, Sheppard, Schwartz, & Mandelblatt, 2004). Specifically for pregnant and postpartum African American women, qualitative studies have shown trust is related to willingness to follow provider recommendations and greater satisfaction with care (Sheppard et al., 2004). These studies emphasize improving patient-provider communication to build trust within the patient-provider dyad, which could lead to greater adherence, better health and healthcare outcomes, and reduction in reports of perceived discrimination.

The women in the study experienced quality patient-provider communication, which was predictive of greater trust in provider and higher prenatal satisfaction, despite the fact that this was the women's first prenatal visit and the providers were predominantly white. Prior qualitative studies conducted at this clinic revealed anecdotally that pregnant women chose this clinic site due to their prior experience of the quality of care received, including their positive relationships with their obstetricians/gynecologists (Lori et al., 2011; Yi, Lori, & Martyn, 2008). It is also interesting to note that since the majority of providers in our study were white, the women and providers were in a race discordant relationship (i.e., patient and provider belong to different racial/ethnic background). Despite research showing greater patient satisfaction in race concordant relationships (Cooper et al., 2003), this study suggests that quality patient-provider communication is more important in influencing perceptions of care than race concordance. This supports the comprehensive literature review by Meghani et al. (2009) in which authors reported inconclusive evidence on the positive association of race concordant relationships in improving minority process and healthcare outcomes.

In addition, the mean years of practice of providers in our study were relatively low ($M=3.26$, $SD=5.62$). This suggests that communication skills training for medical residents may have resulted in improved patient-provider communication in this clinical setting. Communication skills training is now one of four selected educational milestones that medical residents are expected to demonstrate competency in when they complete their training (Nasca, Philibert, Brigham, & Flynn, 2012). The majority of the providers ($n=10$) were between the ages of 26–35. This is consistent with a systematic review reporting that physicians who had been in practice longer, and who were older, were less likely to adhere to standards of care, have less factual knowledge, and may have worse patient outcomes (Choudhry, Fletcher, & Soumerai, 2005). Hence, the experience and/or the younger age of the providers may have potentially influenced positive patient-provider communication ratings.

Our current study's clinical setting appears to be a "model" clinic in which women gave a high rating to the quality of patient-provider communication, low experiences with provider discrimination, leading to high trust in provider and greater levels of prenatal care satisfaction. Future research in this clinical setting could focus on specific provider, staff, and clinic variables (e.g. specific provider and staff behaviors, clinic hours, helpfulness of staff and nurses, provision of ancillary services) that contribute to quality prenatal care and health outcomes for women and infants. Comparative studies at different prenatal clinics across regions could add to this body of knowledge.

In addition, the MCI survey was not able to distinguish the various components of patient-provider communication (affective support, health information, decisional-control). Future studies should analyze objective measures of patient-provider communication using audio and video-recording analyses. Subjective and objective measures of patient-provider communication through questionnaires and audio and video-recording analyses could assist to identify clear mechanisms or behaviors that lead to disparities in patient-provider communication, quality of care, and health outcomes for pregnant African American women.

Despite high trust in provider and satisfaction ratings, the study was conducted only at one clinical site with limited variability. Only a small number of women (n=12, 7%) indicated they experienced provider discrimination; thus, the study is lacking statistical power to detect the effects of perceived provider discrimination on prenatal satisfaction and trust in provider. However, this could most likely be the result of the positive patient-provider communication the women had with their providers.

The non-significant relationship between patient-provider interaction and women's adherence to provider recommendations could also have been due to social desirability bias as the self-reported adherence rate for prenatal health behaviors was high. The significant relationship between patient-provider communication and trust in provider and prenatal care satisfaction potentially could have also been due to social desirability bias. However, we took several measures to minimize potential bias. For example, women were asked to be honest with their responses as confidentiality would be maintained and questionnaires were self-administered in a quiet location. In addition, other personal factors could have been more predictive of return visits such as transportation, availability of childcare, and ability to get time off from work.

Quality patient-provider communication is vital in establishing a therapeutic alliance with the pregnant woman throughout her pregnancy. Considering that the majority of the time spent during the initial prenatal visit is related to pregnancy history assessment, providers need to be aware of the impact patient-provider communication has on building stronger patient-provider relationships, perception of care received, and its relationship to influence processes of care and health outcomes. This is emphasized by Association of Women's Health, Obstetric, and Neonatal Nurses (AWHONN) which supports the Institute of Medicine's definition of quality, "Good quality means providing patients with appropriate services in a technically competent manner, with good communication, shared decision making, and cultural sensitivity" (AWHONN, 2013; IOM, 2001), and the American College of Obstetricians and Gynecologists' [ACOG] statement emphasizing that "physicians' ability to effectively and compassionately communicate information is key to a successful patient-physician relationship...Patient outcomes depend on successful communication" (ACOG, 2014, p. 389)

This study focused on the interaction between African American patients seeking prenatal care and physician providers at a busy urban practice. Findings from our study can be used to inform the practice of prenatal care providers including nurses, advance practice nurses such as nurse-midwives and nurse practitioners, and physician assistants. Other studies examining patient-provider communication in prenatal settings of medical and nursing disciplines recommend additional training in counseling and communication skills (Chang et al., 2008, Meiksin et al., 2010). Being able to communicate effectively with vulnerable populations and different cultures requires a different set of communication skills than those needed for patients seen for chronic care in general practices. This highlights the importance of continued emphasis on communication skills training for providers of all levels within their own specialties, including strengthening of cross-cultural communication skills that extends beyond graduate education training. Thus, this research continues to support the need for communication skills training for obstetric providers which could lead to greater

trust in provider, greater satisfaction with care, and potentially reduced racial/ethnic disparities in quality of care and health behaviors for pregnant African American women.

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Figure 1.
Interaction Model of Client Health Behavior Modified

Table 1Women's Demographic Characteristics ($N = 204$)

Characteristic	<i>n</i>	%
Occupation		
Student	58	28.4
Work full time	33	16.2
Work part time	18	8.8
Unemployed	81	39.7
Missing Data	14	6.9
Marital Status		
Single	162	79.4
Married	22	10.8
Divorced/separated	3	1.5
Widow	1	0.5
Missing Data	16	7.8
Education		
Some high school	54	26.5
High school graduate/GED	74	36.3
Some college	56	27.4
College graduate	6	2.9
Missing Data	14	6.9
Insurance		
Medicaid	177	86.8
Private	8	3.9
No insurance	3	1.5
Missing Data	16	7.8
Average Annual Income		
<\$10,000	94	46.1
\$10,000–\$25,000	60	29.4
\$25,000–\$50,000	20	9.8
\$50,000–\$75,000	2	1.0
>\$75,000	2	1.0
Missing Data	26	12.7
Number of Living Children		
0	48	23.5
1	53	26.0
2	38	18.6
3 or more	47	23.1
Missing Data	18	8.8
Self Reported Health Status		
Excellent	29	14.2
Very good	64	31.4

Characteristic	<i>n</i>	%
Good	75	36.8
Fair	19	9.3
Missing Data	17	8.3
I am living....		
alone	28	13.7
with family	121	59.3
with significant other	40	19.6
Missing Data	15	7.4
Gestation by Trimester		
First trimester (4–12 weeks)	99	48.5
Second trimester (13–28 weeks)	72	35.3
Third trimester (29–40 weeks)	15	7.4
Missing Data	18	8.8

Table 2

Provider Demographics (n=21)

Characteristic	<i>n</i>	%
Provider Type		
Obstetric/gynecology	20	95
Residents		
Physician Assistant	1	5
Provider Gender		
Female	17	81
Male	4	19
Provider Race/Ethnicity		
African American	5	24
Arab American	2	10
Asian	5	24
White	6	29
Other	1	5
Missing Data	2	8
Provider Age		
26–30	6	28.5
31–35	4	19
>35	2	9.5
Missing Data	9	42.8

Table 3

Descriptives and alpha reliabilities for major study variables

Measure	N	Observed Range	Mean (SD)	# of scale items	α
Dependent Variables					
Trust in Provider	189	18–55	48.00 (6.30)	11	.89
Prenatal Care Satisfaction	189	6–20	18.29 (2.36)	4	.87
Independent Variables					
Patient-Provider Communication	188	18–90	81.68 (10.43)	18	.95
Perceived Provider Discrimination	184	7–14	7.12 (0.62)	7	.83

Table 4

Frequencies of Adherence to Prenatal Health Behavior Measures based on Women's Self-Report at Return Visit (N=150)*

Health Behavior Variables	Number of Women's Response	Number of Women Reporting Adherence	Percent Adherence
Prenatal labs	122	115	94
Eat Healthy foods	99	99	100
Ultrasound	96	89	93
Take Prenatal Vitamins	83	83	100
Stop Smoking	57	54	95
Use Condoms	41	38	93
See a Social Worker	39	21	54
Exercise	27	27	100
Stop Drinking Alcohol	27	23	85
Stop Using Drugs	21	18	86
Avoid Sex	12	12	100

* Total return visits was 153, but in 3 visits the adherence measures were not collected

Table 5

Multiple Linear Regression Analyses Summary of Patient-Provider Interaction Variables in Predicting Trust in Provider and Prenatal Care Satisfaction

Measures	Trust			Satisfaction		
	B	SE B	β	B	SE B	β
Patient-Provider Interaction						
Patient-Provider Communication (PPC)	0.45	0.03	0.75*	0.18	0.01	0.81*
Provider Discrimination	-0.14	1.34	-0.01	-0.73	0.42	-0.08

B= unstandardized; β =standardized

Full Model: $F(2,181)=119.02, p <.001$; *Adjusted R²* for Trust in Provider = .56

Full Model: $F(2,181)=217.16, p <.001$; *Adjusted R²* for Prenatal Care Satisfaction= .71

* p value <.001

Table 6

Summary of Logistic Regression Analyses of Patient-Provider Interaction Variables in Predicting Adherence to Provider Recommended Measures: Return Visits (N=184), Prenatal Labs (N=117), Ultrasounds (N=97), and Prenatal Vitamin (N=84)

Predictors	Return Visit		Prenatal Labs		Ultrasounds		Prenatal Vitamin	
	β^* (SE)	OR (95%CI)	β^* (SE)	OR (95%CI)	β^* (SE)	OR (95%CI)	β^* (SE)	OR (95%CI)
Patient-Provider Communication	-0.01 (0.02)	0.99 (0.95-1.03)	-.09 (0.09)	0.92 (0.77-1.09)	0.00 (0.03)	1.00 (0.94-1.07)	0.06 (0.07)	1.06 (0.92-1.23)
Provider Discrimination	-0.04 (0.85)	0.96 (0.18-5.07)	-16.95 (13797.56)	0.00 (0.00-infinity)	0.90 (1.37)	2.47 (0.17-35.94)	-18.79 (17049.78)	0.00 (0.00-infinity)

* None of the relationships shown were anywhere near statistical significance, *p* values >.25