

**What Really Happens When Patients leave the ED? Self-Reported  
Discharge Instruction Adherence Among Different Racial Groups  
Seen in the Emergency Department.**

By


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## Abstract

Tiencia D. DePass

### What Really Happens When Patients Leave the ED?

Self-Reported Discharge Instruction Adherence Among Different Racial Groups  
Seen in the Emergency Department.

(Under the direction of Jane Brice MD,MPH and Timothy Carey MD, MPH)

Objectives: To compare the adherence rates to discharge instructions and barriers faced between White, Black and Hispanic patients. Methods: Of 268 White, 141 Black, and 64 Hispanic eligible patients who were discharged from the emergency department with a recommended follow-up within two weeks, 133 (53.1%) White, 69 (48.9%) Black, and 49 (76.6%) Hispanic completed a telephone interview within two to four weeks following their emergency department discharge to determine their adherence to follow-up and prescription filling. Results: Adherence to follow-up was 62.41% in Whites, 56.52% in Blacks, and 53.06% in Hispanics (ns with  $X^2$  test). Adherence to prescription filling was 83.75% in Whites, 86.79% in Blacks, and 94.59% in Hispanics (ns with  $X^2$  test). White patients were more likely to report feeling better (30%) as a barrier to follow-up, while Black (49%) and Hispanic (34%) patients were more likely to have difficulty in getting an appointment within the 2 weeks. Conclusion: Blacks and Hispanics are more likely than Whites to report difficulty in getting an appointment within a two-week period for follow-up even though the overall adherence is similar between groups. Despite the varied level of uninsured patients within each racial group, cost was not found to be a major barrier. This suggests that improving adherence for a diverse population will require addressing institutional barriers such as appointment wait time and physician to patient ratios in addition to current efforts to increase access to care.

## **Dedication**

To my most cherished blessing, my family, who believed in my potential before I  
ever did

To my heart, Andy, who's undying love and encouragement kept me going  
And to all the patients who gave me their time and reminded me with each brief  
conversation why all the hours put into this project were well worthwhile.

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## **Introduction**

The 2002 IOM report *Unequal Treatment*<sup>1</sup> clearly demonstrates the widespread disparities in access, utilization, and health outcomes that exist in medicine for racial minorities. Although much of disparities research has focused on the inequities in the use of medical interventions and therapies by physicians, other factors associated with patient health behaviors can have a large impact on health outcomes as well. One health behavior that is of particular concern in Emergency Medicine is patient adherence to discharge instructions. Compliance with discharge instructions after an emergency visit is necessary to safely manage illnesses that have the potential to progress but do not warrant hospitalization. In addition, it also serves to get patients who present with illnesses that are not acutely life threatening networked into primary care so that future emergency care use can be utilized more appropriately.

There have been several studies that have looked at patient adherence to follow-up in the ambulatory setting which suggest decreased follow-up in minority populations<sup>2</sup>, however very few looked specifically at adherence to discharge instructions from the emergency department. The existing literature on emergency department adherence includes studies that do not explore adherence to follow-up as they relate to race across a broad spectrum of ailments. Bazarian et al. conducted a prospective observational study looking at patient follow-up



and found that African Americans were almost three times less likely to attend a follow-up visit than the general population.<sup>3</sup> While Bazarian et al. did explore possible barriers to follow-up for their convenience sample, they only focused on patients with head injuries and did not attempt to explore the reasons for the significant racial gap.<sup>3</sup> Leickly et al.'s study focused on barriers to adherence for inner city asthma patients seen in the ED with population comprised of African American and Hispanic patients.<sup>4</sup> They found several barriers to both medicine use and appointment keeping but did not compare these measures controlling for race. While there are identifiable barriers to adherence that apply across the general population that have been noted in multiple prior studies<sup>4</sup>, such as cost and lack of transportation, certain barriers may be more prevalent in minority population.<sup>4,5</sup> Identifying these key factors which contribute to barriers to ED follow-up for specific racial groups will be useful not only to define a problem of access but to create a solution. If there are significant differences in the barriers to adherence faced by patients of different ethnicities, this will direct EDs as to which contributing factors should be addressed depending on their own demographic population. The primary objective of this study was to compare the adherence rates for emergency department (ED) follow-up and prescription filling between White, Black and Hispanic adult patients and to determine the key barriers to adherence faced by each racial group.

**Null Hypothesis:** The null hypothesis is that there will be no racial differences in adherence to ED follow-up/ prescription filling or in the barriers (lack of enabling resources [cost, child care, transportation], individual factors [lack of

time, forgot, fear of side effects, felt better], and institutional barriers [difficulty getting an appointment, not able to get appointment within 2 weeks, pharmacy did not carry prescription]) to adherence that patients faced.

### **Theoretical Model of Adherence**

In order to understand the relationship between race and other factors that contribute to patient adherence, we developed our own theoretical model (Figure 1). This model uses the general framework provided by Aday and Anderson's Behavioral Model<sup>6, 7</sup> and the Leduc et al.'s<sup>8</sup> Compliance Model, but has been adjusted to include our own hypothesis based on the literature and personal experience of specific factors which describe how race can potentially affect patterns of adherence.

The study model defines three main pathways through which a patient's race acts as a predisposing factor that can affect their adherence to ED follow-up and prescriptions. Race impacts a patient's socioeconomic status (SES) which includes their level of income, education, and wealth. A patient's SES will determine the amount of enabling resources such as insurance, transportation and child care that they have access to in order to facilitate their compliance. These enabling resources can then affect both a patient's initial intent to adhere to ED discharge instructions while being evaluated and their ability to follow through with their intent to adhere after leaving the ED. Race can be associated with particular cultural values which impact a patient's individual health beliefs. These beliefs about the meaning of the patient's acute illness as well as their beliefs about the role of health care in managing their illness will predispose them to a

particular pattern of adherence. In addition, race can affect the quality of care a patient receives by influencing a health care provider's interaction and decision making with the patients. Early work in Nagy and Wolfe's compliance study based in a veteran's hospital found that patient satisfaction with their health care greatly influenced their compliance to discharge instructions.<sup>14</sup> This positive effect of patient satisfaction on compliance has also been demonstrated in other studies as well.<sup>15</sup>

After the initial intent to adhere is made based in large part by the above-mentioned predisposing factors, there are other factors that mediate whether the patient's initial intent to adhere (or not to adhere) is actually followed through. In addition to the enabling factors that were previously described, organizational and individual factors as well as a change in health status mediate a patient's adherence. Organizational factors describe the design of the health care delivery system in which the patient seeks care. This includes factors such as the type of follow-up (ED/primary care vs. specialty clinics), the availability of medication at a particular pharmacy, the patient-physician ratio at a clinic, and appointment wait time. Individual factors are patient characteristics that are not specific to any particular group and include factors like not having time or forgetting an appointment. Finally the change in health status of a patient after they are discharged can change a patient's initial intent to adhere.

In a thorough chart review and telephone interview, at least one specific item within each of the main factors defined in the proposed Adherence Model with the exclusion of the patient's health beliefs and intent to adhere were

investigated. The patient's health beliefs was not evaluated in this study because their general health beliefs are not as important as are their specific health beliefs concerning the illness that caused them to seek emergency care in affecting their intent to adhere. Since we are interested in adherence across a variety of ailments it was not possible to effectively measure the range of responses with a simple multiple choice question. Another study design, such as a qualitative study would be more appropriate to measure the impact of this factor on adherence.

## **Methods**

**Study Design.** A prospective follow-up study of patients discharged from the emergency department from February to July of 2003 was performed. The Duke School of Medicine and the UNC School of Medicine institutional review boards approved all aspects of this study before implementation and a waiver of written consent was received.

**Study Setting and population.** The study was performed in the ED of the University of North Carolina at Chapel Hill, a 665-bed suburban tertiary care center. The emergency department has a 3-year emergency medicine residency and is a level-I trauma center with an annual census of 60,000 patients. The study sample included White, Black and Hispanic adult (>18 years) patients discharged with written instructions to received follow-up within two weeks.

**Survey Content:** The survey instrument created for this study focused on patient demographics, measures of SES, health status, satisfaction with emergency

department care, adherence to prescription filling/follow-up appointments, and barriers to adherence.

The English survey was translated into Spanish and then back translated to English by a different translator to verify the accuracy of the translation. The Spanish version of the instrument included additional items focused on quality of hospital translators. The surveys were pre-tested on 10 people prior to patient enrollment in order to confirm clarify of survey items/instructions.

Survey items inquiring about specific barriers to adherence were developed based on the existing literature. The listed barriers of “cost”, “fear of side effects”, “forgot”, “no time”, and “no availability of earlier appointments” were found to be common barriers in Leickly et al.’s adherence study. “Lack of child care” was another barrier included on our survey that was found to be one of the most significant barriers in an earlier ED compliance study.<sup>14</sup> Another listed barrier for prescription filling of “pharmacy did have the medication” was recently suggested by Morrison et al.’s study that reported that pharmacies in nonwhite neighborhoods were less adequately stocked with pain prescriptions.<sup>6</sup> During the survey administration patients were inquired about each specific potential barrier and also asked about any other barriers not explicitly included in the survey options.

**Survey Administration.** Based on the current adherence literature we estimated that the overall level of adherence would be 66% and that of African Americans to be 49% (consistent reports of adherence for Hispanics was not found). A pre-test power calculation suggest that approximately 134 patients in each racial

group would be needed to detect a minimum difference of 17% (alpha 0.05, beta 0.80). One hundred and fifty were sought to email in each arm.

All ED charts were reviewed from three pre-selected days a week. The selected days were varied each week so that there was equal sampling of weekdays and weekends. ED charts were reviewed sequentially for patients who were discharged two weeks prior and met the following inclusion criteria: 1. age > 18, 2. discharged home from the ED after being seen by a MD, 3. written instructions on chart to follow up within two weeks (follow up included recommendations to be seen by Univ. hospital clinic, ED urgent care, and/or private physician), 4. recorded race of White, Black, or Hispanic, and 5. primary language of English or Spanish. The exclusion criteria were: 1. patients with significant mental impairment (as indicated in the patient history or physical exam findings), 2. patients that received a psych consult while in the ED, 3. patients who were from institutions (jail or care facilities), 4. return ED patients who had already completed a survey, and 5. patients who received instruction to follow-up only if needed.

Baseline data was abstracted from charts and patients were contacted between 2-4 weeks following their ED discharge. The calling times varied from between 10AM – 9PM both on weekdays and weekends. Selected patients to be called were considered non-responders after five unsuccessful telephone attempts or after four weeks from their discharge date. Informed consent to the interview was made over the phone and a 26-item survey was conducted (~10mins) in the

patient's preferred language. Bilingual interviewers performed all the Hispanic interviews.

**Data Analysis.** The response rate was calculated by dividing the number of completed interviews by the number of patients who we attempted to contact to participate in the study. Survey data was compiled into an Excel database and Stata software (version 6.0, Stata Corporation, College Station, TX) was then used to estimate the Chi-square ( $p < 0.05$ ) to compare the two dichotomous primary outcome and possible associations between other variables of interest gathered in the survey. Multiple logistic regressions were used to predict compliance and assess the impact of the following potential predictors: race, sex, age, insurance, income, employment status, education, health status, illness type, and satisfaction with care. Those factors which appeared to have predictive value in individual comparisons ( $p < .10$ ) were then combined into a single logistic regression model in order to determine true significance ( $p < .05$ ) when controlling for confounding interactions. The dependent variables were adherence to follow-up and prescription filling. Descriptive statistics were used to provide frequencies of various patient characteristics.

## Results

### **Sample characteristics:**

There were 133 White, 69 Black, and 49 Hispanic telephone surveys completed between February and June of 2003. Only 9 (18%) of the interviews of Hispanic patients were done in English. The remainder were all administered the survey in

Spanish according to patient preference by bilingual interviewers. The response rates for each racial group was 49.6%, 48.9%, and 76.6% respectively. The majority of nonresponders were lost to follow-up due to invalid phone numbers or inability to contact within the defined 4-week period. (Figure 2)

Patient demographics were compared for each racial group for both responders and nonresponders. The average patient age of 29-32 for Hispanics was lower than both that of Blacks and Whites. The majority of the Black and Hispanic populations were distributed in the lower income (< \$20,000) and education (high school or less) brackets when compared to the White population. The Hispanics had the highest level of uninsured visits at 71.43-80%. In general when the responders were compared to the nonresponders for each racial group, the responders were more likely to be insured (Table 1).

### **Adherence to Follow-up/ Prescriptions**

There was a trend of decreased adherence to follow-up when Black and Hispanic patients were compared to Whites (W= 83/133(62.41%), B= 39/69(56.52%), H=26/49 (53.06%)) Figure 3. This trend was reversed with their adherence to prescription filling (W= 67/80 (83.75%), B= 46/53 (86.79%), H 35/37 (94.59%)) Figure 4. These trends were not statistically significant using the  $X^2$  test (adherence to follow-up,  $p=0.59$ / adherence to prescriptions,  $p=0.102$  ).

### **Barriers to Adherence**

Cost and transportation was not found to be a major barrier within any of the racial groups. White patients were most likely to report “feeling better” as a reason for nonadherence to follow-up (14(30%)) Figure 5. Hispanic (4(34%)) and



Black (11(42%)) patients were most likely to report “ could not get an earlier appointment” as their main barrier to acute follow-up. Figure 6, Figure 7.

When we looked at the barriers faced to prescription filling, Whites were found to report “didn’t need it” as their main barrier (11/52.4%). The main barriers for Black patients were “other”(5/35.7 %) followed closely by “cost” (4/28.6%). The small percentage of nonadherent Hispanics (<7% of their total population or 3 patients) precluded a meaningful classification of their barriers.

### **Predictors for nonadherence**

Regression analysis of potential factors predictive of adherence found that only age was significantly correlated with adherence. Older patients had increased adherence to follow-up (OR 1.02,  $p=.046$ ) but decreased adherence to prescription filling(OR 0.95,  $p=.001$ ). All of the other eleven main potential predictors of adherence (sex, age, illness type, insurance, employment, education, income, health status, patient satisfaction, and change in health status) were not found to be significant ( $p>.05$ ).

### **Discussion**

Our preliminary data did not show a difference in adherence to follow-up appointments or prescription filling among different racial groups seen in the Emergency department. Although there was a pattern of decreased adherence to follow-up for minority populations and increased adherence to prescription filling that have been suggested by previous studies<sup>2,3</sup>, the magnitude of these trends in our study was not found to be statistically significant. The difference in adherence among racial groups varies by only three to ten percent. It is

unknown if this small difference will grow to statistical significance once total patient enrollment is completed, however the apparent diminished disparity suggests that the large racial variances in adherence reported elsewhere are not consistent throughout emergency medicine but may be a characteristic specific to a particular population and/or institution.

Out of all the potential predictors of compliance, only the trend of age fit the regression model of adherence to follow-up. This suggests that the variability seen in adherence levels reported in the literature for different racial groups is merely a byproduct of the fact that the age distribution differs among groups seen in the ED and is not intrinsically associated to characteristics of any particular racial group.

While this study does not support the claim that racial disparities in medicine are found in patient adherence in the Emergency Department, this study does suggest that the *barriers* to adherence faced by patients vary among racial groups in this setting. Blacks and Hispanics were found to be more likely than Whites to report difficulty in getting an appointment within a 2-week period. The cause of this relationship between race and barriers faced should be explored further in order to determine if these findings are reproducible and result largely from generalized institutional barriers specific to the health system in which patients seek their follow-up care ( such as patient-physician ratio, administration policy or characteristics, etc.) or if this effect is created by the differential impact of institutional policies/procedures among racial groups. If the White, Black, and Hispanic patients all sought

healthcare within the same institutions but Black and Hispanic patients are consistently found to have more difficulty in obtaining acute follow-up, this would suggest that the institution preferentially accommodates one racial group over the other either intentionally or unintentionally as a result of its structure and policies. Conversely if White, Black and Hispanic patients tend to seek their healthcare within different health systems, the differences in the main barriers that each population faces could be a result of general differences in the institutions. For example if minority populations are more likely to receive care in facilities with high patient/health provider ratios (i.e. health departments), this would increase their chance of being unable to receive timely care even when acute follow-up is recommended. In this case if White patients were then to seek their care in these same institutions they would be expected to experience the similar levels of difficulty in getting short-term follow-up as demonstrated in the minority populations.

Determining the underlying problem to explain our results will be important in developing successful intervention strategies to improve adherence for all populations. For example if the main problem is found to be a lack of resources in certain health institutions, interventions could strive to recruit and hire more health care workers to facilitate improved availability for acute follow-up. However if the real problem is the structure of the institution which consistently results in increased external barriers(i.e. not internally motivated like the barriers of “not having time” or nonadherence due to “feeling better”) for racial minorities, adding more resources to the

institutional will not solve the problem because the available resources will continue to be distributed unevenly unless the underlying policies which tend to favor certain patient groups can be changed.

**Limitations:**

Although we have completed nearly 50% of the interviews (233/450) at this time, the study is not yet complete so the available data can only demonstrate general trends. Although the Chi-square tests for significance were performed it is unknown if the adherence rates or trends among racial groups will significantly change when the study is complete.

Our methodology prevented the participation of patients who did not have telephones, had numbers that were recently disconnected, or who were not available during the hours of 10AM-9PM. The baseline characteristics varied among the responders and nonresponders, particularly in the fact that nonresponders were more likely to be uninsured, suggests that the adherence estimates found in the study will be overestimates for all racial groups due to the effects of this nonresponse bias.

Due to the fact that we are using self reported surveys, we cannot validate the answers provided. There could potentially be a social desirability factor which may cause patients to be less likely to admit things that they perceive to be negative such as nonadherence, however the wording of the survey items were specifically designed to minimize this effect. Although our survey was designed to address what we hypothesized to be the main factors influencing adherence, not all factors that could have affected adherence were included. In particular, our

survey did not directly evaluate the patient's health beliefs. In addition, several factors in our theoretical model such as health status, quality of care, change in health, and health outcomes can all be quantified both objectively (using physician evaluation or specific criteria) and subjectively. The survey design of this study limits our evaluation to the patient's own perception of these measures. It is unknown how well their perceptions would correlate to objective measures or how using objective measures could change our conclusions.

## **Conclusions**

We did not find significant differences in adherence between racial groups but did find that the barriers to adherence differed among populations with minorities experiencing more difficulty in obtaining follow-up appointments within a two-week time period. Although much of current health policy focuses on decreasing financial barriers in order to improve access, cost was not found to be a major barrier in any of our patients groups. This suggests that health policy should begin to focus more on institutional factors in order to improve access to care and that different intervention strategies may be needed to improve patient adherence within a diverse population.

Future research should investigate adherence levels between racial groups within different institutions to identify the specific settings in which interventions are needed to address racial disparities and to learn what policies in other institutions prevent large disparities from existing. In addition, data gathered should include where patients are seeking their care so it can be determined if differences in the barriers faced by racial groups result from generalized institutional barriers or specific institutional biases are created by policies/administrative organization that tend to favor particular groups. This will be important in order develop successful interventions to improve overall adherence for a diverse population. Finally future research should investigate the impact of patient adherence on short and long term objective health outcomes so that differences in adherence can be correlated to clinically significant outcomes.

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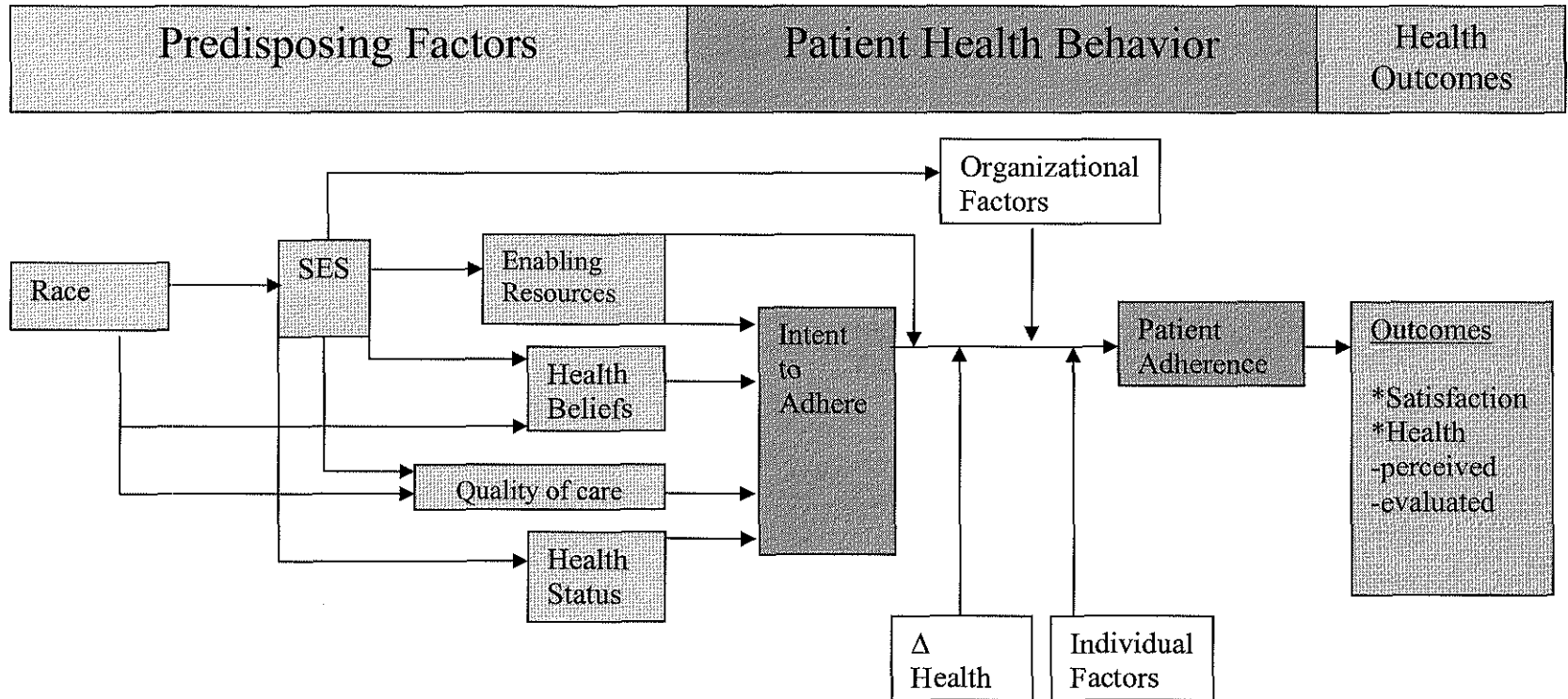
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Figure 1.

## Model for Adherence to ED Follow-up Appointments and Prescriptions



**figure 2.** Patient Enrollment and Response Rates

**Response Rates**

Overall 251/473= 53.1%

White (W) 133/268= 49.6%

Black (B) 69/141= 48.9%

Hispanic (H) 49/64= 76.6%

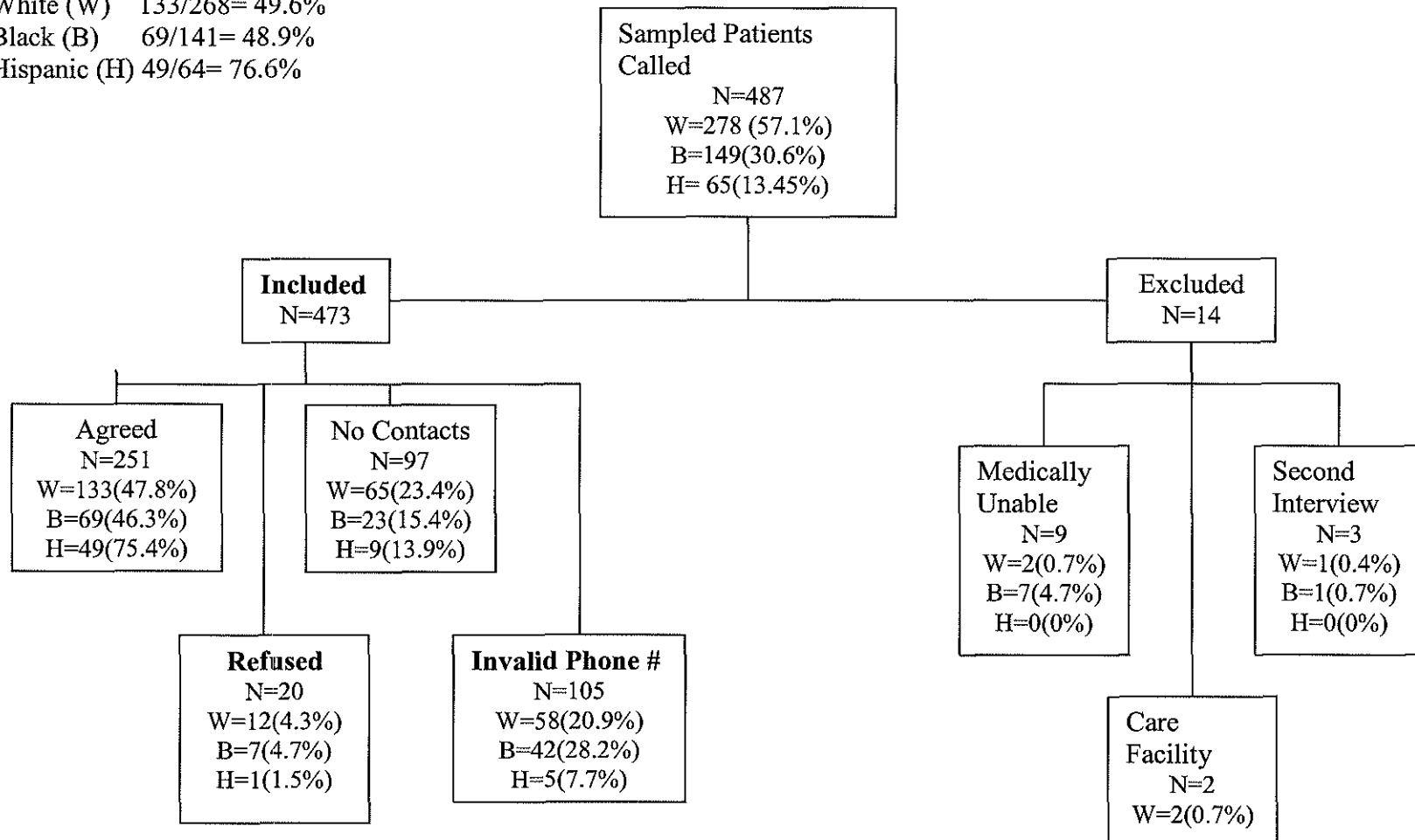


Table 1.

## Patient Demographics

	WHITE		BLACK		HISPANIC	
	Responders	Nonresponders	Responders	Nonresponders	Responders	Nonresponders
	N=133	N=134	N=69	N=72	N=49	N=15
<b>Sex % M/F</b>	35(65)	52(48)	25 (76)	40 (60)	45 (55)	47 (53)
Age: mean+/-SD	48 +/- 19	41 +/- 19	42 +/- 14	39 +/- 12	32 +/- 11	29 +/- 10
<b>Illness type #/%</b>						
Medical	91 (68)	72 (53)	39 (57)	42 (58)	27 (55)	6 (40)
Trauma	40 (30)	60 (44)	21 (30)	26 (36)	10 (20)	6 (40)
Ob/Gyn	2 (2)	3 (2)	9 (13)	4 (6)	12 (24)	3 (20)
<b>Follow-up type #/%</b>						
Primary care	93 (70)	103 (76)	53 (77)	56 (78)	27 (55)	7 (47)
Specialty clinic	40 (30)	32 (24)	16 (23)	16 (22)	22 (45)	8 (53)
<b>%employed</b>	58 (44)	*	33 (48)	*	26 (53)	*
<b>Income Distribution #/%</b>						
0-9999	18 (14)	*	22 (32)	*	25 (51)	*
10000-19999	24 (18)	*	20 (29)	*	10 (20)	*
20000-29999	18 (14)	*	10 (14)	*	7 (14)	*
30000-39999	13 (10)	*	3 (4)	*	1 (2)	*
40000+	51 (38)	*	8 (12)	*	2 (4)	*
<b>Education #/%</b>						
elementary	5 (4)	*	2 (3)	*	15 (31)	*
Some high school	11 (8)	*	15 (22)	*	9 (18)	*
Completed HS	38 (29)	*	33 (48)	*	17 (35)	*

College/ Tech.	76 (57)	*	19 (28)	*	7 (14)	*
<b>Insurance status #/%</b>						
uninsured	31 (23)	57 (42)	21 (30)	29 (40)	35 (71)	12 (80)
Medicaid	4 (3)	10 (7)	7 (10)	8 (11)	1 (2)	0
Medicare	21 (16)	12 (9)	7 (10)	5 (7)	0	0
Private	77 (58)	56 (41)	34 (49)	30 (42)	13 (27)	3 (20)

**Table 2.** Adherence for White patients by potential predictors

		To Follow-Up Appt.			To Prescriptions		
		Yes	No	P	Yes	No	P
		N=83	N=40		N=67	n=13	
SEX	Male	24 (29)	15 (38)	0.338	20 (30)	4 (31)	0.947
	Female	59 (71)	25 (63)		47 (70)	9 (69)	
Age	<30	15 (18)	11 (28)	0.365	14 (21)	2 (15)	<b>0.046</b>
	31-50	34 (41)	17 (43)		1 (35)	3 (23)	
	>50	34 (41)	12 (30)		18 (27)	8 (62)	
Illness	Medical	54 (65)	30 (75)	0.406	47 (70)	6 (46)	<b>0.03</b>
	Trauma	28 (34)	9 (23)		20 (30)	6 (46)	
	Ob/Gyn	1 (1)	1 (3)		0 (0)	1 (8)	
FU type	Primary	62 (75)	24 (60)	0.096	44 (66)	8 (62)	0.775
	Specialty	21 (25)	16 (40)		23 (34)	5 (38)	
Insured	Self pay	18 (22)	9 (23)	0.711	21 (31)	2 (15)	0.582
	Medicaid	2 (2)	1 (3)		2 (3)	0 (0)	
	Medicare	15 (18)	4 (10)		9 (13)	2 (15)	
	Private	48 (58)	26 (65)		35 (52)	9 (69)	
Employment	Employed	35 (42)	20 (50)	0.413	30 (45)	5 (38 )	0.674
	Unemployed	48 (58)	20 (50)		37 (55)	8 (62)	
Household size	one to two	49 (59)	26 (65)	0.599	32 (48)	10 (77)	0.211
	three to four	23 (28)	12 (30)		23 (34)	3 (23)	
	five to six	8 (10)	2 (5)		10 (15)	0 (0)	
	more then six	2 (2)	0 (0)		2 (3)	0 (0)	
Education	Elementary	2 (2)	2 (5)	0.882	3 (4)	1 (8)	0.93
	Some high school	7 (8)	3 (8)		7 (10)	1 (8)	
	completed HS	23 (28)	10 (25)		22 (33)	5 (38)	
	college+	49 (59)	24 (60)		34 (51)	6 (46)	
Income	0-9999	9 (11)	7 (18)	0.515	9 (13)	2 (15)	0.915
	10,000-19999	17 (20)	7 (18)		16 (24)	2 (15)	
	20000-29999	13 (16)	5 (13)		7 (10)	2 (15)	
	30000-39999	6 (7)	6 (15)		9 (13)	1 (8)	
	40000-49999	33 (40)	13 (33)		23 (34)	5 (38)	
Health Status	Good	50 (60)	29 (73)	0.297	40 (60)	12 (92)	0.069
	Fair	20 (24)	5 (13)		14 (21)	0 (0)	
	Poor	13 (16)			13 (19)	1 (8)	
Quality of service	Excellent	41 (49)	19 (47)	0.661	29 (43)	9 (69)	0.321
	Satisfactory	34 (41)	18 (45)		31 (46)	4 (31)	
	Poor	8 (10)	2 (5)		6 (9)	0 (0)	
Change in health	Improved	58 (70)	28 (70)	0.867	40 (60)	11 (85)	0.22
	Unchanged	18 (22)	8 (20)		18 (27)	1 (8)	
	Gotten worse	6 (7)	4 (10)		9 (13)	1 (8)	

\* All numbers in parenthesis are percentages

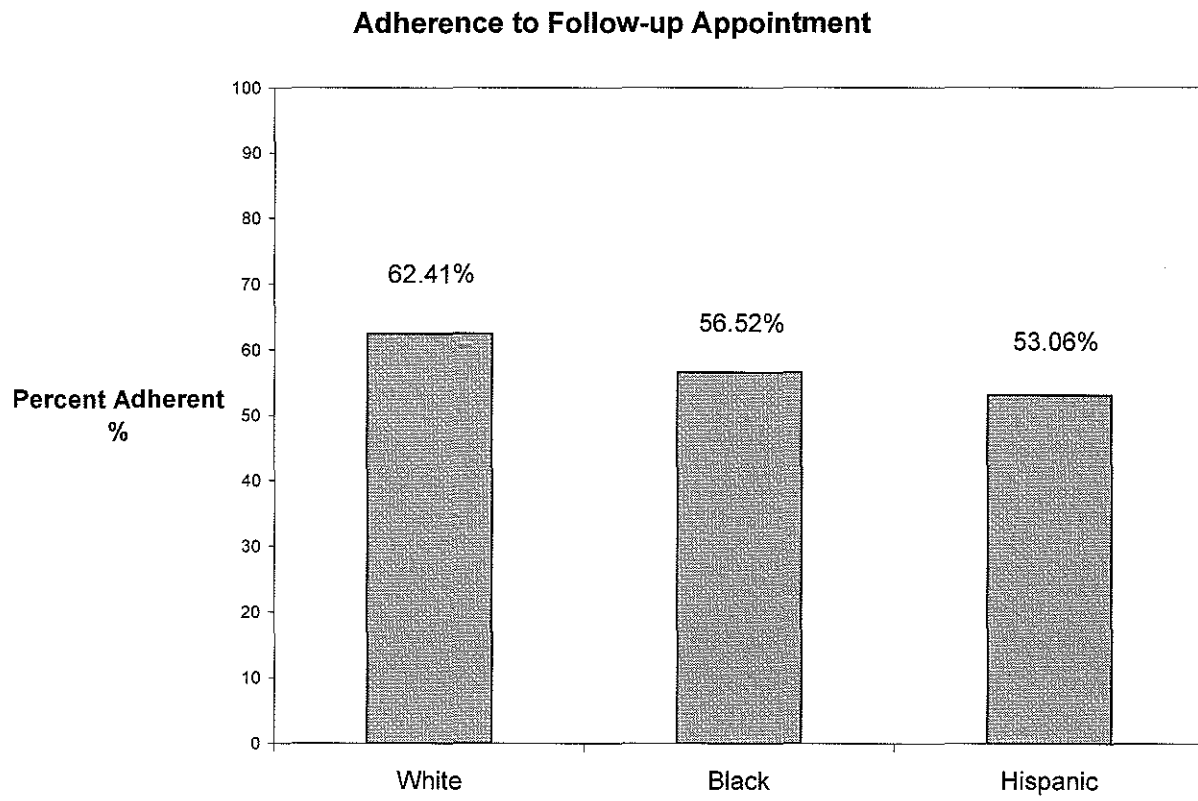
**Table 3.** Adherence for Black patients by potential predictors

		To Follow-Up Appt.			To Prescriptions		
		Yes	No	P	Yes	No	P
		N=39	N=26		N=46	N=7	
SEX	Male	9 (23)	6 (23)	1	11 (24)	1 (14)	0.571
	Female	30 (77)	20 (77)		35 (76)	6 (86)	
Age	<30	9 (23)	8 (31)	0.728	12 (26)	1 (14)	0.688
	31-50	20 (51)	13 (50)		26 (57)	4 (57)	
	>50	10 (26)	5 (19)		8 (17)	2 (29)	
Illness	Medical	25 (64)	13 (50)	0.201	26 (57)	2 (29)	0.336
	Trauma	11 (28)	7 (27)		14 (30)	4 (57)	
	Ob/Gyn	3 (8)	6 (23)		6 (13)	1 (14)	
FU type	Primary	30 (77)	20 (77)	1	36 (78)	4 (57)	0.226
	Specialty	9 (23)	6 (23)		10 (22)	3 (43)	
Insured	Self pay	12 (31)	7 (27)	0.88	13 (26)	4 (57)	0.43
	Medicaid	4 (10)	3 (12)		4 (9)	0 (0)	
	Medicare	5 (13)	2 (8)		2 (4)	0 (0)	
	Private	18 (46)	14 (54)		27 (59)	3 (43)	
Employment	Employed	16 (41)	14 (54)	0.31	24 (52)	4 (57)	0.806
	Unemployed	23 (59)	12 (46)		22 (48)	3 (43)	
Household size	one to two	18 (46)	9 (35)	0.489	18 (39)	2 (29)	0.917
	three to four	16 (41)	11 (42)		21 (46)	4 (57)	
	five to six	5 (13)	5 (19)		6 (13)	1 (14)	
	more then six	0 (0)	1 (4)		1 (2)	0 (0)	
Education	Elementary	2 (5)	0 (0)	0.556	2 (4)	0 (0)	0.932
	Some high school	7 (18)	7 (27)		10 (22)	2 (29)	
	completed HS	19 (49)	13 (50)		21 (46)	3 (43)	
	college+	11 (28)	6 (23)		13 (28)	2 (29)	
Income	0-9999	14 (36)	6 (23)	0.134	13 (7)	3 (43)	0.537
	10,000-19999	11 (28)	9 (34)		14 (30)	2 (29)	
	20000-29999	4 (10)	5 (19)		6 (13)	0 (0)	
	30000-39999	0 (0)	3 (12)		3 (7)	0 (0)	
	40000-49999	6 (15)	2 (8)		7 (15)	0 (0)	
Health Status	Good	23 (59)	17 (65)	0.472	29 (63)	6 (86)	0.265
	Fair	11 (28)	8 (31)		13 (28)	0 (0)	
	Poor	5 (13)	1 (4)		4 (9)	1 (14)	
Quality of service	Excellent	18 (46)	11 (42)	0.292	22 (48)	3 (43)	0.57
	Satisfactory	18 (46)	15 (58)		22 (48)	3 (43)	
	Poor	3 (8)	0 (0)		2 (4)	1 (14)	
Change in health	Improved	28 (72)	15 (58)	0.31	33 (72)	2 (29)	0.079
	Unchanged	7 (18)	9 (35)		10 (22)	4 (57)	
	Gotten worse	4 (10)	2 (8)		3 (7)	1 (14)	

**Table 3.** Adherence for Hispanic patients by potential predictors

		To Follow-Up Appt.			To Prescriptions		
		Yes	No	P	Yes	No	P
		N=26	N=12		N=35	N=2	
SEX	Male	11 (42)	7 (58)	0.358	18 (51)	1 (50)	0.969
	Female	15 (58)	5 (42)		17 (49)	1 (50)	
Age	<30	14 (54)	9 (75)	0.328	22 (63)	1 (50)	0.708
	31-50	9 (35)	3 (25)		9 (26)	1 (50)	
	>50	3 (12)	0 (0)		4 (11)	0 (0)	
Illness	Medical	15 (58)	4 (33)	0.1	17 (49)	2 (100)	0.367
	Trauma	3 (12)	5 (42)		9 (26)	0 (0)	
	Ob/Gyn	8 (31)	3 (25)		9 (26)	0 (0)	
FU type	Primary	13 (50)	8 (67)	0.337	21 (60)	1 (50)	0.779
	Specialty	13 (50)	4 (33)		14 (40)	1 (50)	
Insured	Self pay	17 (65)	10 (83)	0.257	24 (69)	2 (100)	0.639
	Medicaid	0 (0)	0 (0)		1 (3)	0 (0)	
	Medicare	0 (0)	0 (0)		10 (29)	0 (0)	
	Private	9 (35)	2 (17)		0 (0)	0 (0)	
Employment	Employed	13 (50)	8 (67)	0.337	19 (54)	1 (50)	0.906
	Unemployed	13 (50)	4 (33)		16 (46)	1 (50)	
Household size	one to two	5 (19)	1 (8)	0.328	6 (17)	0 (0)	0.485
	three to four	13 (50)	5 (42)		14 (40)	1 (50)	
	five to six	4 (15)	5 (42)		10 (29)	0 (0)	
	more then six	4 (15)	1 (8)		5 (14)	1 (50)	
Education	Elementary	9 (35)	6 (50)	0.758	12 (34)	1 (50)	0.558
	Some high school	5 (19)	1 (8)		6 (17)	1 (50)	
	completed HS	8 (31)	4 (33)		12 (34)	0 (0)	
	college+	3 (12)	1 (8)		4 (11)	0 (0)	
Income	0-9999	13 (50)	5 (42)	0.412	21 (60)	1 (50)	0.315
	10,000-19999	5 (19)	4 (33)		7 (20)	0 (0)	
	20000-29999	6 (23)	1 (8)		4 (11)	1 (50)	
	30000-39999	0 (0)	0 (0)		0 (0)	0 (0)	
	40000-49999	0 (0)	0 (0)		0 (0)	0 (0)	
Health Status	Good	12 (46)	8 (67)	0.449	18 (51)	0 (0)	0.348
	Fair	9 (35)	2 (17)		10 (29)	1 (50)	
	Poor	5 (19)	2 (17)		7 (20)	1 (50)	
Quality of service	Excellent	17 (65)	8 (67)	0.608	25 (71)	0 (0)	0.037
	Satisfactory	7 (27)	2 (17)		7 (20)	2 (100)	
	Poor	2 (8)	2 (17)		3 (9)	0 (0)	
Change in health	Improved	18 (69)	8 (67)	0.322	26 (74)	1 (0)	0.676
	Unchanged	8 (31)	3 (25)		8 (23)	1 (0)	
	Gotten worse	0 (0)	1 (8)		1 (3)	0 (0)	

Figure 3.



Total N=252 (W=134, B=69, H=49)  
p= 0.590



# Adherence to Prescriptions

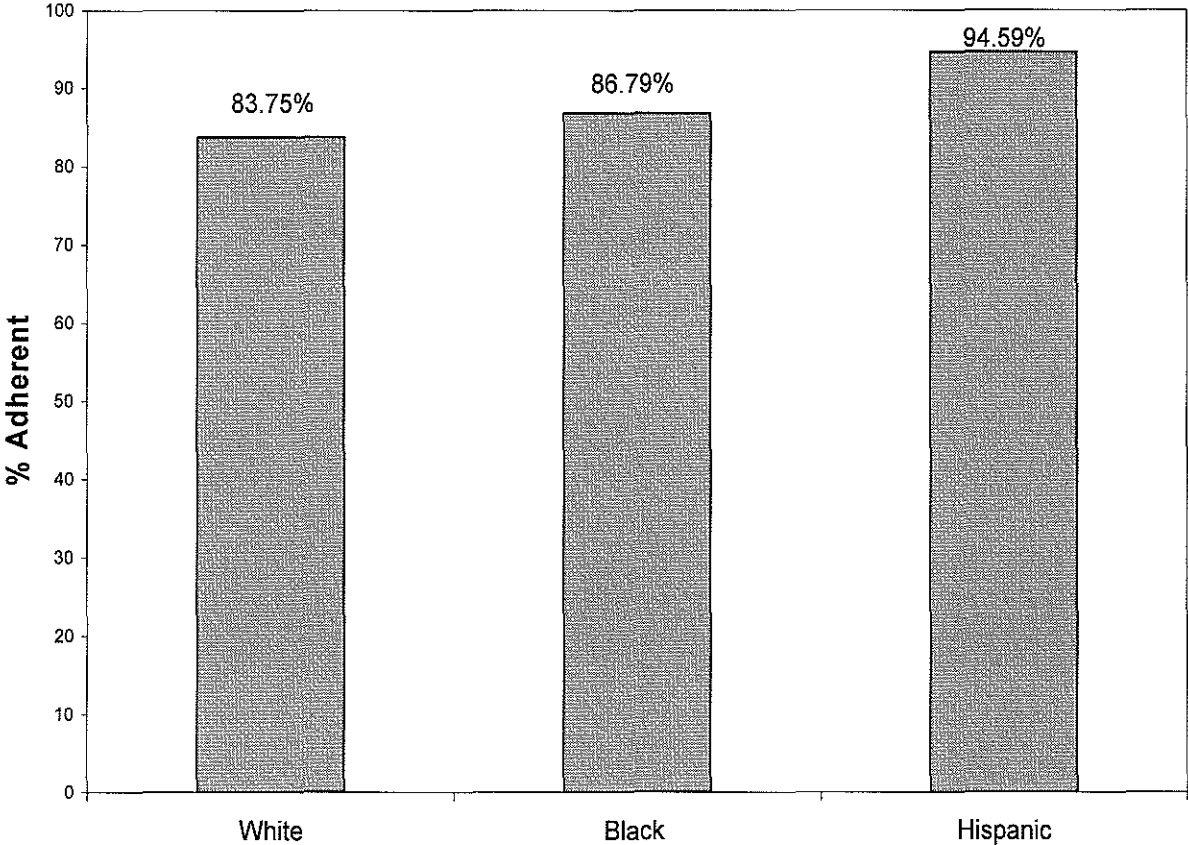
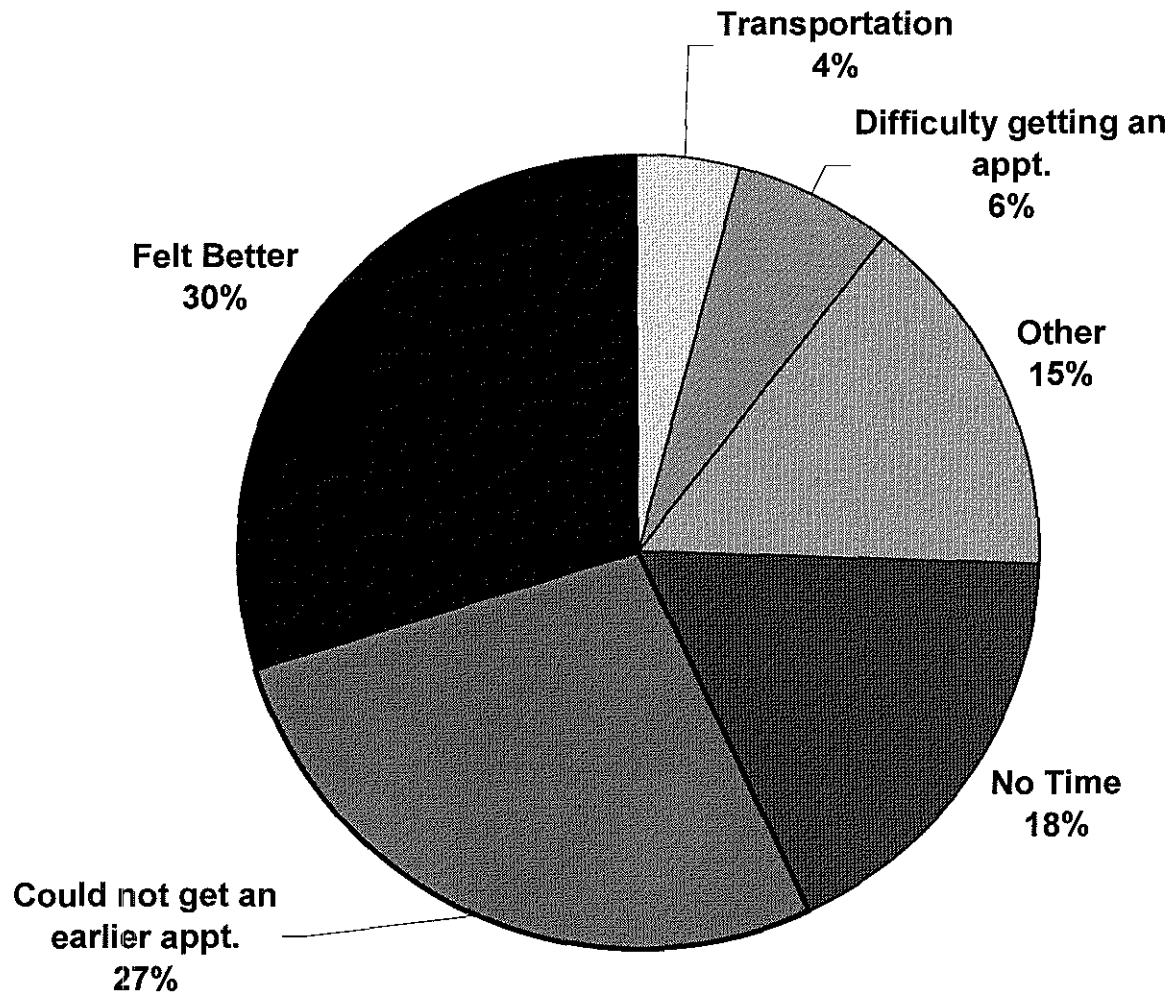
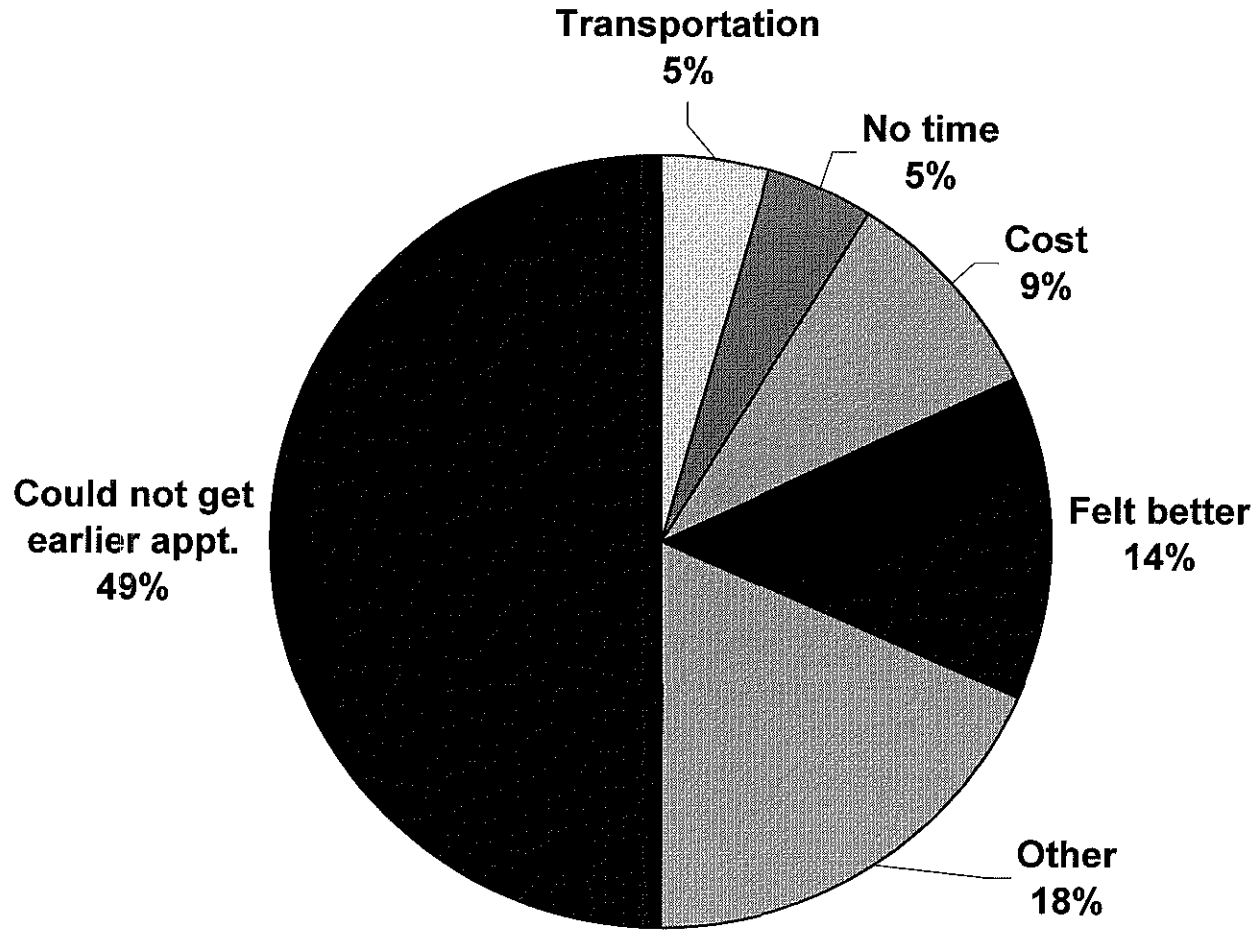


Figure 4.  
Total N=252 ( W=134, B=69, H=49)  
p= 0.102

**Figure 5. Barriers to Follow-up for White Patients**



**Figure 6. Barriers to Follow-up for Black Patients**



**Figure 7. Barriers to Follow-up for Hispanic Patients**

