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Implications of the Patient-Physician Relationship for People with Diabetes

Shaquille Charles

Carnegie Mellon University

Abstract

The purpose of this study was to assess race differences (African Americans and Caucasians) in aspects of the patient-physician relationship, and then determine how the patient-physician relationship influences patient satisfaction, diabetes self-care behaviors and diabetes knowledge among adults with diabetes. Participants consisted of 99 adults with diabetes who were currently receiving treatment for their diabetes. Participants were asked to complete a 15-minute questionnaire that assessed aspects of the patient-physician relationship, including patient's expectations of physician, actual patient-physician interactions, patient's desire for involvement in the health care process, and collaboration between the patient and physician regarding the patient's treatment plan. We expected lower expectation scores and less involvement in the health care process for African Americans than for Caucasians. We predicted that higher expectation scores would be associated with lower levels of patient satisfaction with their physician. We also predicted that a greater desire for involvement and a more collaborative health care situation would be correlated with greater diabetes knowledge and better self-care behaviors. Results indicate few race differences in the patient-physician relationship. Patient expectation was not significantly associated with patient satisfaction but the discrepancy between expectations and actual receipt was associated with satisfaction. There were trends indicating that patient desire for involvement and collaborative care were associated with better self-care behaviors. Only one aspect of desire for involvement was related to diabetes knowledge. Although few race differences in the patient-physician relationship appeared, aspects of that relationship were associated with patient satisfaction and diabetes management and those relations may vary by race.

Implications of the Patient-Physician Relationship for People with Diabetes

Previous research indicates that African Americans are less likely to take proper care of their diabetes and are more likely to have poorer glycemic control compared to Caucasians. According to a population study conducted with participants enrolled in managed care organizations, African Americans in general are significantly less likely to monitor their diet than Caucasians (Oster, Welch, Schild, Gazmararian, Rask & Spettell, 2006). A qualitative study based on semi-structured interviews revealed that African Americans diagnosed with diabetes are less likely to adhere to medical regimens or treatment plans than Caucasians (Peek, Odoms-Young, Quinn, Gorawara-Bhat, Wilson, & Chin, 2010). As a result of poorer self-care behaviors, African Americans have poorer glycemic control than Caucasians. A meta-analysis revealed that African American adults diagnosed with diabetes have higher HbA_{1c}'s than Non-Hispanic white adults (Kirk et al, 2006). A more recent study that evaluated participants with diabetes who enrolled in a self-management clinical trial concluded that African American participants had an average HbA_{1c} of 8.14 ± 2.53 , while Caucasian participants had an average HbA_{1c} of 7.40 ± 1.71 (Hausmann, Ren, & Sevick, 2010). One reason that African Americans have poorer self-care and suboptimal glycemic control compared to Caucasians might have to do with their relationship with their physician.

Research has shown that African Americans are less happy with their physicians compared to Caucasians. A telephone survey conducted with 1816 participants revealed that African Americans report less respect, less trust, less physician responsiveness, and, overall, less positive patient-physician interactions than Caucasians (Cooper-Patrick et al., 1999). An observational study showed that African American patients showed less positive affect than Caucasian patients during their interactions with their physician (Johnson, Roter, & Cooper, 2004). In addition, coders rated physician's affective tone towards patients as less positive when

the patient was African American compared to Caucasian. Finally, according to a focus group study, African Americans diagnosed with diabetes reported that physicians are more likely to talk down to them as patients, less likely to take their symptoms seriously and are less likely to consider patient treatment preferences in comparison to Caucasian patients (Peek et al., 2010). In comparison to Caucasians, African Americans see physicians who have lower levels of expertise and fewer years of training (Johnson et al., 2004). The negative patient-physician interactions as well as distrust in the health care process may explain why African American patients are less satisfied with the health care system compared to Caucasian patients.

One reason for the racial discrepancy in physician satisfaction might be that African American patients are less likely than Caucasian patients to participate in the health care process. In-depth interviews conducted with 24 African American persons diagnosed with diabetes revealed that African Americans perceive that physicians are less likely to explain test results to them compared to Caucasians (Peek et al., 2010). African Americans also said that they were less likely to consult or question the authority of a physician and were less likely to share their symptoms or health concerns. There are observational data to support the idea that physicians interact with African Americans and Caucasians differently. One observational study showed that physicians were more verbally dominant when their patients were African American than Caucasian (Johnson et al., 2004). Physicians talked 43% more than African American patients compared to 24% more than Caucasian patients.

Another key to patient satisfaction is “cultural competence.” A physician’s level of cultural competence is assessed by the physician’s knowledge of patient culture, the physician’s attempt to understand patient culture, and the level at which physicians understand customs and/or values of a patient’s medical choices (Paez, Allen, & Cooper, 2009). In a cross-sectional study of 123 patients who were seen by 26 different physicians, those who saw more culturally

competent physicians were more satisfied and reported greater seeking and sharing of information with their healthcare provider (Paez et al. 2009). However, according to personal patient anecdotes, not all physicians are culturally competent, which could result in ethnic minorities experiencing greater communication difficulties than Caucasians (Peek et al., 2010). Overall, African American patients rated their physicians as being less engaging compared to Caucasian patients (Cooper-Patrick et al. 1999).

These racial discrepancies in interactions with physicians could be important because patient engagement in the health care process leads to better health outcomes (Lee & Emanuel, 2013). Patient-centered care recognizes and customizes a patient's health care process according to the patient's needs, resources and preferences, and is clearly linked to better health outcomes (Stewart et al. 2000). Physicians fostering patient-centered care aim to get patients engaged and invested in their own health care process. An observational study that involved third-year medical students revealed that patient-centered care was more strongly associated with an improvement in physician behavior among African American patients than Caucasian patients, which may play a role in reducing health care disparities (Beach, Rosner, Cooper, Duggan, & Shatzer, 2007). A study of 51 African Americans with diabetes showed that shared decision-making between patient and physician regarding diabetes treatment was associated with greater diabetes self-efficacy, enhanced self-care behaviors, and overall improved health (Peek et al., 2010). Thus, one way to reduce racial disparities in health between African Americans and Caucasians is to involve African Americans more in the health care process.

The purpose of this study is to examine race differences in patient satisfaction with physicians and diabetes self-care. We hypothesized that African Americans would be less satisfied with their physicians than Caucasians, and that African Americans would have lower levels of self-care than Caucasians. We expected that aspects of the patient-physician

relationship would explain these race differences in self-care. The first aspect of the patient-physician relationship that we anticipated would be associated with patient self-care behaviors was patient expectations of their physician. We hypothesized that African American participants would expect less communication, health promotion, and appreciation from physicians compared to Caucasians. We also examined patients' desire for both information from and involvement with their physicians, evaluating how these desires can impact actual involvement and shared-decision making among African Americans and Caucasians with diabetes. We hypothesized that Caucasians would reveal a greater desire for knowledge and involvement in their health care process than African Americans. We also hypothesized that a greater desire for involvement and information would be associated with more shared-decision making and better health outcomes, but that this relation would be stronger for Caucasians than African Americans. By identifying these factors and their respective associations, the health care process can be adjusted, resulting in a reduction of racial disparities in diabetes management among persons with diabetes.

Method

Participants

Participants were recruited at the Senior Expo in Washington, Pennsylvania; at the Diabetes Expo in Pittsburgh, Pennsylvania; and Mt Ararat Baptist Church in Pittsburgh, Pennsylvania. Recruited participants had to have been diagnosed with diabetes and at least 18 years of age. This study consisted of 99 adults diagnosed with type 1 ($n = 18$) or type 2 ($n = 77$) diabetes. Participant ages ranged from 26 to 86 with a mean of 60.32 years ($SD = 10.68$). The sample consisted of African American ($n = 45$) and Caucasian ($n = 52$) adults; the majority of participants were women (69%).

Procedure

Participants were asked to complete a 15-20 minute questionnaire. In return, participants received \$20 for their time.

Instruments

The questionnaire evaluated patient expectations in a healthcare setting, actual patient involvement in the healthcare process, patient desire for involvement, collaborative healthcare, patient satisfaction with the healthcare process, diabetes knowledge, and self-care behaviors.

Demographic variables. Participants were asked questions regarding their age, sex, race, education, income, employment status, diabetes type, diabetes length, and medication.

Expectations of patient-physician relationship. Patient expectations were measured with the Consultation Questionnaire (Little et al., 2001). The questionnaire measured patient expectations in regard to communication (4-items: Cronbach's alpha = .92), health promotion/prevention (2-items: $r = .82, p < .001$), and appreciating the whole person (1 item). Participants responded on a 6-point scale to indicate the extent to which they agreed or disagreed with each item (1 = completely disagree, 6 = completely agree).

Actual patient-physician relationship. We adapted the Consultation Questionnaire (Little et al., 2001) to assess the actual patient-physician relationship. The adapted version of the Consultation Questionnaire evaluated what the healthcare provider actually does rather than what the patient expects them to do. We used the same three scales: communication (4-items: Cronbach's alpha = .87), health promotion/prevention (2-items: $r = .72, p < .001$), and appreciating the whole person (1 item). Again, participants indicated on a 6-point scale the extent to which they agreed or disagreed with each item (1 = completely disagree, 6 = completely agree).

Discrepancy between expectation and receipt. We computed the discrepancy between patient-physician relationship expectations and actual patient-physician relationship scores on the Consultation Questionnaire described above. Discrepancy scores were calculated in relation to communication, health promotion/prevention, and appreciation. Patient discrepancies evaluated the extent to which patient expectations are met by what actually occurs. Lower discrepancy scores indicated a greater extent to which patient expectations were met.

Patient desire for involvement. Two scales were used to measure patient's desire for involvement. First, patient desire for choosing a treatment plan was measured with one item from the Krantz Health Opinion Survey (Krantz, Baum, & Wideman, 1980) Information subscale: "I'd rather be given choices about what's best for my health than to have the doctor make the decisions for me." Participants indicated on a 5-point scale whether they agreed or disagreed with the item (1 = strongly disagree, 5 = strongly agree). Second, we used seven items from the 23-item Autonomy Preference Index that assesses the extent to which a participant desires information regarding test results and treatment information, independent decision-making, and physician decision-making (Ende, Ash, & Moskowitz, 1989). The scale evaluated preference for personal autonomy in decision-making (4-items: Cronbach's alpha = .49) and personal autonomy in information-seeking (3-items: Cronbach's alpha = .80). The decision-making preference subscale was further divided into doctor decision-making preference (2-items: $r = .63$, $p < .001$) and patient autonomous decision making preference (2-items: $r = .41$, $p < .001$). Participants responded on a 6-point scale to indicate the extent to which they agree or disagree with each item (1 = completely disagree, 6 = completely agree). Thus, in total there were four measures of desire for involvement.

Collaborative healthcare. Collaborative healthcare was assessed with three items from the 9-item Shared Decision Making Questionnaire (Kriston, Scholl, Holzel, Simon, Loh, &

Harter, 2009). These items were: “My doctor and I always thoroughly weigh different treatment options”, “My doctor and I always select a treatment option together”, and “My doctor and I always reach an agreement on how to proceed” (Cronbach’s alpha = .71). Participants indicated how much they agreed or disagreed with each item on a 6-point scale (1 = completely disagree, 6 = completely agree).

Patient satisfaction. Satisfaction was assessed with 4 items (Cronbach’s alpha = .79) from the Patient’s Level of Satisfaction survey (Cooper-Patrick et al., 1999). These items assessed patient satisfaction regarding his or her overall healthcare, physician’s technical skills, physician’s personal manner, and physician explanation of patient treatment and disease. Participants responded on a 4-point scale to indicate the extent to which they were satisfied with each item (1 = not at all satisfied, 6 = very satisfied).

Self-care behaviors. Diabetes-related self-care was assessed with a 12-item (Cronbach’s alpha = .79) shortened version of the Summary of Diabetes Self-Care Activities Measure (Toobert, Hampson, & Glasgow, 2000), which assesses self-care with respect to diet (5-item: Cronbach’s alpha = .68), exercise (3-item: Cronbach’s alpha = .88), testing (2-item: $r = .79, p < .001$), and medication (2 items—insulin and oral medication; does not make sense to evaluate the correlation because most people answer only one of the two items). In this study, both overall self-care behaviors and self-care for each of the four domains were examined.

Diabetes knowledge. Diabetes knowledge about exercise, blood sugar levels (2 items), HbA_{1c}, and symptoms was examined with five true or false questions that were developed for this study. Participants indicated whether they thought each item was true, false, or unsure. Participants received one point for a correct response and zero points for answering a question incorrectly or if they were unsure. Scores can range from 0-5, with higher numbers indicating a greater level of diabetes knowledge.

Results

Race Comparisons

The primary focus of this study was to identify differences between Caucasian and African American participants in aspects of the physician relationship and self-care. We hypothesized that African Americans would have lower physician expectations, desire for involvement, collaborative healthcare, knowledge, and self-care behaviors than Caucasians. However, we hypothesized that African Americans will have higher levels of satisfaction with their health care situation than Caucasians.

Patient expectations of patient-physician relationship. There were no race differences in expectations in physician communication or physician appreciation domains. However, there was a trend indicating that African Americans ($M = 5.91$; $SD = .22$) had higher expectations than Caucasians ($M = 5.68$; $SD = .83$) in physician health promotion/prevention, $F(1, 95) = 3.22$, $p = .08$.

Actual patient-physician relationship. Similar to patient expectations, there were no race differences in actual patient-physician communication or patient-physician appreciation. However, a marginal race difference existed in the actual patient-physician health promotion/prevention domain: African Americans ($M = 5.54$; $SD = .90$) had higher levels of actual patient-physician health promotion/prevention than Caucasians ($M = 5.21$; $SD = .91$), $F(1, 95) = 3.27$, $p = .07$.

Discrepancy between expectation and receipt. When discrepancy scores between expectations and receipt were examined, there were no race differences in whether physicians met patient expectations for any of the three domains—communication, health promotion/prevention, or appreciation.

Desire for involvement. There were no race differences in participant desire for involvement in the healthcare process. African American and Caucasian participants displayed similar scores in the desire to choose a treatment plan. There were also no race differences in preference for physician decision-making, personal autonomy in decision-making, and personal autonomy in information-seeking.

Collaboration. There were no race differences in participant collaborative healthcare situations.

Satisfaction. There were no race differences in overall physician satisfaction. Patient satisfaction scores were high for both African American ($M = 3.50$; $SD = .56$) and Caucasian ($M = 3.46$; $SD = .50$) participants.

Self-care behaviors. Although there were no race differences in overall self-care, African American participants ($M = -.19$; $SD = .94$) were less likely than Caucasian participants ($M = .21$; $SD = .90$) to test their blood sugar levels, $F(1, 95) = 4.48, p = .04$, and were less likely ($M = -.05$; $SD = .86$) than Caucasian participants ($M = .27$; $SD = .69$) to take their diabetes medication, $F(1, 95) = 4.72, p = .05$.

Knowledge. There were no race differences in level of diabetes-related knowledge.

Relation of Predictor Variables to Outcomes

We predicted that there would be race differences in self-care and expected that race differences in the patient-physician relationship would explain any observed race differences in self-care behavior. However, there were no race differences in any aspect of the physician relationship and no race differences in the overall self-care index. Thus, we turned our attention to examining whether aspects of the physician relationship would be related to three outcomes: physician satisfaction, self-care behavior and diabetes knowledge. We hypothesized that higher expectations of physicians to communicate, appreciate, and promote health/prevention would be

related to lower levels of satisfaction. We hypothesized that lower discrepancies between expectation and receipt of physician communication, patient appreciation, and health promotion/prevention would be associated with higher levels of satisfaction. We hypothesized that participants with a greater desire for involvement in their health care situation would exhibit higher levels of overall satisfaction, better self-care behaviors, and greater diabetes knowledge. We also hypothesized that patients who engage in a more collaborative health care situation with their physician will exhibit higher levels of patient satisfaction, self-care behaviors, and knowledge.

Satisfaction. None of the three domains of patient expectations were related to physician satisfaction. Not surprisingly, the discrepancy between expectation and receipt was related to physician satisfaction—lower satisfaction was associated with greater discrepancies in communication, $r = -.55, p < .001$; health promotion/prevention, $r = -.50, p < .001$; and appreciation, $r = -.49, p < .001$. Desire for patient involvement was not related to overall patient satisfaction regardless of the desire for involvement measure—desire for involvement in choosing a treatment plan, autonomous decision-making preference, physician decision-making preference, and information-seeking preference. However, a more collaborative health care situation was linked to greater levels of patient satisfaction, $r = .56, p < .001$.

Self-care behaviors. Patient expectations as well as discrepancy scores across all domains—communication, health promotion/prevention, and appreciation—were unrelated to self-care behavior. Autonomous decision-making preference, physician decision-making preference, and desire for involvement in choosing a treatment plan were unrelated to overall self-care. However, personal autonomy in information-seeking was marginally related to better overall self-care behaviors, $r = .17, p = .09$. When analyzing specific domains of self-care, personal autonomy in decision-making was marginally related to better exercise self-care

behaviors, $r = .18$, $p = .07$, and personal autonomy in information-seeking was significantly related to better diet-related self-care behaviors, $r = .23$, $p = .02$. Patients who engaged in a more collaborative health care situation had marginally better self-care behaviors $r = .17$, $p = .10$.

When self-care for each of the four domains were examined, a more collaborative health care situation was associated with a better self-care behavior in the exercise domain, $r = .26$, $p = .01$.

Knowledge. Patient expectations and discrepancy scores across all domains were not linked to diabetes-related knowledge. Similarly, personal autonomy in decision-making, desire for involvement when choosing a treatment plan, and personal autonomy in information-seeking were unrelated to patient knowledge. However, physician decision-making preference was related to lower diabetes-related knowledge scores. The more participants wanted their physician to make treatment/health care decisions, the less the participant knew about diabetes, $r = -.32$, $p < .001$. Finally, the extent to which a patient engaged in a collaborative health care situation was unrelated to their diabetes-related knowledge.

Race Differences in Predictor Variables to Collaborative Care and Outcomes

Collaboration. As shown in Table 1, greater preference for personal autonomy in decision-making and preference for physician decision-making were associated with a more collaborative health care situation among Caucasians but not African Americans.

Self-care behaviors. Higher levels of personal autonomy in information-seeking was associated with better self-care behaviors for Caucasians but not for African Americans. Similarly, more diabetes knowledge was associated with better overall self-care behaviors for Caucasian participants but not for African American participants.

Knowledge. A greater preference for personal autonomy in decision-making was correlated with lower diabetes knowledge for Caucasians, but not for African Americans.

However, a greater preference for personal autonomy in information-seeking was associated with less diabetes knowledge for African Americans but not for Caucasians.

Relations among the Outcome Variables

Patient satisfaction was unrelated to diabetes knowledge and overall self-care behaviors. However, when considering the different domains of self-care, higher patient satisfaction was associated with better self-care behavior in the exercise domain, $r = .23, p = .03$. Diabetes-related knowledge was significantly related to better overall self-care behaviors, $r = .23, p = .02$.

Discussion

Race Differences

There were no race differences in any aspect of the patient-physician relationship with the exception of marginal differences in health promotion/prevention expectations and actual patient-physician health promotion/prevention. African Americans had greater expectations for health promotion/prevention information and then received more health promotion and prevention information than Caucasians. These differences were opposite of our prediction that African American participants would have lower expectations of their physician than Caucasian participants. African Americans may have physicians who give more advice about health promotion and prevention than Caucasians because of their poorer self-care behaviors. The findings from this study are consistent with previous research that has shown African Americans engage in poorer self-care behaviors than Caucasians (Peek et al., 2010). A possible reason for the lack of race differences in other aspects of the patient-physician relationship could be that differences in the patient-physician relationship stem from socioeconomic status rather than race. Previous research has indicated that socioeconomic status moderates the relation between race and the physician's perceptions of the patient (Van Ryn & Burke, 2000). Physicians rated African Americans and patients with a lower socioeconomic status as less intelligent, having

more negative personality characteristics, and less compliant with cardiac rehabilitation compared to Caucasians and patients with a higher socioeconomic status. Future research should examine whether race differences in the patient-physician relationship are due to socioeconomic status.

Although there was no overall race difference in the self-care index, race differences appeared on two of the four domains of self-care. As expected, African Americans participants were less likely to test their blood glucose levels and regularly take their medication compared to Caucasian participants. These findings are problematic because poor self-care behavior is related to poorer glycemic control and poorer health outcomes overall. Research has shown that African Americans have more diabetes-related complications than Caucasians (Hausmann et al., 2010), and self-care behavior may be one reason. One potential explanation for poorer self-care on the part of African Americans could be patient trust in the physician. African American participants are less likely to trust their physician than Caucasian participants (Ebony Boulware, Cooper, Ratner, LaVeist, & Powe 2003). Future research should examine the extent to which race differences in physician trust contributes to race differences in self-care.

Patient Satisfaction

Neither patient expectations about what a physician should do nor patient reports of what the physician actually does predicted patients' satisfaction with their physician. Instead, lower discrepancies between expectations and receipt were associated with higher satisfaction scores. Therefore, the extent to which the physician meets a patient's expectations is indicative of how satisfied the participant is with his or her health care situation.

One aspect of the patient-physician relationship that was associated with patient satisfaction was collaborative care. The more collaborative participants viewed their health care, the more satisfied they were with their physician. Patients may be happier with physicians with

whom they can collaborate because it allows them to exercise more control over their health care situation. Other research has linked a patient's perception of control to higher levels of patient satisfaction (Hanna, Gonzalez-Fernandez, Barrett, Williams & Pronovost, 2012). Future research should investigate whether perceived control is a mediator of the relation between collaborative care and patient satisfaction with physicians.

It is important to consider factors that influence patient satisfaction with the physician because satisfaction may be linked to how well patients adhere to physician advice. In this study, patient satisfaction was linked to the exercise domain of self-care. The more satisfied patients were with their physician, the more they exercised. Exercise is an important area of diabetes management because it influences weight loss and blood glucose levels, which can help to reduce complications of diabetes.

Self-Care Behavior

There were a number of variables that were associated with self-care behavior in this study and they all had to do with patients' desire for and actual involvement in the health care process. The extent to which both the patient and physician worked together to come up with a treatment plan was also linked to better self-care behaviors. One domain of autonomy in the health care process—personal autonomy in information-seeking—reflects people's desires to know more about their current condition, test results, and other information regarding their disease. This autonomy variable was linked to better self-care. One potential explanation for this association is patient knowledge. When patients seek to gain more information regarding their disease and its treatment, they are more likely to be informed on how they can better manage their disease. And, as discussed next, greater knowledge is associated with better self-care.

Diabetes-Related Knowledge

There was only one aspect of the physician relationship that was associated with diabetes knowledge and it had nothing to do with participants' own personal involvement in the health care process. Instead, people who preferred that their physicians handle their disease had lower levels of diabetes knowledge. As a result of their lack of knowledge, patients may be less confident in their ability to make the right decisions regarding their health care situation. Future research should investigate the directionality of this relation—whether it is the patient's preference for the physician to make decisions that leads him or her to have less knowledge, or whether less knowledge leads the patient to want physicians to take control of the healthcare process. It is possible that the relation is reciprocal.

Diabetes knowledge is an important outcome because it was related to better self-care. Knowledge may be related to good self-care behavior because it increases self-efficacy—that is, feeling that one is able to take care of diabetes. Knowledge can induce a sense of personal control. The more people know about their disease, the more they know how to control it; thus inducing a greater sense of self-efficacy. In fact, previous research has suggested that health-related knowledge is linked to self-efficacy (Rabiei, Sharifirad, Azadbakht, & Hassanzadeh 2013). People who have higher levels of knowledge may feel more confident about making health-care decisions, and thus, take better care of their diabetes.

Race Differences in Implications of the Patient-Physician Relationship for Outcomes

We also examined whether the relations between the physician relationship and outcomes was dependent on race. The extent to which participants desired involvement in their health care situation (either by themselves or physicians) was related to greater patient-physician collaboration among Caucasian participants but not African American participants. African Americans may be more intimidated by their physicians; thus, the extent to which they

collaborate with their physician may depend more on whether the physician desires collaboration than the patient's desire for involvement. According to in-depth interviews from previous research, African Americans are less likely to consult or question the authority of a physician (Peek et al., 2010). This fear of authority may cause African Americans to shy away from treatment collaboration regardless of their desire for personal or physician involvement in their health care situation.

Desire for information was related to better self-care behaviors among Caucasians but not African Americans. It may be that physicians explain medical exam results to Caucasians better than they do to African Americans. A study focusing on socioeconomic status and race indicated that physicians perceived Caucasian patients as being more intelligent than African American patients. (Van Ryn & Burke, 2000). A physician's perception of his or her patient's intelligence may influence the extent to which the physician explains medical exam results. And, a clearer explanation may influence how patients take care of themselves. In this study, Caucasians with greater knowledge about diabetes took better care of their diabetes, but this relation did not exist for African Americans. The ability to apply knowledge to medical exam results may be indicative of how patients manage their diabetes.

Participants who desired greater information appeared to have less knowledge about diabetes in the case of African Americans but not Caucasians. Instead of greater desires for information leading to less knowledge, it may be that African Americans with less knowledge about diabetes may desire more information regarding their disease in order to learn more about their condition. Future research should conduct longitudinal studies in order to determine the directionality of these associations.

Conclusion

Although we did not find many race differences in the patient-physician relationship, we did find that aspects of the patient-physician relationship were associated with how well participants managed their diabetes and how satisfied participants were with their health care situation. People who were more satisfied with their health care situation had physicians whose practice aligned with their expectations and physicians who consulted with them on a treatment plan. Participants who better managed their diabetes knew more about their diabetes, preferred to be involved in the management of their diabetes and collaborated more with physicians about their treatment plan. The extent to which both the patient and physician work together on a treatment plan is an important aspect of the patient-physician relationship because it is associated with how satisfied patients were with their health care situation and how well patients manage their diabetes.

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Table 1

**Relations of Desire for Involvement and Information to Collaborative Care and Self-Care
for Caucasians and African-Americans**

	Collaborative Care		Self-Care		Diabetes Knowledge	
	African American	Caucasian	African American	Caucasian	African American	Caucasian
Personal Autonomy in Decision-Making	.11	.26 ⁺	.16	-.05	-.07	-.30*
Physician Decision-Making Preference	.05	.28*	.07	-.07	-.29 ⁺	-.32*
Personal Autonomy in Information-Seeking	-.02	.16	-.08	.28*	-.41**	.11
Diabetes Knowledge	.23	-.12	.05	.33*	-	-

Note: ⁺ $p < .10$; * $p < .05$; ** $p < .01$, *** $p < .001$