Do patient autonomy preferences matter? Linking patient-centered care to patient–physician relationships and health outcomes

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Autonomy preferences
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ABSTRACT

As health care systems seek to provide patient-centered care as a cornerstone of quality, the link between patient-centeredness and patient outcomes is a concern. Past research reveals inconsistent findings regarding the impact of patient-centeredness on patient outcomes, and few studies have investigated the factors that moderate this relationship. Most studies have used self-rated outcomes on a cross-sectional basis, even though most patient care is inherently longitudinal. The current study extends past research by examining the theoretical and empirical relationships between patients’ perceptions of autonomy support and autonomy preferences with regard to their health outcomes. We hypothesized that autonomy preferences moderate the positive relationships between perceived autonomy support and patient–physician relationships, and on self-rated and objective health outcomes such that the relationships are more positive when patient autonomy preferences are high. Data were collected 3 times over a one-year period from a sample of 614 patients with type 2 diabetes in Taiwan. The results revealed strong support for the hypothesized relationships between perceived autonomy support and patient trust, satisfaction, and mental health-related quality of life (HRQoL) after adjusting for baseline scores; however, the direct link between autonomy support and patients’ glycemic control was not significant. Specifically, patients with high decisional preference experienced a greater increase in subsequent trust and satisfaction than patients with low decisional preference. Further, patients with high information preference had a higher level of satisfaction over time than patients with low information preference. In addition, it was found that perceived autonomy support improved both physical and mental HRQoL but only if combined with high levels of information preference. This study provides evidence of a contingency perspective of the relationship between patient autonomy support and outcomes. By recognizing the uniqueness of each patient’s autonomy preferences, healthcare practitioners can increase the efficiency of patient-centered care and improve patient outcomes.

Introduction

Globally, the patient–physician relationship has transitioned from being a paternalistic one to a patient-centered one. Bensing (2000) and Mead, Bower, and Hann (2002) have summarized the issues related to patient-centeredness and distinguish four common elements in this regard: being attentive of patients’ psychosocial as well as physical needs, enabling the disclosure of patients’ concerns, conveying a sense of partnership, and actively facilitating patient involvement in decision making. By specifying human needs, the concept of autonomy support of physicians can be viewed as an orientation related to patient-centeredness in that in order to be autonomy supportive it is necessary for the practitioner to elicit and acknowledge patient perspective, to support patient initiatives, and to avoid being controlling of the patient (Williams, McGregor, King, Nelson, & Glasgow, 2005). Although existing research emphasizes support for increasing patient autonomy, empirical evidence for the role of patient-centered care in patient outcomes is mixed (Mead & Bower, 2002). For example, certain studies indicate that patient-centered care is associated with patient satisfaction (Mallinger, Griggs, & Shields, 2005), treatment adherence (Kahn, Schneider, Malin, Adams, & Epstein, 2007), and health status (Arora, Weaver, Clayman, Oakley-Girvan, & Potosky, 2009). On the other hand, there are studies that report that there is no relationship or there is a negative relationship between patient-centeredness and health outcomes (Kinmonth, Woodcock, Griffin, Spiegel, & Campbell, 1998) and patient...
satisfaction (Mead et al., 2002). In spite of these discrepant findings, researchers have only very recently begun to investigate the conditions under which patient-centered care leads to positive patient outcomes (Conboy et al., 2010).

Interestingly, although researchers have suggested two independent dimensions of patient-centeredness—the control and content dimensions (Bensing, 2000)—patient-centered care is also occasionally defined as a particular style of communication used generally with all patients. It is argued that “patient-centered” is conceived in contrast with “doctor-centered” and only deals with control over consultation (Smith & Hoppe, 1991). Several researchers indicate that a patient-centered style is one in which the physician engages patients in active discussion and avoids being judgmental of the patient (Holmström & Röing, 2010; Krupat, Bell, Kravitz, Thom, & Azari, 2001). However, patients’ preferences regarding the degree of involvement in their care are highly variable; some patients prefer active participation in discussions on treatment options while others may wish to rely entirely on their physicians to make decisions on their behalf (Swenson et al., 2004). Therefore, rather than advocating a particular approach to patient care, other researchers emphasize the importance of flexibility in the decision making process so that individual differences in patient preferences are respected (Charles & Gafni, 1999; Ryan & Sykko, 2007). This situationally-determined view reveals a contingency perspective relationship between patient-centered care and patient outcomes.

This study will make three important contributions to existing literature. The initial aim is to extend the previously-addressed question of “Does patient-centered care matter?” in existing literature to “When does patient-centered care matter more?” Although Kimmornth et al. (1998) have investigated the effect of patient-centered care on diabetes control, past research has relied primarily on self-rated measures of health outcomes. In this study, we use the self-determination theory as the basis for proposing that patient-centered care is associated with both objective and self-rated health outcomes. Finally, previous research on similar topics was primarily cross-sectional (Cveengros, Christensen, Hillis, & Rosenthal, 2007; Krupat et al., 2001); however, patient care is inherently longitudinal. The longitudinal design of this study contributes significantly to our ability to examine these relationships (Fig. 1).

Perceived autonomy support and patient outcomes

Based on self-determination theory, the basic psychological needs for autonomy are essential to personal well-being and intrinsically motivated behavior is inherently endorsed (Ryan & Deci, 2001). Trust in physicians is likely to be enhanced among patients who report that their physicians make an effort to understand their individual experiences, communicate clearly and completely, and share power (Thom & Campbell, 1997). Physicians who are supportive of their patients’ self-determination are likely to gain more trust from patients. By fulfilling the inherent need for autonomy among individuals, patients’ perception of autonomy support may also foster satisfaction with physicians.

Hypothesis 1. Perceived autonomy support is positively associated with patients’ trust (1a) and satisfaction (1b) with their physicians

By improving the appropriateness of their advice and adapting treatment regimens with patients’ lifestyles, physicians who support patients and actively involve patients in making decisions are likely to be more successful in securing patient cooperation (Kahn et al., 2007). Past research, guided by the self-determination theory, revealed that patients’ perceptions of their physicians’ autonomy support increased perceived competence and medication adherence (Williams et al., 2005), thereby leading to better illness control. Similarly, adhering to shared treatment decision making to achieve patients’ expected health goals and enhance their perceived control in disease management are likely to have positive effects on patients’ HRQoL (Arora et al., 2009).

Hypothesis 2. Perceived autonomy support is positively associated with patients’ self-rated and objective health

Fig. 1. A conceptual model of the relationships among perceived autonomy support, autonomy preferences, and patient outcome. We assessed perceived autonomy support at Time 1 and autonomy preferences at Time 2. All outcomes were measured at both Time 1 and Time 3.

The moderating role of autonomy preferences

Although self-determination theorists assert that autonomy support changes perceived competence and outcomes through increased autonomous motivation, there is reason to expect that the success of different physician styles also depends on the preferences of the patient, irrespective of how pleasing the patient-centeredness of the physician is in the consultation (Krupat, Yeager, & Putnam, 2000). By definition, a patient’s autonomy preference is the desire to control the care situation by seeking information and making decisions (Ende, Kazis, Ash, & Moskowitz, 1989). Patients’ autonomy preferences vary according to age, gender, educational level, experience of illness, and severity of disease (Ryan & Sykko, 2007; Say, Murtagh, & Thomson, 2006). Moreover, it is likely that patients with low health literacy have a limited understanding of the complex information regarding treatments, and this illiteracy is a barrier to their participation in making decisions (Edwards, Davies, & Edwards, 2009). Certain patients possess consumerism traits; however, others may be not interested in obtaining detailed information and may be content to leave the decision making to the physician (Marzuk, 1985).

In a dynamic interaction, similar attitudes of patient involvement may be perceived as rewarding and cause patients to evaluate their physicians more positively. For example, researchers have found that the fit between physicians’ style and patients’ orientation influences patient satisfaction and trust (Krupat et al., 2001). Moreover, other studies found that the key factor influencing patients’ satisfaction is the relationship between their preferred involvement in decision making and their actual level of involvement, irrespective of who the actual decision-maker is (Lantz et al., 2005; Vogel, Leonhart, & Helmes, 2009). Accordingly, the following hypothesis is proposed.

Hypothesis 3. Patient autonomy preferences will moderate the positive relationship between perceived autonomy support and trust (3a) as well as between perceived autonomy support and satisfaction (3b) such that the relationships are more positive when patient autonomy preferences are high.
It must be noted that autonomy support may not foster perceived competence and patient adherence equally. A high level of desire for autonomy by the patient may further enhance the appropriateness of the treatment regimen and render these effects more likely. In healthcare consultations, successful information exchange and shared decision making are also strongly influenced by the patient’s basic motivation to seek and engage with information (Edwards et al., 2009). Previous studies have suggested that higher patient-physician concordance of expectations regarding the consultation process and beliefs regarding personal control over health-related outcomes is associated with better medical adherence (Cvengros et al., 2007).

Hypothesis 4. Patient autonomy preferences moderate the positive relationship between perceived autonomy support and health outcomes such that the relationship is more positive when patient autonomy preferences are high.

Data and methods

Data sample and participants

In this study, we examined longitudinal data from a sample of patients with type 2 diabetes selected from one medical center, one regional hospital, and one district hospital in Taiwan; the medical center and district hospital are public hospitals. In particular, the district hospital also functions as a veterans’ hospital that provides war veterans and their families with medical services. These three facilities were selected in order to include a variety of patients from different social and economic backgrounds; this would also provide a relatively realistic picture of patients undergoing routine treatment in various outpatient facilities. Patients participating in the study were assessed at three time points: baseline (Time 1), 4-month (Time 2) and 12-month (Time 3) visits. The methodology and materials used for the study were reviewed and approved by the: Institutional Review Board of Kaohsiung Veterans General Hospital; written consent was obtained from each patient prior to enrollment.

Procedure

The data used in this study were obtained from self-administered questionnaires and medical records of sampled patients. In order to handle a potential literacy problem, one-on-one interviews were conducted with all patients by trained research assistants. Three research assistants enrolled patients for the study during a one-year period on days when patients with type 2 diabetes were scheduled for clinic appointments. In order to determine potential eligibility, the assistants screened daily appointment lists and medical charts of patients. The eligibility criteria included patients who had been diagnosed with type 2 diabetes for over a year, were taking at least one anti-diabetic medication, and were at least 18 years of age. Further, only patients who had previously visited the same physician in the clinic within the past 6 months of the index study visit were considered for study enrollment. In order to minimize response bias, patients were approached outside clinic premises. All patients were assured that participation was entirely voluntary and that their responses would not be accessible to their physicians. A total of 700 patients met the eligibility criteria and were identified for participation in the study. Between March 2006 and 2007, 614 (87.7%) participants responded and were recruited for the study. The actual participants were similar to those who refused to participate in terms of education, duration of diabetes affliction, and HbA1c level; however, actual participants were significantly older (59.32 vs. 57.06 years old, p < .05) and a higher proportion was female (38% vs. 31%, p < .05).

All questionnaires were translated by one of the co-authors from English to Chinese using a forward translation/backward translation methodology, followed by bilingual group evaluation and consensus (Guillemin, Bombardier, & Beaton, 1993). We assessed the perceived autonomy support at Time 1. All outcomes were measured at both Time 1 and Time 3. Since patients’ desire for autonomy is a fairly stable construct that is not likely to change over short periods of time (Adams, Smith, & Ruffin, 2001), autonomy preferences were assessed at Time 2 in order to reduce the effects of common method variance (Podsakoff, MacKenzie, Jeong-Yeon, & Podsakoff, 2003). Common method variance refers to the amount of spurious covariance shared among variables because of the common method used in collecting data. For example, if the data source is self-reporting, the correlation may be due the propensity of the subject to answer similarly to multiple items even when there is no true correlation of constructs.

Control variables

Patient age, gender, educational level, and duration of diabetes were included as control variables in order to alleviate concerns of non-respondent bias and rule-out potential alternative explanations for findings. In addition, the proposed hypotheses were tested after controlling each dependent variable at Time 1 in all the analyses. For example, satisfaction at Time 3 was regressed on to satisfaction at Time 1, thereby demonstrating that increase in satisfaction over 12 months was significantly predicted.

Perceived autonomy support

The Health Care Climate Questionnaire (Williams et al., 2005) was used to measure patients’ perceptions of the degree to which their physicians were autonomy supportive at Time 1. Patients responded to 6 items on a 5-point Likert-type scale with a higher score indicating a perception of greater autonomy support from the physician managing their diabetes. A sample item is “I feel that my doctor provided me with choices and options about handling my diabetes.” The internal consistency reliability (Cronbach’s alpha) was .88.

Patient autonomy preferences

The Autonomy Preference Index (API) developed by Ende et al. (1989) was used to measure patients’ desire for autonomy. The API measures patients’ preferences for two dimensions of autonomy: the preference to be involved in decision making and the preference to obtain comprehensive information. The decision involvement preference was measured by 5-point Likert scales comprising 6 items; subjects were asked to rate their agreement with statements such as “it would be better to follow the physician’s opinion even if you do not agree.” The scale on information preference comprised 8 items; subjects were asked to rate their agreement with statements such as “the physician should explain the purpose of examination.” The internal consistency reliability for decisional preference was .66 and that for information preference was .81.

Trust in the physician

Trust among patients was measured using a scale developed by Anderson and Dedrick (1990) comprising 11 items. When rating the items, respondents were instructed to think of the physician who provided care for their diabetes. The internal consistency reliability for the Time 1 measure was .85 and that for Time 3 was .87.

Satisfaction

Patient satisfaction was measured using the Patient Visit-Specific Questionnaire developed by Davies and Ware (1991). The original scale comprises 9 items that measure patients’ overall
satisfaction with outpatient visits. For the purpose of evaluating patient’s perceptions of satisfaction with their physicians, only 5 relevant items were used. The internal consistency reliability for the Time 1 measure was .93 and that for Time 3 was .96.

Objective outcome variable

The objective health outcome was measured using glycosylated hemoglobin (HbA1C). HbA1C is the best measure of recent (previous three months) glycemic control and functions as a guide for clinical management (Goldstein et al., 2004). The laboratory test data were obtained from medical records in the 4-month period after the surveys (Time 1 and Time 3) were administered.

Self-rated health outcomes

Self-rated health status among patients was operationalized using SF-12 (version 2, standard form) (Ware, Turner-Bowker, Kosinski, & Gandek, 2002), which was developed to assess physical and mental health-related quality of life (HRQoL). Scoring for the SF-12’s mental component summary scale and physical component summary scale from the 12 questions on health is outlined in the SF-12 manual (Ware et al., 2002).

Data analyses

Table 1 presents the descriptive statistics for each construct measured in this study. The average reliability of the multiple-item measures displayed a good internal consistency of .85. We used SPSS software (version 16.0, Chicago, IL) for analyzing data in the following phases. For Hypotheses 1 and 2, multiple regression analyses were conducted in order to test the relationship between perceived autonomy support and outcomes at 12-month follow-up, adjusting for baseline outcomes. Only patients who had remained with their physician throughout the three time periods were included in the analyses. The regression model for testing Hypotheses 3 and 4 included centered scores for perceived autonomy support, decisional preference, information preference, and the product terms for trust × decisional preference and trust × information preference. In order to reduce multicollinearity, the independent variables were centered around zero (Aiken & West, 1991).

Prior to conducting the analyses, the variables were examined for accuracy of data entry and missing values. No variable had a significant number of missing values; for almost all variables, the proportion of missing values was less than one percent. In order to use all possible data and reduce the likelihood of biased estimates, imputation of missing data was conducted using an EM-based (Expected Maximization) procedure using the linear structural relations (LISREL) VIII program (Jöreskog & Sörbom, 1996).

Results

From among the 614 respondents, 84.0% (516) and 64.5% (396) completed the 4- and 12-month follow-ups, respectively. Patients who withdrew from the study over time were most commonly lost to follow-up during the one-year period. Certain participants also reported no further interest in the research subject or stated that they were too busy to continue participating in the study. Comparisons between the 396 patients who completed the study and the 218 who withdrew revealed that the group of patients who did not complete the study had a lower mean age (58.2 vs. 60.5 years old, p < .05), a lower percentage of female participants (33 vs. 43%, p < .05), and a higher HbA1C level at Time 1 (8.35 vs. 7.52, p < .01). However, the two groups did not differ significantly in terms of education, duration of diabetes, or self-rated outcomes at Time 1.

Table 1 reports the means and standard deviations of the measures used in the analyses. The average disease duration among the 614 patients was 6.75 years. The proportion of participants with an undergraduate college education or higher was 20.9%, the proportion of those with a high school education as the highest level of education was 37.2%, and the proportion of those with an elementary school education or lower were 41.9%. Perceived autonomy support ranged from moderate to high, with a mean of 80.68 and standard deviation of 15.15, which is lower than patients at Time 1 with a mean of 83.27 and standard deviation of 11.88.

Table 1

Means and standard deviations among variables.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Number/Mean Percentage/SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patient</td>
<td></td>
</tr>
<tr>
<td>1. Mean age (yrs)</td>
<td>59.32 13.36</td>
</tr>
<tr>
<td>2. Male</td>
<td>382 62.2%</td>
</tr>
<tr>
<td>3. Education</td>
<td>4.50 1.80</td>
</tr>
<tr>
<td>4. Duration of diabetes (yrs)</td>
<td>6.75 6.62</td>
</tr>
<tr>
<td>5. Perceived autonomy support (T1)*</td>
<td>76.62 15.15</td>
</tr>
<tr>
<td>6. Decisional preference (T2)*</td>
<td>27.51 13.14</td>
</tr>
<tr>
<td>7. Information preference (T2)*</td>
<td>80.68 10.96</td>
</tr>
<tr>
<td>8. Trust (T1)*</td>
<td>81.95 11.82</td>
</tr>
<tr>
<td>9. Trust (T3)*</td>
<td>83.27 11.88</td>
</tr>
<tr>
<td>10. Satisfaction (T1)*</td>
<td>84.77 16.77</td>
</tr>
<tr>
<td>11. Satisfaction (T3)*</td>
<td>85.61 17.15</td>
</tr>
<tr>
<td>12. Physical HRQoL (T1)</td>
<td>48.61 7.58</td>
</tr>
<tr>
<td>13. Physical HRQoL (T3)</td>
<td>49.48 7.56</td>
</tr>
<tr>
<td>14. Mental HRQoL (T1)</td>
<td>48.70 10.15</td>
</tr>
<tr>
<td>15. Mental HRQoL (T3)</td>
<td>50.26 10.08</td>
</tr>
<tr>
<td>16. HbA1C (T1)</td>
<td>7.96 1.77</td>
</tr>
<tr>
<td>17. HbA1C (T3)</td>
<td>7.65 1.47</td>
</tr>
<tr>
<td>Physician</td>
<td></td>
</tr>
<tr>
<td>1. Mean age (yrs)</td>
<td>48.25 9.48</td>
</tr>
<tr>
<td>2. Males</td>
<td>21 84%</td>
</tr>
<tr>
<td>3. Speciality Endocrinology and Metabolism/other specialists</td>
<td>14/11 56%/44%</td>
</tr>
<tr>
<td>4. Mean years of practice including residency</td>
<td>21.73 9.37</td>
</tr>
</tbody>
</table>

Number of patients = 396–614. Education level ranged from 1 (elementary school education) to 7 (graduate degree). T1 – Time 1 (baseline); T2 – Time 2 (4-month follow-up); T3 – Time 3 (12-month follow-up); HRQoL – health-related quality of life; HbA1C – glycosylated hemoglobin.

* Scores were linearly adjusted to range from 0 to 100.

Hypothesis 1, which proposed that perceived autonomy support would be positively related to patient—physician relationships, was tested with several sets of hierarchical regressions—one for each dependent variable—at Time 3. After controlling for age, gender, education, duration of diabetes, and corresponding baseline values at Time 1, perceived autonomy support was found to be positively related to patient trust (ΔR² = .04, β = .19) and satisfaction (ΔR² = .03, β = .21), as shown in Table 2. Therefore, Hypothesis 1 was supported.

Hypothesis 2 proposed that perceived autonomy support would have a positive impact on health outcomes. It was found that perceived autonomy support was significantly associated with self-
Two-tailed tests.

Following the recommendations of Aiken and West (1991), the nature of the interaction was determined by plotting the relationship between perceived autonomy support and patient outcomes at high and low levels of autonomy preferences (defined as +1 and –1 standard deviation from the mean). As indicated in Fig. 2, patients with high decisional preference levels exhibited stronger reactions toward autonomy support. Thus, Hypothesis 3a was partially supported. For patients with high decisional and information preference levels, there were stronger relationships between perceived autonomy support and satisfaction, thereby supporting Hypothesis 3b as illustrated in Fig. 3.

Hypothesis 4 proposed the moderating role of autonomy preferences on the relationship between perceived patient-centered care and patient health. As indicated in Table 4, the perceived autonomy support × information preference interaction term was significant for the relationship between perceived autonomy support and physical HRQoL ($\beta = .11, p < .05$) and between perceived autonomy support and mental HRQoL ($\beta = .12, p < .05$); however, it was not significantly related to HbA1c. The perceived autonomy support × decisional preference interaction term had minimal association with all health outcomes.

For patients with high information preference levels, there was a stronger relationship between perceived autonomy support and physical HRQoL (Fig. 4a), and between perceived autonomy support and mental HRQoL (Fig. 4b). Specifically, significant associations occurred only at higher information preference levels (physical HRQoL, $b = .17, t(396) = 2.18, p < .05$; mental HRQoL, $b = .27, t(396) = 3.03, p < .01$, respectively). In contrast, the relationships between perceived autonomy support and HRQoL were not significant at lower information preference levels. Collectively, these results indicated that Hypothesis 4 was partially supported.

### Discussion

The hypothesized relationships between autonomy support and patient-physician relationships were supported strongly in our
study. Patients who perceived greater autonomy support had higher trust and satisfaction ratings with regard to their physicians. The expectation that autonomy support would be linked to mental health outcomes was also supported. These results are surprisingly strong when the following facts are considered. The laboratory data and reports of patient outcomes were obtained one year after the measurement of autonomy support; therefore the effects of autonomy support are probably enduring. Moreover, the study statistically controlled for baseline outcome scores and alternative explanatory variables. Finally, our longitudinal study design minimized the potential bias of common method variance (Podsakoff et al., 2003). This study provides stronger evidence that autonomy support causes an improvement in a wide range of patient outcomes. However, the findings related to the health outcomes of autonomy support are less consistent. Although perceived autonomy support was found to predict patients’ mental health over time, it did not predict patients’ physical health or glycemic control. This finding has been corroborated in past research (Kinmonth et al., 1998). Since autonomy support affects psychological needs and psychosocial values (Ryan & Deci, 2000), it is reasonable to expect that autonomy support has stronger effects on mental health than on actual functional outcomes. It is also likely that autonomy support is indirectly related to clinical response through perceived competence, adherence, or other health behaviors (Williams et al., 2005). It must be noted that the relatively stable diabetic control in our sample (mean baseline HbA1c 7.96%, SD 1.77%) may also diminish our ability to detect a significant effect.

The primary purpose of our study was to examine whether the effectiveness of patient-centered care is specific to the individual or universal in nature. The most important finding of this study is that autonomy preferences do moderate the relationships between autonomy support and outcomes: patients with high decisional preference experienced a greater increase in subsequent trust and satisfaction than patients with low decisional preference. Further, patients with high information preference also had a higher level of satisfaction and self-rated health over time than patients with low information preference. Another point of interest is that we found that autonomy support alone may be beneficial for mental HRQoL; however, it is not sufficient to have an impact on physical HRQoL. If combined with high levels of information preference, perceived autonomy support could improve both physical and mental HRQoL. These results provide some evidence of a contingency perspective of the linkage between patient-centeredness and outcomes. As a result of the fit between patient care and their desires, patients with high autonomy preferences interpret their relationship with physicians in a more positive light. Greater desire of a patient for

![Fig. 3](image1.png)

**Fig. 3.** The moderating role of autonomy preferences in the relationship between perceived autonomy support and patient satisfaction (a) Decisional preference (b) Information preference.

![Fig. 4](image2.png)

**Fig. 4.** The moderating role of information preference in the relationship between perceived autonomy support and HRQoL. (a) Physical HRQoL (b) Mental HRQoL.

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**Table 4**

Regression results of the interactions of perceived autonomy support and autonomy preferences on health outcomes.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Physical HRQoL</th>
<th>Mental HRQoL</th>
<th>HbA1c</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Step 1 Step 2</td>
<td>Step 1 Step 2</td>
<td>Step 1 Step 2</td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sex</td>
<td>-.14 -.13</td>
<td>.02 .03</td>
<td>-.25 -.26</td>
</tr>
<tr>
<td>Education</td>
<td>-.01 -.01</td>
<td>-.02 -.02</td>
<td>.14 .14</td>
</tr>
<tr>
<td>Duration of diabetes</td>
<td>-.10 -.10</td>
<td>-.02 -.02</td>
<td>.18 .18</td>
</tr>
<tr>
<td>Outcomes at Time 1 a</td>
<td>-.36 -.36</td>
<td>-.36 -.36</td>
<td>.35 .35</td>
</tr>
<tr>
<td>Perceived autonomy supportb</td>
<td>.06 .07</td>
<td>.16 .16</td>
<td>.04 .04</td>
</tr>
<tr>
<td>Decisional preference b</td>
<td>-.27 -.26</td>
<td>-.07 -.07</td>
<td>.11 .12</td>
</tr>
<tr>
<td>Information preference b</td>
<td>-.12 -.12</td>
<td>.01 .01</td>
<td>.08 .09</td>
</tr>
<tr>
<td>Interactions</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perceived autonomy support</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>× Decisional preference b</td>
<td>.01 .02</td>
<td>.12</td>
<td>.12</td>
</tr>
<tr>
<td>Perceived autonomy support</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>× Information preference b</td>
<td>.11 .12</td>
<td>.04</td>
<td>.04</td>
</tr>
<tr>
<td>ΔR²</td>
<td>.01</td>
<td>.02</td>
<td>.01</td>
</tr>
<tr>
<td>Adjusted R²</td>
<td>20 21 21</td>
<td>.21 .21 .25</td>
<td>.26</td>
</tr>
<tr>
<td>F-value</td>
<td>10.28† 8.74‡</td>
<td>9.30† 7.45‡</td>
<td>8.62† 7.24‡</td>
</tr>
</tbody>
</table>

N = 396. Tabled values are standardized regression coefficients. *p < .05; **p < .01. Two-tailed tests.

† Each regression is controlled by the baseline outcome variable (physical HRQoL, mental HRQoL, and HbA1c, respectively).

‡ Perceived autonomy support, decisional preference, and information preference are all centered scores.
obtaining health-related information may further facilitate information exchange and patient control, thus making it more likely that the functional effects of patient-centered care are manifested. These reported interaction effects have important theoretical implications because, with the exception of the work of Conboy et al. (2010), there is little literature regarding the factors that moderate the relationship between patient-centeredness and outcomes. Our study contributes to existing literature on patient centeredness in this regard.

As the inclusion of satisfaction as the only measure of patient outcome is problematic (Epstein et al., 2005); thus, more rigorous hypothesis-testing with regard to patient-centered communication would require diverse data sources. Patient trust is conceptually distinct from satisfaction. Trust is based on perceptions regarding the physician’s motivations and has a stronger emotional component. In contrast to information preference, only decisional preference was found to moderate the positive relationship between autonomy support and trust. Our data, in fact, suggest that patients who prefer to make their own decisions trust their physicians significantly less than other patients. This result has been confirmed by previous studies (Kraetschmer, Sharpe, Urowitz, & Deber, 2004). Recent research has also identified that the advantages of patient preferences for autonomy in decision making may be reduced when the patient wants to make decisions alone (Beach, Duggan, & Moore, 2007; Schneider, Wensing, Quinzler, Bieber, & Szecsenyi, 2007). Our results indicated that increased perception of autonomy support could promote greater trust of the physician among patients with high decisional preferences. This finding implies that autonomy support may also mitigate the negative relationship between decisional preference and patient trust.

The reported interaction effects on health outcomes were not significant among patients with high decisional preference. The first possible interpretation for this indicates the difference between attitude (autonomy preferences) and behavior (active participation). The fact that patients strongly stated their desire for decision involvement does not necessitate that they frequently engage in such behaviors. A second explanation is that despite patient participation in decision making, patient information and skills may be inadequate to contribute significantly to shared decision making and ultimately clinical outcomes. In fact, patients’ knowledge and communication abilities would affect the quality of interaction with physicians in patient-centered care (Street, Gordon, & Haidet, 2007).

Intriguingly, our results indicated that perceived autonomy support had a negative relationship with decisional preference in the bivariate model, as opposed to the expected positive relationship. Past research has demonstrated that the greater the patients’ perception of their own physicians’ propensity to involve them in decision making, the more active a role the patient preferred (Say et al., 2006). Further examination of the components of autonomy preferences as defined here revealed that the direct relationship between decisional preferences and perceived autonomy support may also be either negligible or negative (Harvey, Kazis, & Lee, 1999). The scale of decisional preference employed here was designed to measure patients’ desire for autonomy in decision making in a general sense, as well as the extent to which patients prefer their doctors versus themselves to make specific management decisions. Since patient personality is strongly predictive of patient preference regarding relationships with physicians (Braman & Gomez, 2004), autonomy preferences are likely to be stable (Adams et al., 2001) and not necessarily affected by other external influences. Furthermore, it is possible that patients with high decisional preference may tend to question inadequate participation in medical care and thus perceive less support from their physicians.

In summary, our data support the situationally-determined view of patient-centeredness: enabling patients to share power and responsibility by involving them in choices to the degree that they desire. Instead of adhering to a rigid style of communication, a physician must adapt his/her participatory style to the autonomy preferences of the patient, thereby providing patient-centered care. Focusing only on the control dimension but neglecting the content dimension of patient-centeredness may reduce the efficiency of patient-centered care. Recent research indicates that the dominance of the patient’s autonomy paradigm undermines the importance that individuals place on empathy, caring, interpersonal relationships, and interdependence, thereby harming the patient–physician relationship (O’Neill, 2002; Tauber, 2003). A completely adequate conception of autonomy should bring it in line with a broader conception of autonomy that is captured by the idea that patients must be able to make decisions that reflect their most important values and commitments (Kukla, 2005; O’Neill, 2002). This implies that patients who decide to defer decision making or choose not to obtain detailed information regarding their options do not necessarily fail to exercise autonomy. Thus, patient-centered care must focus less intensely on normative thinking regarding participatory decision making as a means of respecting autonomy and pay greater attention to a broader set of ethical considerations relating to respect for patients as individuals (Entwistle, Prior, Skea, & Francis, 2008).

Limitations

In this study, a potential concern regarding sample size was generalizability. Our analyses revealed that patients who did not complete the study had poor glucose control at Time 1. This implies that our sample may have been skewed in terms of the study variables. However, on a cross-sectional basis, the results of hierarchical regressions also revealed similar autonomy support–outcome relationships. Further, it must be noted that our sample comprised relatively older patients with a lower level of education, and research has shown that older and less-educated patients prefer a more passive role in decision making (Say et al., 2006). Moreover, it appears that if the less health literate the patients are, the lesser the likelihood that they seek information and participate in decision making (Edwards et al., 2009). Another limitation is our inability to make causal inferences, a shortcoming that plagues non-experimental research. It is difficult to address causality, even in a longitudinal study. For example, patient ratings of their physicians may conflate other parts of the health care experience with the physician consultation (Epstein et al., 2005). Patient outcomes that are measured at a later time than the measurement of perceived autonomy support are significantly influenced by the outcomes prior to perceived autonomy support measurement. However, our regression analyses were performed after adjusting patient outcomes at Time 1. Although we acknowledge that it is possible for outcomes to drive perceived support, we are of the opinion that our hypothesized causal direction is much more likely in this study. Finally, our argument supporting the positive interactive effect of perceived autonomy support and autonomy preferences on health outcomes is based on the rationale that patients with high autonomy preferences take an active role in medical care. As previously indicated, the participatory decision making styles of physicians and patient participation behaviors were not measured directly in our study.

Practice implications

Providing high quality, patient-centered care is not free nor is it a purely affective process. A contingency view of the linkage between patient-centered care and outcomes may offer more insights into the efficiency of autonomy support. Although it may
not be easy for healthcare organizations to match physicians in clinical practice with patients whose role orientations are similar, it is possible for physicians to modify their participatory style to match patient preferences (Cegala & Post, 2009). This approach would first require an accurate, efficient way of identifying patient autonomy preferences. Although a number of influences on patients’ autonomy preferences have been identified, studies also suggest that inferring patient preferences from demographic variables, experience of illness, or clinical diagnosis would misclassify numerous patients (McKinstry, 2000). On the other hand, physicians do not always find it easy to predict patient expectations (Hall, Stein, Roter, & Rieser, 1999), and multiple consultations may be required to acquire such information. However, researchers have suggested that physicians could elicit patient preferences by directly asking patients (Swenson et al., 2004). All these challenges in the practice environment urge physicians to further tailor their communication in order to identify patient preferences for autonomy and, ultimately, improve patient–physician relationships and health outcomes.

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