

The association of physicians' caring attitude with patient satisfaction: an analysis of the national e-survey data

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〈초 록〉

환자의 만족도는 더 나은 의료서비스 결과물을 위한 중요 요소이기에, 환자만족도와 관련 요인에 대한 연구는 그 필요성이 대두하고 있다. 따라서, 본 연구는 의사의 환자를 향한 공감적(empathetic) 태도와 같은 잠재적 요인이 환자만족도와 어떤 연관성을 가졌는지를 분석했다. 이를 위해, 편의표본추출법을 통한 환자설문조사 자료 중 총 273,994 개의 사례들을 분석한 단면연구가 수행되었다. 연구의 독립변수 및 종속변수들은 각각 의사의 태도 및 의사와 진료소(office setting or clinic) 관련 환자만족도로 정의되었다. 연구결과에 의하면, 의사와 진료소 관련 환자만족도는 각각 100점 만점에 평균 78.08과 78.62로 나타났고 상응하는 표준편차는 각각 0.14와 0.12였다. 또한, 의사의 태도가 의사와 진료소 관련 환자만족도와 유의한 관계에 있음을 확인하였다($p < 0.001$). 의료에 대한 환자만족도를 높이기 위해서는, 의사의 공감적 의사소통 능력개발을 위한 지속적인 노력이 기울여져서 환자에 의한 의사의 공감적 태도가 인지되어 질 수 있기를 본 연구는 제언한다.

키워드: 환자만족도, 의사태도, 1차진료, 환자 보고성과

〈Abstract〉

As patient satisfaction is a crucial component of improved health care outcomes, there is a need to evaluate the relationship between physicians' attitude and patients' satisfaction. The objective of this study is to examine the relationship between patients' satisfaction and physicians' friendly and caring attitudes by using recent physician ratings by patients. Data from a cross-sectional survey using a convenience sampling was utilized to examine the relationship between physicians' attitudes and patients' satisfaction. The independent variable was the physician's attitude, and the dependent variables were patients' satisfaction with the physician and the office setting. A total of 273,994 patients in the US were included. The patients' average (standard deviation, SD) satisfaction with the physician was 78.08 (0.14), and the average (SD) satisfaction with the office setting was 78.62 (0.12) out of 100. Physicians' attitude was a significant predicting factor impacting the patients' satisfaction with the physician and the office setting ($p < 0.001$). To facilitate patients' satisfaction with healthcare, a continuous effort to develop physicians' ability to communicate in an empathetic manner should be undertaken so that patients perceive their physicians as empathetic.

Keywords: patient satisfaction, physician attitude, primary care, patient-reported outcomes

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I. Introduction

Effective patient–physician communication is a crucial component of various patient outcomes, including patient satisfaction, adherence, health–related behavior change, and symptom resolution (Beck, Daughtridge, & Sloane, 2002). A physician’s ability to empathize plays a central role in making sound communication with the patients and in developing therapeutic relationship (Neumann et al., 2012). Previous studies have been demonstrated that several physicians’ attitude–related factors were associated with patient satisfaction. For example, physicians’ confidence in communicating with patients is related to patient satisfaction (Bush, Cherkin, & Barlow, 1993). Similarly, patients’ perceptions regarding information delivery, such as explanations of procedures, were also related to patient satisfaction (Thompson, Yarnold, Williams, & Adams, 1996). In addition, one study found that physicians’ attentiveness was associated with greater patient satisfaction (Zachariae et al., 2003)

More importantly, it is critical that patients perceive their physicians as empathetic. Though there have been extensive discussions about the definite meaning of empathy, the most widely used definition of physician empathy is the one explained by Mercer and Reynolds: “the ability to: (a) understand the patient’s situation, perspective and feelings; (b) to communicate that understanding and check its accuracy; and (c) to act on that understanding with the patient in a helpful (therapeutic) way” (Mercer & Reynolds, 2002; Neumann et al., 2002). Previous studies have found positive association between empathic communication with a physician and increase in a patient’s satisfaction and enablement (Mercer, Reilly, & Watt, 2002; Roter et al., 1997). Patients’ perceptions regarding physicians’ courteousness

and friendliness were also related to patient satisfaction (Thompson, Yarnold, Williams, & Adams, 1996). Similarly, physicians’ empathy was associated with greater patient satisfaction as well as reduced emotional distress after visiting physicians (Zachariae et al., 2003). Accordingly, necessity of cultivating physicians’ empathic skills has been continuously emphasized in the literature (Garcia et al., 2013; Uhas, Camacho, Feldman, & Balkrishnan, 2008).

While many tools have been devised to evaluate physician empathy, most of them are not designed for the use in general medical settings and are not suitable for use in clinical practice, as data collection through these instruments usually requires demanding labor (Mercer, Maxwell, Heaney, & Watt, 2004; Uhas et al., 2008). Online measurement of patient satisfaction is used as a tool for collecting patients’ opinion on many aspects of healthcare environment. Online measurement is readily utilized as it is widely accessible among the US population (DrScore, 2013). Using this approach, patients’ perception of physicians’ friendliness and caring attitude was compiled. Taking online rating as a proxy measure for patients’ perception of physician empathy, a 2008 research examined the correlation with patient satisfaction (Uhas et al., 2008). This study used patient ratings from 2004 to 2006 and found strong positive relationship between patient satisfaction and a friendly and caring attitude of the physician. Additionally, this previous study established that the extent of problems reported by patients after visit were highly related to little or no expression of friendly and caring attitude by physicians. The study asserted that physicians should promote their emotional ability to empathize with their patients, and to pay attention to the specific needs and expectations of the patients to increase pa-

tient satisfaction.

While the previous study substantiated the influence of physician empathy on patient contentment, complementary investigation is needed to reflect the most up-to-date tendency of patients' perception. In the US, individuals using the Internet increased steadily from 65% in 2004 to over 80% in 2012 (ITU, 2013). Knowing that the proportion of Americans using the Internet has been increasing, online surveys are also more likely to be accessible for the patients; consequently, it will be meaningful to evaluate the relationship between physician empathy and patient satisfaction using recent survey data.

The primary objective of this study is to examine the relationship between patients' satisfaction and physicians' friendly and caring attitudes by using recent physician ratings by patients. Furthermore, this study aims to determine the influence of physicians' attitudes on patients' satisfaction with both physicians and the office settings. The secondary objective is to determine whether the proportion of patients who identify problems after visit would differ depending on the physician's attitude.

II. METHODS

1. Study Design

This study analyzed data from a validated U.S. national online cross-sectional survey (the www. DrScore. com Patient Satisfaction Surveys) database dated from 2004 to 2012 with a convenience sample method. The reliability and validity of this survey has been demonstrated in a previous study (Camacho, Feldman, Balkrishnan, Kong, & Anderson, 2009).

2. Data Sources

This survey is open to the public through the commonly used Internet search engines. Patients in some practices are encouraged to use the site as a way for clinical practices to obtain patient satisfaction feedback. The survey collects anonymous ratings of physicians in the US regarding the following 5 categories: overall care, personal information, health care information, clinic rating, and areas to improve. Like other online-based surveys, participation in this online-based survey is toward younger participants. As such, approximately only 2% of respondents were aged 65 years old or older.

3. Measures

1) Independent variables

The physician's attitude variable was defined as the physician's friendly and caring attitude using one item under the "Health Care Info" section. For the primary objective of this study, this variable ranged from 0 to 10, with higher scores representing increase in physician's friendly and caring attitude. Additionally, for the secondary objective of this study, this variable was categorized as extremely high (10), high (7-9), moderate (4-6), low (1-3), and extremely low (0).

2) Dependent variables

For the primary objective of this study, two overall satisfaction scores were defined from the DrScore data: patients' satisfaction with the physician and patients' satisfaction with the office setting. Firstly, patients' satisfaction with the physician was defined using following eight items under the "Health Care Info" section: 1) the

thoroughness of patients' exam or check-up; 2) the amount of time the physician spent with the patient; 3) how well the physician answered patients' questions; 4) physician's instructions on how to take care of the patients' illness or health condition; 5) the extent that the physician included the patient in decisions about the patients' care and treatment; 6) getting the patients' test results back in a timely manner; 7) how well the physician follows-up with any concerns the patient has; and 8) the patients' treatment success. Secondly, patients' satisfaction with the office setting was defined using following five items under the "Rate Your Clinic" section: 1) the ability to receive all of the care for the patients' illness at the clinic; 2) the ability to see health care provider when a patient wanted to be seen at the clinic; 3) receiving advice or help after office hours; 4) patient convenience such as parking and location of office; and 5) the friendliness and courtesy of the office staff. Both satisfaction scores with the physician and the office setting were summed from each item and ranged from 0 to 100. Additionally, the following eight areas, in which patients were asked to identify if anything could have been better, were used for the secondary objective of this study: 1) office staff; 2) record keeping; 3) parking and signage; 4) waiting times/areas; 5) getting appointment/seeing doctor; 6) doctor's care and communication; 7) getting information over telephone; and 8) other. These variables were extracted from the "Areas to Improve" section.

3) Covariate

Patients' demographic characteristics were described, including age group and gender from "Personal Info" section of the survey. Other

variables included were: how long patients have been coming to the office or clinic, how long patients have been seeing physicians, main reason for the most recent visit, and the type of health care provider seen. Additionally, days a patient waited to get an appointment to see a physician, minutes a patient waited before seeing a physician after arriving at the office, and time spent with a physician were assessed. Lastly, survey year was also extracted.

4. Statistical analyses

Bivariate analyses were conducted to assess the relationship between overall patients' satisfaction (satisfaction with the physician and satisfaction with the office setting) and physicians' friendliness and caring attitudes. Pearson correlation was used for continuous variables (physicians' friendliness and caring attitude and survey year), Spearman correlation was used for ordinal variables (age group, how long patients have been coming to the office or clinic, how long patients have been seeing physicians, days a patients waited to get an appointment, minutes a patient waited before seeing a physician after arriving at the office, and time spent with a physician), and point biserial correlation was used for the dichotomous variable (gender). Multiple linear regression analyses were conducted to estimate the effect of physicians' friendliness and caring attitudes on patients' satisfaction, while controlling for described covariates. Additionally, the percentage of the patients who reported problem area to improve at the visit was calculated according to the physicians' friendliness and caring attitude. The α value of 0.05 was used to test statistical significance. All analyses were performed using Stata/IC 12.1 (Stata Corp., College Station, TX, USA).

<Table 1> Characteristics of the patients in the study (n=273,994)

Characteristic	Percentage
Male	33.67
Age group	
<18	5.10
18–24	16.86
25–34	21.11
35–44	39.87
45–64	14.96
≥65	2.10
How long patients have been coming the office/clinic	
First time	17.89
<1 year	20.94
1–2 years	13.62
≥2 years	47.59
How long patients have been seeing physicians	
First time	19.02
<1 year	21.87
1–2 years	13.83
≥2 years	45.28
Main reason for the most recent visit	
Routine exam or check-up	30.47
Illness/health problem (non-emergency)	35.07
Illness/health problem (emergency)	10.72
Follow-up after surgery of procedure	10.62
Other	13.12
Type of health care provider	
Primary care	38.63
Specialty care	56.82
Not sure	4.55
Days patients waited to get an appointment to see physicians	
0–2 days	43.91
3–5 days	19.30
6 days–2 weeks	15.88
2 weeks–1 month	12.02
1–2 months	5.27
>2 months	3.62
Minutes patients waited before seeing physicians after arriving at the office	
<15 minutes	48.07
13–30 minutes	32.43
30 minutes–1 hour	11.86
>1 hour	7.64
Time spent with physicians	
<5 minutes	10.03
5–10 minutes	22.73
>10 minutes	67.24
Survey year	
2004	0.16
2005	3.86
2006	5.18
2007	6.73
2008	8.35
2009	26.78
2010	17.37
2011	14.14
2012	18.43

III. RESULTS

1. Study sample

A total of 273,994 patient satisfaction surveys were included in this study (Table 1). Most patients were female (66.33%) and aged 35 to 44 years (39.89%). Approximately half of the patients reported that they have been coming to the office or clinic (47.59%) and seeing their physicians (45.28%) more than 2 years. A plurality of patients waited 0–2 days to get an appointment (43.91%) and waited less than 15 minutes in the office before seeing their physicians (48.07%).

2. Relationship between patients' satisfaction and physicians' attitudes

Overall, patients' average (standard deviation, SD) satisfaction with the physician was 78.08 (0.14), and the average (SD) satisfaction with the office setting was 78.62 (0.12) out of 100 (Table 2). Strong positive correlations were found between patients' satisfaction with their physicians and physicians' friendliness and caring attitude ($r = 0.956$; $p < 0.001$) and between patients' satisfaction with the office setting and physicians' friendliness and caring attitude ($r = 0.911$; $p < 0.001$). In addition, Tables 2 and 3 show the relationship between patients' satisfaction and other covariates.

<Table 2> Relationship between patients' satisfaction and physicians' friendliness and caring attitudes, patient characteristics, or survey year

Characteristic	Mean of Patients' satisfaction with the physician (SD)	Mean of Patients' satisfaction with the office setting(SD)
Physicians' friendliness and caring attitude P (correlation coefficient)	78.08 (0.14) <0.001 (r=0.956)	78.62 (0.12) <0.001 (r=0.911)
Age group		
<18	75.95 (0.39)	75.79 (0.53)
18–24	76.01 (0.21)	74.31 (0.29)
25–34	77.24 (0.18)	75.55 (0.25)
35–44	81.21 (0.12)	78.75 (0.13)
45–64	86.11 (0.17)	83.99 (0.29)
≥65	84.85 (0.50)	83.14 (0.76)
P (correlation coefficient)	<0.001 ($\rho = 0.077$)	<0.001 ($\rho = 0.069$)
Gender		
Male	79.50 (0.14)	77.10 (0.20)
Female	80.41 (0.97)	78.15 (0.14)
P (correlation coefficient)	<0.001 ($r_{pb} = 0.013$)	<0.001 ($r_{pb} = 0.015$)
Survey year		
2004	NA	84.02 (1.70)
2005	76.51 (0.39)	74.58 (0.57)
2006	75.28 (0.34)	73.85 (0.50)
2007	75.70 (0.34)	73.33 (0.52)
2008	76.00 (0.28)	74.58 (0.41)
2009	77.26 (0.16)	75.91 (0.22)
2010	78.50 (0.20)	76.00 (0.29)
2011	83.99 (0.20)	80.71 (0.31)
2012	87.83 (0.15)	84.57 (0.24)
P (correlation coefficient)	<0.001 (r=0.116)	<0.001 (r=0.095)

<Table 3> Relationship between patients' satisfaction and the physician visits-related variables

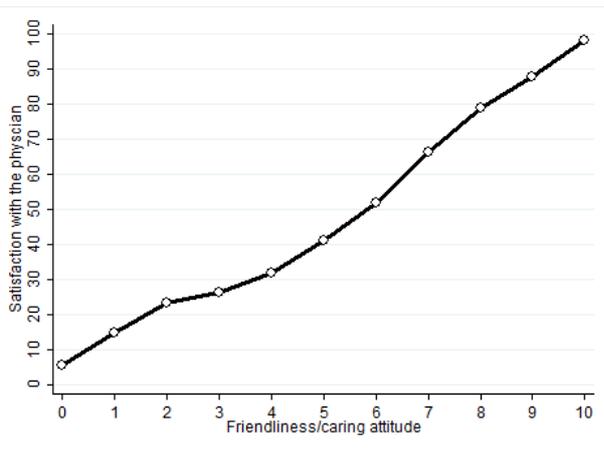
Characteristic	Mean of Patients' satisfaction with the physician (SD)	Mean of Patients' satisfaction with the office setting(SD)
How long patients have been coming the office/clinic		
First time	66,72 (0,29)	65,26 (0,36)
<1 year	73,83 (0,20)	73,08 (0,29)
1 –2 years	75,58 (0,22)	75,53 (0,30)
≥2 years	86,64 (0,09)	85,52 (0,14)
P (correlation coefficient)	<0,001 ($\rho =0,156$)	<0,001 ($\rho =0,162$)
How long patients have been seeing physicians		
First time	64,95 (0,29)	64,17 (0,35)
<1 year	73,53 (0,20)	73,10 (0,25)
1 –2 years	75,98 (0,22)	75,96 (0,29)
≥2 years	87,64 (0,08)	86,73 (0,13)
P (correlation coefficient)	<0,001 ($\rho =0,177$)	<0,001 ($\rho =0,189$)
Main reason for the most recent visit		
Routine exam or check-up	86,79 (0,11)	83,78 (0,21)
Health problem (non-emergency)	78,28 (0,14)	76,72 (0,21)
Health problem (emergency)	70,17 (0,29)	71,16 (0,37)
Follow-up after surgery	82,94 (0,22)	81,01 (0,28)
Other	74,94 (0,26)	74,70 (0,31)
P (correlation coefficient)	<0,001* (NA)	<0,001* (NA)
Type of health care provider		
Primary care	81,99 (0,11)	77,13 (1,67)
Specialty care	80,67 (0,11)	79,62 (0,12)
Not sure	51,45 (0,56)	54,83 (0,55)
P (correlation coefficient)	<0,001* (NA)	<0,001* (NA)
Days patients waited to get an appointment to see physicians		
0–2 days	88,12 (0,10)	87,22 (0,16)
3–5 days	80,73 (0,17)	82,04 (0,23)
6 days–2 weeks	74,71 (0,27)	74,84 (0,28)
2 weeks–1 month	70,02 (0,27)	68,77 (0,33)
1–2 months	64,70 (0,43)	61,39 (0,52)
>2 months	55,62 (0,55)	49,50 (0,65)
P (correlation coefficient)	<0,001 ($\rho =-0,260$)	<0,001 ($\rho =-0,318$)
Minutes patients waited before seeing physicians after arriving at the office		
<15 minutes	92,42 (0,07)	92,66 (0,10)
15–30 minutes	80,49 (0,13)	79,03 (0,19)
30 minutes–1 hour	59,59 (0,28)	57,45 (0,37)
>1 hour	35,62 (0,34)	33,06 (0,40)
P (correlation coefficient)	<0,001 ($\rho =-0,428$)	<0,001 ($\rho =-0,495$)
Time spent with physicians		
<5 minutes	24,30 (0,26)	29,69 (0,33)
5–10 minutes	64,49 (0,20)	62,92 (0,29)
>10 minutes	92,70 (0,05)	90,32 (0,86)
P (correlation coefficient)	<0,001 ($\rho =0,524$)	<0,001 ($\rho =0,523$)

Notes: *One-way ANOVA were used.

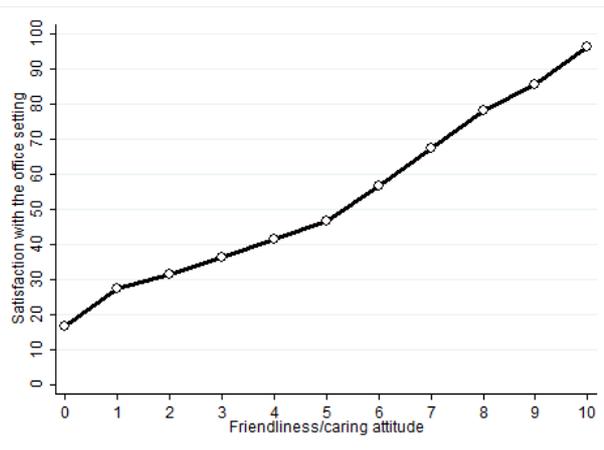
<Table 4> Regression results for patients' satisfaction with their physicians and the office setting

	Patients' satisfaction with the physician			Patients' satisfaction with the office setting		
	B (SE)	β	P-value	B (SE)	β	P-value
Physicians' friendliness and caring attitude	8.71 (0.01)	0.879	<0.001	7.03 (0.02)	0.802	<0.001
Age group	-0.02 (0.02)	-0.001	0.383	0.08 (0.04)	0.003	0.042
Gender (female vs. male)	0.05 (0.05)	0.001	0.268	0.15 (0.10)	0.002	0.016
How long patients have been coming the office/clinic	-0.02 (0.05)	-0.001	0.684	0.89 (0.09)	0.031	<0.001
How long patients have been seeing physicians	0.28 (0.05)	0.009	<0.001	-0.60 (0.09)	-0.021	<0.001
Main reason for the most recent visit						
Health problem (non-emergency) vs. routine exam/check-up	-1.05 (0.06)	-0.015	<0.001	-0.59 (0.14)	-0.008	<0.001
Health problem (emergency) vs. routine exam/check-up	-1.24 (0.09)	-0.011	<0.001	-1.16 (0.17)	-0.012	<0.001
Follow-up after surgery vs. routine exam/check-up	-0.13 (0.08)	-0.001	0.119	0.78 (0.16)	0.009	<0.001
Other vs. routine exam/check-up	-0.92 (0.08)	-0.009	<0.001	-0.31 (0.16)	-0.004	<0.001
Type of health care provider						
Specialty care vs. primary care	1.39 (0.05)	0.021	<0.001	4.20 (0.78)	0.034	<0.001
Not sure vs. primary care	-0.18 (0.13)	-0.001	0.173	0.19 (0.80)	0.016	0.014
Days patients waited to get an appointment to see physicians	-0.49 (0.02)	-0.021	<0.001	-1.24 (0.04)	-0.057	<0.001
Minutes patients waited before seeing physicians after arriving at the office	-1.74 (0.03)	-0.049	<0.001	-3.24 (0.06)	-0.097	<0.001
Time spent with physicians	3.82 (0.05)	0.075	<0.001	2.67 (0.09)	0.057	<0.001
Survey year	0.20 (0.01)	0.012	<0.001	0.11 (0.03)	0.007	<0.001
Constant	-406.96 (24.79)			-209.34 (53.82)		
R ²	0.925			0.844		
Adjusted R ²	0.925			0.844		

a. physician



b. office setting



<Figure 1> Patients' satisfaction ratings and physicians' friendliness and caring attitude

<Table 5> Proportion of patients' perceived problems according to physicians' friendliness and caring attitude

Patients' perceived problems (%)	Physicians' friendless and caring attitude				
	Extremely low	Low	Moderate	High	Extremely high
Office staff	37.38	37.96	33.37	14.72	7.03
Record keeping	26.16	20.00	15.79	4.32	1.20
Parking or signage	11.17	7.53	7.65	7.86	6.24
Waiting time/area	37.01	34.92	32.51	16.49	7.26
Getting appointments/ seeing doctor	28.55	23.81	21.09	9.86	4.31
Doctor's care/communication	89.90	84.30	62.00	9.38	0.99
Getting information over telephone	35.12	31.71	28.74	12.07	4.44
Other	40.87	30.22	24.26	8.60	3.41

Notes: Each item could be answered "yes" or "no", and each participant could answer more than one problem.

Additionally, two multiple regression models were designed to determine the influence of physicians' attitudes on patients' satisfaction with their physicians and the office setting, while controlling for covariates (Table 4). Multiple regression for patients' satisfaction with their physicians was statistically significant ($p < 0.001$). The predictor variables (physicians' attitudes and covariates) accounted for 92.5% of the variance on patients' satisfaction with their physicians. The unstandardized regression coefficient (b) for physicians' attitudes was 8.71 ($\beta = 0.879$, $t = 898.56$, $p < 0.001$), controlling for covariates. The overall multiple regression was also statistically significant ($p < 0.001$), and the predictor variables accounted for 84.4% of the variance on patients' satisfaction with their physicians, with regard to patients' satisfaction with the office setting. The unstandardized regression coefficient (b) for physicians' attitudes was 7.03 ($\beta = 0.802$, $t = 365.61$, $p < 0.001$), holding covariates constant. Thus, physicians' attitude was a significant predicting factor for patients' satisfaction. Furthermore, figure 1 also shows how patients' satisfaction increased as the scores for the physicians' attitude increased.

In addition to the physicians' attitude variable, all covariates were statistically significantly associated

with patients' satisfaction with their physicians and the office setting. However, in the multiple regression models, several covariates did not influence patients' satisfaction. For example, although older age and female subgroups were correlated with higher satisfaction scores, age and gender category as whole were not significant factors influencing patients' satisfaction with their physicians in the regression model. Patients in the first-visit group showed lower satisfaction with both their physicians and the office setting than patients in the return-visit group. Both longer periods of waiting to get an appointment to see physicians and longer waiting periods before seeing physicians after arriving at the office were highly correlated with patients' satisfaction with their physicians ($\rho = -0.260$, $p < 0.001$ and $\rho = -0.318$, $p < 0.001$, respectively) and the office setting ($\rho = -0.428$, $p < 0.001$ and $\rho = -0.495$, $p < 0.001$, respectively).

3. Relationship between patients-perceived problem areas and physicians' attitudes

Patients who reported lower scores on physicians' attitudes also reported more problems on the following areas during their visits: office staff; record keeping; parking and signage; waiting

times/areas; getting appointment/seeing doctor; doctor's care and communication; getting information over telephone; and other problems (Table 5).

IV. DISCUSSION

Patient satisfaction is an important factor to improve health outcomes. It is known that patient dissatisfaction can be related to poor compliance to treatment, lengthier recovery periods, and increased complication rates (Fallowfield, 1992). The aim of the study was to assess the influence of physicians' friendly and caring attitudes on patients' satisfaction with physicians and office settings. As previously mentioned, Uhas et al. conducted a study on the relationship between patients' satisfaction and physicians' attitudes using this database in 2008 (Uhas et al., 2008). While this study intended to update the results of Uhas et al.'s study, the results of this study have several strengths in terms of sample size and analysis of the database. First, Uhas et al. included 20,901 patients from 2004 to 2006 while this study included 273,994 patients nationally surveyed from 2004 to 2012. Secondly, the previous study only examined the correlations between patients' satisfaction and physicians' attitudes. However, we analyzed the impact of physicians' attitudes on patients' satisfaction while controlling for other factors influencing patients' satisfaction.

This study showed consistent results with the previous study in that strong correlations were found between patients' satisfaction and physicians' caring attitudes. The correlations were found even more strongly in this study than the previous one, for both the physician satisfaction ($r=0.956$ vs. 0.92) and office satisfaction ($r=0.911$ vs. 0.83).

The unstandardized regression coefficients (b) of physicians' attitudes on patients' satisfaction with their physicians and the office setting were 8.71 and 7.07, controlling for covariates. Based on the results of this study, patients' perception of their physicians' caring attitude is the most critical factor influencing patients' satisfaction with their care.

We also determined whether waiting time before scheduling an appointment to see physicians and to physically meet the physicians after arriving at the office influenced patients' satisfaction. Shorter waiting times to get an appointment and to see their physicians were related to higher satisfaction scores. These findings from the present analyses were consistent with those of Uhas et al. (Uhas et al., 2008), and Iaconi et al. (Iaconi, Chang, Feldman, & Balkrishnan, 2011). In addition, we found that longer time spent with physicians was also associated with the higher satisfaction scores. Therefore, we can infer that patients' satisfaction with their physicians depend on both qualitative (physicians' attitude) and quantitative (time spent) factors.

This study demonstrated that lower scores on physicians' attitudes had a positive relationship with patients' perception of problems during the visit. When patients felt that physicians' caring and friendly attitude was low, they tended to perceive more problems related to their visits. Unlike the results of the previous study (Uhas et al., 2008), the problem related to parking/signage also showed association with levels of physicians' caring and friendly attitude. In this study, among patients who gave an extremely low score on physicians' friendless and caring attitude, approximately 11% of them also perceived parking/signage-related problems; but only approximately 6–7% of patients perceived parking/signage as a problem when patients gave at least a low score on physicians' friendless and

caring attitude.

As demonstrated in this study, patients' perceptions of the friendliness and caring attitude of physicians have a huge influence on patients' satisfaction. Better patient satisfaction in turn can result in better patient enablement and successful therapeutic outcome in the end. Although there can be various barriers to empathetic care such as insufficient length of consultation or distress of physician, the under-valued and under-taught importance of empathy to medical students is being discussed in previous research (Jani, Blane, & Mercer, 2012; Mercer & Reynolds, 2002). Studies regarding enhancement of empathetic understanding indicated that empathy skills can be significantly increased after taking targeted educational programs (Hojat, Axelrod, Span dorfer, & Mangione, 2013; Winefield & Chur-Hansen, 2000).

In this study, analysis by survey year suggested the patient's mean satisfaction with their physicians continuously increased from 2006 to 2012. Thus, survey year might be an important factor in determining patient satisfaction. As such, in this study, multiple regression was conducted by including the survey year variable to control for this. After holding the survey year variable constantly, strong relationship between physicians' attitude and patients' satisfaction was still exist. To keep enhancing this trend, effective training programs for physicians as well as medical students should be encouraged and investigated more. In addition, current trends in health care system from physician-centered care towards patient-centered care might be related to the change of patients' perception of their satisfaction.

This study has several limitations especially related to using the survey database. First, there is the possibility of several types of bias, including recall bias, selection bias, and volunteer bias. Particularly, participation in the online-based

surveys is biased toward younger participants. In this study, approximately 2% of respondents were aged 65 years old or older, and this may not represent the general elderly population because elderly who use the Internet would be expected to be different than non-users when it comes to factors that affect their satisfaction. Secondly, another limitation is that the interpretation of the result is not extended to causation of physicians' attitudes on patients' satisfaction, since a cross-sectional study design is not able to explain causal relationship. Third, this survey does not provide information about the severity of the disease in patients who participated in this survey. However, the severity of the disease might be a critical factor in determining patient satisfaction. In patients with severe diseases, successful therapeutic outcomes might be more important than physicians' attitudes when determining patient satisfaction. On the other hand, in patients with severe diseases, physicians' attitudes might have more impact on patient satisfaction. Fourth, the variable about patients' urban-rural status did not included in this study. However, urban-rural disparities in medical utilization might be related to patient satisfaction. The number of office-based physicians in the area where patients reside might have an impact on determining patient satisfaction.

In this study, the associations of physicians' attitudes with patients' satisfaction with their physicians and the office setting were assessed separately. As an overarching concept, patients' satisfaction were classified into two lower-level concepts: 1) patients' satisfaction with their physicians and 2) patients' satisfaction with the office setting. However, these two concepts are highly related to each other. In addition, to our knowledge, one previous study by Uhas et al., (Uhas et al., 2008) is the only study that includes patients' satisfaction with the office setting as the

outcome variable. As such, little is known about the associations of physicians' attitudes with patients' satisfaction with the office setting. Thus, future study could be considered using multi-level relationships.

V. Conclusion

In conclusion, this study provides evidence on the strong relationship between physicians' friendliness and caring and patients' satisfaction by analyzing patients' ratings based on a national Internet-based survey. To facilitate patients' satisfaction with healthcare, a continuous effort to develop empathetic ability of physicians should be undertaken.

<References>

- Beck RS, Daughtridge R, Sloane PD(2002). Physician-patient communication in the primary care office: a systematic review. *The Journal of the American Board of Family Practice / American Board of Family Practice*, 15(1):25-38
- Bush T, Cherkin D, Barlow W (1993). The impact of physician attitudes on patient satisfaction with care for low back pain. *Arch Fam Med*, 2(3):301-305
- Camacho FT, Feldman SR, Balkrishnan R, Kong MC, Anderson RT(2009). Validation and reliability of 2 specialty care satisfaction scales. *American journal of medical quality : the official journal of the American College of Medical Quality*, 24(1):12-18
- DrScore. (2013). Patient Satisfaction Surveys. Retrieved September 11, 2013, from <http://www.drscore.com/medicalgroups/about.cfm>
- Fallowfield L (1992). The ideal consultation. *Br J Hosp Med*, 47:364-367.
- Garcia D, Bautista O, Venereo L, Coll O, Vassena R, Vermaeve V(2013). Training in empathic skills improves the patient-physician relationship during the first consultation in a fertility clinic. *Fertility and sterility*, 99(5):1413-1418 e1411
- Hojat M, Axelrod D, Spandorfer J, Mangione S(2013). Enhancing and sustaining empathy in medical students. *Medical teacher*, 35(12):996-1001
- Iaconi AI, Chang J, Feldman S, Balkrishnan R(2011). Toward Continuous Primary Care in the United States: Differences in Patient Satisfaction Between First and Return Visits to Primary Care Physicians/Analysis of DrScore--The National e-Survey Data. *Journal of primary care & community health*, 2(2):127-132
- ITU. (2013). Percentage of individuals using the internet Retrieved September 11, 2013, from <http://www.itu.int/en/ITU-D/Statistics/Pages/stat/default.aspx>
- Jani BD, Blane DN, Mercer SW(2012). The role of empathy in therapy and the physician-patient relationship. *Forschende Komplementarmedizin*, 19(5):252-257
- Mercer SW, Maxwell M, Heaney D, Watt GC(2004). The consultation and relational empathy (CARE) measure: development and preliminary validation and reliability of an empathy-based consultation process measure. *Family practice*, 21(6):699-705
- Mercer SW, Reilly D, Watt GC(2002). The importance of empathy in the enablement of patients attending the Glasgow Homoeopathic Hospital. *The British journal of general practice : the journal of the Royal College of General Practitioners*, 52(484):901-905
- Mercer SW, Reynolds WJ(2002). Empathy and quality of care. *The British journal of general practice : the journal of the Royal College of*

- General Practitioners, 52 Suppl:S9-12
- Neumann M, Scheffer C, Tauschel D, Lutz G, Wirtz M, Edelhauser F(2012). Physician empathy: definition, outcome-relevance and its measurement in patient care and medical education. *GMS Zeitschrift fur medizinische Ausbildung*, 29(1):Doc11
- Roter DL, Stewart M, Putnam SM, Lipkin M, Jr., Stiles W, Inui TS(1997). Communication patterns of primary care physicians. *JAMA : the journal of the American Medical Association*, 277(4):350-356
- Thompson DA, Yarnold PR, Williams DR, Adams SL (1996). Effects of actual waiting time, perceived waiting time, information delivery, and expressive quality on patient satisfaction in the emergency department. *Ann Emerg Med*, 28(6):657-665
- Uhas AA, Camacho FT, Feldman SR, Balkrishnan R(2008). The Relationship Between Physician Friendliness and Caring, and Patient Satisfaction: Findings from an Internet-Based Survey. *The patient*, 1(2):91-96
- Winefield HR, Chur-Hansen A(2000). Evaluating the outcome of communication skill teaching for entry-level medical students: does knowledge of empathy increase? *Medical education*, 34(2):90-94
- Zachariae R, Pedersen CG, Jensen AB, Ehrnrooth E, Rossen PB, von der Maase H (2003). Association of perceived physician communication style with patient satisfaction, distress, cancer-related self-efficacy, and perceived control over the disease. *Br J Cancer*, 88(5):658-665