

# Disparity in Physician-Patient Communication by Ethnicity: Evidence from Bangladesh

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## Research

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## Abstract

**Background:** Physician-patient communication is the primary process by which medical decision-making occurs and health outcome depends. Physician-patient communication differences may partly from the ethnic disparities. To examine this problem, this study aims to explore whether physician-patient communication differs by ethnic in primary care medical consultations.

**Methods:** The study was conducted among the Bengali and ethnic minority patients ( $N = 850$ ) who visited the physician for medical consultations. Data were collected using a structured post-consultation questionnaire. T-test was conducted to compare the communication between the Bengali and ethnic minority patients. Multiple linear regression analyses were performed to identify the factors associated with favorable communication behavior from the physicians.

**Results:** Bengali patients received more supportive communication behaviors from the Bengali doctors than that of ethnic minority patients including physicians' cheerful greetings, encouraging patients to express health problems and asking questions, listening carefully, responding to the questions and concerns, explaining the patients about a medical test, medication, and probable side effects, discussing the treatment options, involved the patients in decisions and spending adequate time. Results of linear regression explored that respondents' education year, internet use, knowledge on the health problem, having a pre-plan about the content of medical consultation, information seeking about the health problem, visiting female doctors, and quiet ambience of the doctor's room are significantly associated with better PPCB score for the Bengali patients. In contrast, age, being the resident of an urban area, perception of affecting a minor health problem, having a pre-plan about the content of medical consultation, patients' involvement in physicians' decision-making about the treatment, and talking time resulted in better physician-patient communication for the ethnic minority patients.

**Conclusion:** This study suggests for reducing the disparity in the socio-economic status of the ethnic minority people through development program and teaching healthcare providers how to use patient-centered communication skills to engage their patients is one solution to improve equity in the delivery of healthcare and make sure patients are receiving high-quality treatment, no matter their race or ethnicity.

## Introduction

Physician-patient communication (PPC) is the primary process of health care service utilization. Research show that successful PPC can contribute to enhanced patient satisfaction, adherence to treatment and health outcomes as well as decreased costs of medical malpractice and increased work satisfaction for physicians [1-4]. Positive doctor-patient interactions could provide and obtain knowledge, and overcome any differences of opinion during a physician's visit. However, creating a productive PPC relationship is difficult when the doctor and the patient come from different racial or ethnic groups [1] because of some factors (i.e., language barriers, paradoxical attitudes about disease and illness, gender roles, and power disparities between patients and providers). Such cultural disparities between patients and physician

create a challenge to trust in relationships between patient and physician and pose potential obstacles to an adequate provision of health and health services [5]. Failure to solve these problems may result in poor health outcomes of patients.

In Bangladesh, more than 45 ethnic minorities existed in Bangladesh prior to independence in 1971 [6]. Some cross-cultural or cross-ethnic studies show that minority groups cannot manage their livelihood because of their low socio-economic status, which suffer from deprivation, discrimination and many health problems in Bangladesh [7, 8]. Although these minority communities have their own language, they are unable to use their language in every aspect of life due to the dominance or hegemony of Bangla for its acceptance and inadequacy of their language. For example, the ethnic minority people may encounter language problems when are admitted to a hospital or visit physicians. Even though the minority community are gradually shifting to Bengali for surviving in the society, when they use Bengali as their language can be differentiated for their accent refers to phonological variation and variation in pronunciation. Therefore, they will experience communicative difficulty and other ethnic problems when using health service caused by ethnic differences.

Incorporating ethnic contexts into health communication research in health care is important to promote the health equity between majority Bengali and ethnic minority groups in Bangladesh [9, 10]. Therefore, we aim to explore whether physician-patient communication differs by ethnic in primary care medical consultations and then examine the factors influencing better communication behavior in primary care medical consultations in Bangladesh.

## Methods

### Study design

A hospital based cross-sectional survey was used to investigate the patients. All the patients including Bengali and ethnic minority patients who visited physicians for primary care medical consultations in district hospitals and Upazila health complexes (UHC) in the Chittagong Health Tracts (CHT) area from August 19 to September 30, 2019 were incorporated to our study population.

### Sample size and sampling procedures

For conducting this hospital based cross-sectional study, purposive sampling method was used to select the study areas, while study participants were selected using a systematic sampling method. For hospital patients, three district hospitals from three districts (*Rangamati* districts, *Bandarban* district, and *Khagrachori* district) under CHTs area were selected purposively for the more diversified population than Upazilas. For collecting data from the UHC, three Upazilas from three districts were selected. Study participants from both Bengali and ethnic minority patients were drawn from each district hospital/UHC using a systematic sampling method according to the proportion.

Finally, a total of 850 respondents were taken as the study participants in the survey. The proportion of participants [400 (47.1%) were Bengali while 450 (52.9%) were ethnic minority groups] in our study was in accordance with the population proportion in Bangladesh.

## Data collection

Data were collected using a structured and post-consultation questionnaire in the Bangla language. For pre-testing the questionnaire, 20 patients from the district hospital and 20 from an UHC were randomly selected. The questionnaire included the following four parts, a) patients' demographic and socio-economic characteristics; b) patients' cognitive, affective influences; c) physicians' predisposing and organizational context; d) physician-patient communication behavior (PPCB). PPCB was assessed using a scale consists of 19 items developed by Wachira et al. [11]. The questionnaire was translated into the local language, (i.e., Bangla) for appropriateness and easiness. Afterward, the Bangla version was translated back to English to ensure consistency and accuracy of meaning. The translation of the questionnaire was done by language experts in both cases. Five-point Likert scale was used to measure each item related to physician-patient communication behavior as strongly disagree =1, disagree =2, neither agree nor disagree = 3, agree = 4, strongly agree = 5. The internal consistency was also measured. Cronbach's Alpha ( $\alpha$ ) was 0.757, showing that the instrument is valid for the participants. The survey was guided and administered by six facilitators who were employed based on prior experience on data collection and eloquence in the local accent of the Bangla language of both the Bengali and ethnic minority patients, and also fluent in local languages of ethnic minority people. Respondents were given some ideas about the questionnaire before entering the physicians' chamber, and just after the end of the medical interview, the data collectors asked the patients to respond to the questions of the post-consultation questionnaire.

## Statistical analysis

Cross-tabulation with chi-square ( $\chi^2$ ) analysis was used to examine the relationship between socio-demographic and other descriptive characteristics by respondents' ethnicity. Then, a two-tailed t-test was conducted to see the statistically significant differences between the Bengali and ethnic patients regarding different items related to PPCB. Multiple linear regression analyses were used to examine the factors influencing PPCB for the Bengali and ethnic minority groups as well. The variables with a  $p < .05$  in t-test and ANOVA were included in the linear regression models to determine the predictors of better PPCB. Multicollinearity in the linear regression analyses was checked. ANOVA values for better PPCB for the Bengali ( $F = 8.66, p < .001$ ), and that for ethnic minority ( $F = 15.38, p < .001$ ) showed that our multiple linear regression model performed well and would be a good predictor of the main outcome variable. Variables with  $p < 0.05$  were considered as statistically significant.

## Results

### Socio-demographic characteristics of participants by ethnicity

Table 1 shows the socio-demographic characteristics of the study participants by their ethnic identity. Of them, 228 (26.8%) had no formal education, while only 92 (10.8%) attained class > 12. Among the participants, 250 (29.4%) were >20-30 years, whereas 168 (19.8) were >40 years old. Besides, 499 (58.7%) were male and 351 (41.3%) were female. Among the Bengali participants, 22% were involved in agriculture, 14.3% were in service, and 15.5% in business, while for the ethnic minority respondents, it was 29.3% (agriculture), 8.4% (service) and 9.6% (business) respectively. Among the Bengali participants, 19% had an income of BDT >30000, while only 4.7% of ethnic minority participants had this amount of income.

## **Patients and physicians characteristics by ethnicity**

Physicians' predisposing, patients' cognitive, and organizational characteristics according to the ethnic identity is reported in Table 2. The Bengali participants (32.8%) were more likely to be returning patients than their ethnic minority counterparts (25.3%). Regards to the perception of knowledge of the health problem, the Bengali patients had a higher likelihood to have good knowledge (30.8%) compared to ethnic minority patients (18.4%). In the case of the perception about the ambiance of the physicians' room, Bengali patients (17.8) were more likely to mention the physicians' room condition as quiet relative to their ethnic minority counterparts (9.3%). Besides, the physicians had a higher likelihood to talk with the Bengali patients in comparison with those of ethnic minority. Moreover, ethnic minority patients were less likely to participate in medical consultations in contrast to the Bengali patients ( $p < .01$ ).

## **The difference between the Bengali and ethnic patients regarding physicians' communication behavior**

Table 3 demonstrates that the Bengali patients reported better physicians' communication behavior than the ethnic minority patients did among 18 out of 19 items. The PPCB items which depicted statistically significant differences ( $p \leq .001$ ) between the Bengali and ethnic minority respondents were: physicians' greeting the patients ( $t = 3.44, p = .001$ ), encouraging to express the health problems ( $t = 8.41, p < .001$ ), listening carefully to the patients ( $t = 4.90, p < .001$ ), understanding the patients ( $t = 4.56, p < .001$ ), explaining the physical examination ( $t = 8.43, p < .001$ ), explaining the lab tests needed ( $t = 9.31, p < .001$ ), discussing treatment options with the patients ( $t = 8.54, p < .001$ ), giving adequate information ( $t = 7.77, p < .001$ ), checking the treatment plan(s) was acceptable to the patients ( $t = 6.19, p < .001$ ), explaining the medications including possible side effects ( $t = 5.17, p < .001$ ) encouraging to ask questions ( $t = 11.57, p < .001$ ), responding the questions of the patients ( $t = 10.14, p < .001$ ), showing concern as a person ( $t = 3.61, p < .001$ ), involving the patients in treatment decisions ( $t = 5.29, p < .001$ ), discussing next steps with the patients ( $t = 9.56, p < .001$ ), physicians' checking to be sure understood everything by the patients ( $t = 9.84, p < .001$ ), spending the right amount of time ( $t = 9.34, p < .001$ ), patients' overall satisfaction with the physicians' visit ( $t = 5.40, p < .001$ ). However, there was no

significant difference in the mean score of one item related to discussion the reason(s) for coming ( $t = .04$ ,  $p = .967$ ).

## Factors associated with PPCB by the ethnicity

For the Bengali patients, as Table 4 illustrates that respondents' education year ( $\beta = .14$ ,  $p = .042$ ), internet use ( $\beta = .16$ ,  $p = .016$ ), good knowledge on the health problem ( $\beta = .16$ ,  $p < .001$ ), having a pre-plan about the content of medical consultation ( $\beta = .12$ ,  $p = .012$ ), patients' information seeking about the health problem ( $\beta = .17$ ,  $p < .001$ ), female doctors ( $\beta = .10$ ,  $p = .035$ ), and quiet ambience of the doctor's room ( $\beta = .11$ ,  $p = .029$ ) are significantly associated with better PPCB score. In contrast, for the ethnic minority patients, respondents' age ( $\beta = .20$ ,  $p < .001$ ), being the resident of urban area ( $\beta = .09$ ,  $p = .034$ ), perception of affecting a minor health problem ( $\beta = .10$ ,  $p = .016$ ), having a pre-plan about the content of medical consultation ( $\beta = .17$ ,  $p < .001$ ), patients' involvement in physicians' decision-making about the treatment ( $\beta = .19$ ,  $p < .001$ ), and talking time ( $\beta = .35$ ,  $p < .001$ ) are significantly associated with better PPCB score.

## Discussion

Our study showed that less patient-centered behavior from the discordant ethnic physicians and other health professionals. According to the data, the Bengali patients were more likely to have friendly greetings from the physician that made them more comfortable with the medical consultations than that of the ethnic minority patients. Indeed, physician-patient communication is commenced through a greeting. The ethnic patient may feel discomfort if they were not received a warm welcome from the physician that probably affects the entire consultation and lead them to less participate in communication with the doctor.

In terms of the affectionate behaviors, for example, to encourage expressing the patients' thoughts concerning the health problems, listening carefully to what s/he had to say, and understanding what the patient had to say, the present study observed that physicians from the ethnic discordant showed less concern towards the ethnic minority patients. Similarly, we found ethnic discrimination from the Bengali physicians to the ethnic minority patients relating to discussing treatment options with the patients and giving as much information as they wanted. Side effects after taking the prescribed medicine act as an impediment to the adherence to the treatment if patients are not well informed earlier about it.

Patient participation is an important element for effective doctor-patient communication. Moreover, patient satisfaction depends on the response behavior of the doctor. We also found a positive correlation ( $r = .42$ ,  $p < .01$ ) between the two items. However, we found a high inconsistency by the ethnic discordance regarding encouraging the patients to ask questions and replying to the concerns. The Bengali doctors are not too favorable towards the ethnic minority patients— it might be caused by the difference of language and culture that is worthy of a future qualitative study [11-13].

It is also reported that there was a vast discordance relating to the physicians' discussion on next steps, including any follow-up plans and checking to be sure the patient understood everything according to the ethnic disparity of the patients. Spending adequate time with the patient is one of the most important predictors of patient satisfaction. A strong positive association ( $r = .38, p < .01$ ) was also explored in our study in this regard. As stated earlier, we also found a large difference relating the patients' judgment of spending the right amount of time by the doctor by the ethnic disparity depicting that the ethnic Bengali patients were more likely to get sufficient time in medical consultation than that of the minority patients.

Patient satisfaction is linked to greater adherence to therapy, return visit to the doctor, and health improvement [14-17]. In terms of the patients' perception of being satisfied with the visit to the doctor, the Bengali patients had a higher likelihood of expressing their satisfaction toward the doctor than that of their ethnic minority counterparts. Since there is still some dominating cultural myth and traditional orthodox as to the health and diseases exist among the ethnic minority groups of the CHTs those are not scientific and hygiene at all, the government health service should attempt to pull them from this malpractice into medical care by satisfying them with the patient-centered behavior.

The study findings revealed some factors associated with that the Bengali patients' having favorable communication behavior from the physicians those were also consistent with previous studies, for example, patients' education [11, 13, 18, 19], asking for updates on their physical condition or verifying information [18, 20], being visited by female doctors [21-23]. Consistent with previous studies, our findings also supported the positive association between appointment length and better physician-patient communication for the ethnic minority patients [24-26].

## Conclusion

In conclusion, our research demonstrates that patients in concordant ethnic relationships report higher levels of physicians' patient-centered communication. In other words, the Bengali patients received more supportive communication behaviors (e.g., physicians' cheerful greetings, affectionate behaviors, explaining the patients about a medical test, medication, and probable side effects, discussing the treatment options and involved the patients in decisions and spending adequate time) from the Bengali doctors than that of ethnic minority patients. It is important to incorporate cultural competency or social inequality in medical education and to develop a culture-centered communication framework, so that it can contribute to reductions in the ethnic discrepancy and other socio-economic inequality; and better health outcomes.

The present study has some limitations. First of all, in our study, different aspects of physicians' patient-centered behavior are depicted based on self-reported information from the patients, which is subject to reporting errors. Usually, there is a long line of patients waiting for a doctor to be seen in medical centers due to the improper ratio between the number of physicians and patients; thus, physicians have to be busy dealing with a large number of patients every hour. This is why doctors are reluctant to complete any questionnaire about research. Thus, we had to depend on the information provided by the patients.

Moreover, we only examined quantitative measures of physician-patient interaction rather than the quality of this communication.

## Abbreviations

ANOVA: Analysis of variance; BDT: Bangladeshi Taka; CHT: Chittagong Hill Tracts; PPC: Physician-Patient Communication; PPCB: Physician-Patient Communication Behavior; UHC: Upazila Health Complex

## Declarations

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## Authors' contributions

All authors were responsible for the structure of this paper. MZ and JX designed the study and drafted the manuscript. JX contributed equally to this study and shares first authorship. RK, MR and FC contributed to the study's conception and design, interpretation of the data, draft manuscript and critical revisions of the paper. All authors approved the final versions for submission.

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## Availability of data and material

All of the primary data has been included in the results. Additional materials with details may be obtained from the corresponding author.

## Ethics approval and consent to participate

The study was conducted in accordance with the Declaration of Helsinki, and ethical approval for the study was provided by the Institutional Review Board for Human Subject Research, Research Centre for Public Health at Tsinghua University(THUSM/PHREC/2020400-015). Written informed consent was

obtained from each participant before inclusion in the study. Participation was voluntary, and the participants had an opportunity to reject or discontinue participation at any stage of the study.

### Consent for publication

Not applicable.

### Competing interests

All authors declare no competing interests.

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## Tables

Table 1 Respondents' socio-economic characteristics by ethnicity (N = 850)

Variable (N= 850)	n	Bengali (%)	Ethnic Minority (%)	$\chi^2$	p
Gender				1.64	.200
Female	351	156 (39.0)	195 (43.3)		
Male	499	244 (61.0)	255 (56.7)		
Age (years)				3.27	.352
Up to 20	218	106 (26.5)	112 (24.9)		
> 20-30	250	114 (28.5)	136 (30.2)		
> 30-40	214	109 (27.3)	105 (23.3)		
> 40	168	71 (17.8)	97 (21.6)		
Education				8.04	.154
No education	228	110 (27.5)	118 (26.2)		
Up to class 5	113	53 (13.3)	60 (13.3)		
class >5-8	131	69 (17.3)	62 (13.8)		
class >8-10	163	70 (17.5)	93 (20.7)		
Class >10-12	123	48 (12.0)	75 (16.7)		
Class >12	92	50 (12.5)	42 (9.3)		
Occupation				18.52	.001
No job	170	81 (20.3)	89 (19.8)		
Agriculture	220	88 (22.0)	132 (29.3)		
Student	260	112 (28.0)	148 (32.9)		
Service	95	57 (14.3)	38 (8.4)		
Business	105	62 (15.5)	43 (9.6)		
Monthly household income (BDT)				85.33	<.001
Up to 5000	165	35 (8.8)	130 (28.9)		
> 5000 - 10000	228	110 (27.5)	118 (26.2)		
> 10001 - 20000	255	121 (30.3)	134 (29.8)		
> 20001 - 30000	105	58 (14.5)	47 (10.4)		
> 30000	97	76 (19.0)	21 (4.7)		

Internet use				0.05	.814
Yes	401	147 (46.8)	214 (47.6)		
No	449	213 (53.3)	236 (52.4)		

*Note.* Columns against the categories of characteristics of each ethnic group sum to 100%. Chi-square ( $\chi^2$ ) test was performed to depict the difference. BDT = Bangladeshi Taka.

Table 2 Cognitive, organizational and other predisposing characteristics by the ethnicity

Variable (N = 850)	n	Bengali (%)	Ethnic Minority (%)	$\chi^2$	p
<b>Patient Type</b>				5.68	.017
Returning	245	131 (32.8)	114 (25.3)		
New	605	269 (67.3)	336 (74.7)		
<b>Knowledge of the problem affected</b>				27.34	<.001
Poor	625	263 (65.8)	362 (80.4)		
Good	225	137 (34.3)	88 (19.5)		
<b>Perception of the severity of the problem</b>				4.87	.301
Slight	335	177 (44.3)	158 (37.3)		
Moderate	407	183 (45.8)	224 (49.8)		
Extreme	98	40 (10.0)	58 (12.9)		
<b>Waiting time (minutes)</b>				1.41	.495
> 0-20	293	132 (33.0)	161 (35.8)		
> 20-40	224	103 (25.8)	121 (26.9)		
> 40	333	165 (41.3)	168 (37.3)		
<b>Gender of the doctor</b>				4.52	.034
Female	228	121 (30.3)	107 (23.8)		
Male	622	279 (69.8)	343 (76.2)		
<b>The ambiance of the doctor's room</b>				16.99	<.001
Noisy	459	218 (54.5)	241 (53.6)		
Average	278	111 (27.8)	167 (37.1)		

Quiet	113	71 (17.8)	42 (9.3)		
<b>Talking time (minutes)</b>				54.11	<.001
Up to 5	219	58 (14.5)	161 (35.8)		
> 5 - 10	197	180 (45.0)	17 (38.9)		
> 10	276	162 (40.5)	114 (25.3)		
<b>Patients' information seeking about the health problem</b>				21.87	<.001
Yes	233	140 (35.0)	93 (20.7)		
No	617	260 (65.0)	357 (79.3)		
<b>Patients' involvement in decision-making of the treatment</b>				6.96	.008
Yes	554	279 (69.8)	275 (61.1)		
No	296	121 (30.2)	175 (38.9)		

*Note.* Columns against the categories of characteristics of each ethnic group sum to 100%. Chi-square ( $\chi^2$ ) test was performed to depict the difference.

Table 3 Mean score with standard deviation and independents samples t-test of different items relating to physician-patient communication behavior (PPCB) by ethnicity

Items	Bengali	Ethnic Minority	t	p
Your doctor greeted you in a way that made you feel comfortable	3.53 (±1.16)	3.27 (±1.09)	3.44	.001
Discussed your reason(s) for coming	4.04 (±).74	4.04 (±.80)	.04	.967
Encouraged you to express your thoughts concerning health problems	3.99 (±.76)	3.48 (±1.01)	8.41	<.001
Listened carefully to you	4.11 (±.77)	3.84 (±.87)	4.90	<.001
Understood what you had to say	3.93 (±.94)	3.62 (±1.04)	4.56	<.001
If a physical examination was required, the doctor fully explained	3.19 (±1.23)	2.47 (±1.24)	8.43	<.001
Explained the lab tests needed (e.g., blood, X-rays, ultrasound, etc.)	3.22 (±1.15)	2.45 (±1.26)	9.31	<.001
Discussed treatment options with you	3.73 (±1.00)	3.08 (±1.23)	8.54	<.001
Gave you as much information as you wanted	3.72 (±.92)	3.20 (±1.01)	7.77	<.001
Checked to see if the treatment plan(s) was acceptable to you	2.70 (±1.36)	2.14 (±1.32)	6.19	<.001
Explained medications, if any, including possible side effects	2.64 (±1.30)	2.19 (±1.25)	5.17	<.001
Encouraged you to ask questions	3.81 (±.86)	3.02 (±1.13)	11.57	<.001
Responded to your questions and concerns	3.73 (±1.01)	2.94 (±1.26)	10.14	<.001
Showed concern about you as a person	3.97 (±.82)	3.76 (±.94)	3.61	<.001
Involved you in decisions about your health as much as you wanted	3.56 (±.99)	3.17 (±1.13)	5.29	<.001
Discussed next steps including any follow-up plans	3.64 (±1.10)	2.83 (±1.35)	9.56	<.001
Checked to be sure you understood	3.63 (±1.09)	2.83 (±1.27)	9.84	<.001
Spent the right amount of time with you	3.98 (±.76)	3.43 (±.95)	9.34	<.001

Overall, you were satisfied with your visit to the doctor today	3.95 (±.83)	3.60 (±1.03)	5.40	<.001
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Table 1 Multiple linear regression analysis showing factors associated with physician-patient communication by the ethnicity

Variables	Bengali			Ethnic Minority		
	$\beta$	<i>t</i>	<i>p</i>	$\beta$	<i>t</i>	<i>p</i>
Constant		16.49	<.001		7.45	<.001
Education of the respondents (Continuous variable)	.14	2.00	.042	.11	1.76	.079
Occupation of the respondents (agriculture/no job vs. business/service/student)	.01	.23	.820	.06	.88	.378
Age of the respondents (Continuous variable)	.10	1.65	.101	.20	3.61	<.001
Area of Residence (rural vs. urban/sub- urban)	.00	.03	.972	.09	2.13	.034
Marital status of the respondents (married vs. single/widow/divorced)	.09	1.43	.153	.09	1.42	.156
Respondents' Internet use (no vs. yes)	.16	2.42	.016	.06	1.03	.303
Perception of the problem's severity (severe vs. minor)	-.02	-.50	.616	.10	2.42	.016
Knowledge of health problem (poor vs. good)	.16	3.30	.001	.03	-.81	.421
Plan about consultation before visit (no vs. yes)	.12	2.53	.012	.17	3.95	<.001
Patients' information seeking (no vs. yes)	.17	3.68	<.001	.01	.36	.718
Involvement in decision-making (no vs. yes)	.05	1.05	.292	.19	4.60	<.001
Gender of the doctors (male vs. female)	.10	2.11	.035	.01	.28	.777
Patient Status (new ns. returning)	.02	.50	.616	.02	.61	.539
Talking time (Continuous variable)	.06	1.37	.171	.35	8.08	<.001
Ambience of the doctor's room (noisy vs. quiet)	.11	2.19	.029	.07	1.69	.091
		<i>R</i> <sup>2</sup> =.25	<i>F</i> =8.66	<.001	<i>R</i> <sup>2</sup> =.35	<i>F</i> =15.38
						<.001