Jagannath University Journal of Social Sciences, Vol. 3, No. 1-2, 2015, pp. 85-96

Factors Promoting Patient Participation in Medical Consultations: A Study on Doctor-Patient Communication in Upazila Health Complex in Bangladesh

Muhammad Zakaria
Assistant Professor, Department of Communication and Journalism, University of Chittagong, Chittagong

Abstract: *Patients are different in their desire and aptitude to actively participate in medical consultations. More active patient participation leads to proper treatment and better health outcome. This study is a modest attempt to examine the factors that promote or retard patient participation, particularly focused on most of the variables described in the ecological model of medical communication. Data were collected from 177 patients from 20 upazila health complexes through post-interview questionnaire. Linear regression analysis and Pearson correlation were applied to identify the predictors related with patient involvement. Findings depict that physicians' patient-centered behavior, physicians' acuity of patients' desire for information and patients' self desire for information were significantly associated with patient participation, while waiting time was inversely related. Additionally, appointment length, patients' sex and status (old or returning) were also found to be the determinants of involvement. Future research should investigate the impact of patients' participation on physicians' patient-centered communication.*

Introduction

Along with physician-patient interaction, patient participation is also an important phenomenon of the relationship between two counterparts. It is considered to be an important way for effective health communication between patients and providers (Berry, 2007; Harrington, 2015; Hugman, 2009; Parvanta, Nelson, Parvanta, & Harner, 2011; Schiavo, 2007; Thomas, 2006). Limited number of growing researches depict that patients vary to participate in medical encounter although minimum extent of participation is needed for effective communication as well as quality of care and treatment. Doctor-patient communication has been studied for more than four decades and many ideas have been expanded from these erudite works (Cegala, 2011). But little concentration has been given for developing and conceptualizing these concepts (Cegala & Post, 2009); accordingly there are considerable gaps in theory development and comprehension of communication processes regarding medical encounter (Street, 2003). Besides, researchers have given more emphasis to examine different aspects of physician-patient communication ignoring the study on patient participation. But a number of scholarly literature reveal that patients' active participation affects the interaction with doctors; and consequently, it is related with better health outcomes (Griffin et al., 2004; Ward et al., 2003). Patients who actively participate in the medical interviews by stating their problems, symptoms, anxieties, seeking more information and expressing their opinion are making information available to doctors for proper diagnosis and improved treatment (Street, Gordon, Ward, Krupat, & Kravitz, 2005; Roter, 2000). In addition,

patients who play an active role are more likely to have more information and patient-centered behavior from physicians and better perceptions of treatment resulting in higher enhancement in health (Stewart, 1995). Moreover, there is a growing body of literature illustrating that doctors' interaction approach is more patient-centered when they communicate with high-participation patients (Cegala & Post, 2009; Gattellari, Butow, & Tattersall, 2001). So, it is rational to examine the predictors that promote or retard patient participation.

Review of Literature

There is a dearth of research based literature in terms of assessing factors associated with patient participation with the line of ecological model of medical communication.

To investigate the extent to which patient participation in medical interactions is influenced by the patient's personal characteristics, the physician's communication style and the clinical setting, Street et al. (2005) conducted a cross sectional analysis from three clinical sites. The outcome measures included the degree to which patients asked questions, were assertive, and expressed concerns and the degree to which physicians used partnership-building and supportive talk (praise, reassurance, empathy) in their consultation. The results reveal that the majority of active participation behaviors were patient-initiated rather than prompted by physician partnership-building or supportive talk. Patients who were more active participants received more facilitative communication from physicians, were more educated, and were more likely to be white than of another ethnicity. Women more willingly expressed their negative feelings and concerns. Female physicians were more likely to use supportive talk than males, and physicians generally used less supportive talk with nonwhite compared with white patients.

Patients who actively participate in medical interviews influence physicians to adopt a more patient-centered style of communication. Influenced by previous study, Cegala & Post (2009) tried to examine how patients' active participation (e.g., asking questions, providing information) affects physicians' use of patient-centered communication. The findings depict that when interacting with high participation patients, physicians engaged in significantly more patient-centered communication overall than when interacting with low participation patients.

In a follow-up study, Cegala (2011) examines factors that potentially promote or retard patient participation in primary care medical interviews using Street's (2003) ecological model of communication. Here, Patient participation was defined as information seeking and provision, assertive utterances, and emotional expressions. Patient participation discourse scores were used as the dependent variable in a multilevel regression analysis with 19 predictor variables representing cultural, organizational, and interpersonal factors of the ecological model. The analysis demonstrates eight variables such as appointment length, waiting time, patient communication skills intervention, physicians' patient-centeredness, patients' age, medical condition, physicians' perception

of patients' medical condition and physicians' perception of patients' desire for information were significant predictors of patient participation.

A challenge in research on this subject is related to methods of study how researchers measure patient participation that has been confessed in this study. Some researchers simply ask patients about their participation. For example, Heggland, Ogaard, Mikkelsen, & Hausken (2012) developed a questionnaire that measured how much patients participated in decisions about a surgical treatment. They asked questions like did the patient have an opportunity to choose his or her surgeon and did the doctor answer the patient's questions in a clear and understandable manner. Alternatively, some scholars believe that researchers must measure patient participation as it is enacted during the healthcare visit. These researchers will get permission to audiotape or videotape healthcare interactions between patients and providers and then analyze the amount of participation by the patient (Street & Millay, 2001).

Objectives of the Study

The main objective of this study is to explore the factors influencing patient participation in primary care medical consultations in upazila health complexes in Bangladesh. Some other specific objectives of the study are as follows:

- To examine the predictors those promote or retard patient participation in medical consultations in line with the factors and variables described in ecological model of medical communication.
- To analyze the relationship between different components of doctors' patient centered behavior and patient participation.

Conceptual Framework

There is no unique definition or method of evaluating patient participation (Cegala & Post, 2009; Head & Cohen, 2015). Patient participation can be viewed with multifaceted aspects (Holmes & Harrington, 2015) while some scholars define it from narrow approach, such as engage in medical decision-making; and other views are wide and comprehensive ranging from participation in self-care to asking information about health problems and involving in decision making process. However, according to an inclusive concept, patient participation is defined as "the extent to which patients produce verbal responses that have the potential to significantly influence the content and structure of the interaction as well as the health care provider's beliefs and behaviors" (Street & Millay, 2001, p. 62).

This study is concerned with the communicative aspect of patient participation. Based on work by Street and research into patient communication skills training, Cegala (2011) argues that patient participation has four components: information seeking, which indicates asking medically related questions and attempting to verify information the doctor has provided; assertive utterances, which includes patient's opinion, preference, suggestion, recommendation, disagreement, or request; information provision, which involves patient's responding to questions from the doctor or volunteering medically

related information on their own; and expression of concern, in which patients express fear, anxiety, or worry in relation to their health problem.

The theoretical rationale for this study is based on the ecological model of communication in medical consultations (Street, 2003). According to the model, patient participation is influenced, determined or related to a complex combination of three contextualizing factors consisted of organization, culture and interpersonal factors. Each context is associated with some variables.

Firstly, organizational context is associated with the setting in which the medical interview took place that includes appointment length, the amount of time patients wait to see a physician, clinic type, and whether or not patients are experienced with a communication skills training.

Secondly, cultural context is associated with physician's race/ethnicity, patient's race/ethnicity and patient-physician ethnic concordance.

Thirdly, several variables represent the interpersonal context. Doctors' predisposing variables includes sex, years past residency and patient-centered communication style; while patients' predisposing variables are sex, age, education, status (i.e., either new to the physician or a returning patient), and perceived medical condition. The cognitive-affective variables for physicians are perception of the severity of patient's medical condition and complexity of medical decision making as well as the doctor's perception of patient's desire for information and involvement in decision making. On the other hand, patient's desire for information and involvement in decision making represents the variable of cognitive-affective influences for patients. This study was designed according to these variables.

Method

Sample and data:

The study consists of 177 patients (N = 177) from 20 health complexes in upazila level from all (08) divisions of Bangladesh (see Table 2). Mean age of the respondents was found to be 32.43 years (SD = 15.26). Convenience sampling, a type of non-probability sampling was used in the study. Data collectors were instructed to select samples from different demographic characteristics including age, gender and status of patients; and gender of physicians.

For data collection, a structured questionnaire was used that is consisted of mainly three parts such as questions regarding interpersonal context for both physicians and patients; questions related to organizational factors; questions indicating four components of patient participation. The questionnaire was finalized after a pilot study on 10 respondents. 20 graduate students, who were inhabitants of and well known with the locality from where samples were taken, collected data from 20 health complexes. Besides, most of the data collectors had previous experience of conducting social science

research. Respondents were given some ideas about the questionnaire before entering the doctors' room and just after the end of the medical consultation patients were asked to complete the post-interview questionnaire.

Table 1: Demographic and socio-economic characteristics of patients and physicians

Background Characteristics (N = 177)	Frequency (n)	Percentage (%)
Gender of the respondents		
Female	85	48.0
Male	92	52.0
Education of the respondents		
Illiterate	27	15.3
Primary	57	32.2
Secondary	51	28.8
Higher Secondary	18	10.2
Graduate	24	13.6
Age of the respondents (yrs)		
Years 11-18	29	16.4
Years >18-40	102	57.6
Years >40-60	35	19.8
Years Above 60	11	6.2
Income of the household (BDT)		
5000	75	42.4
5001-10000	51	28.8
10001-20000	37	20.9
Above 20000	14	7.9
Status of the Patient		
New	102	57.6
Returning	75	42.4
Race/ethnicity of the respondents		
Bengali	163	92.1
Ethnic	14	7.9
Gender of the doctors		
Female	50	28.2
Male	127	71.8
Years servicing in the health complex		
1 Year	43	24.3
2 Years	40	22.6
3 Years and above	94	53.1
Patients' level of knowledge on illness		
No Knowledge	20	11.3
Moderate Knowledge	135	76.3
Sound Knowledge	22	12.4

Dependant variables:

Primarily, to measure the extent of patient participation, we constructed a variable that is "to what extent patient actively participates during medical consultations with doctor." Four statements comprising the components of patient participation such as information seeking, information provision, assertive utterances and expressing concerns were constructed to assess the degree of participation. 5-point Likert scales were used ranging from 1 (strongly disagree) to 5 (strongly agree) for analyzing the components. Afterwards, we computed these four variables into one variable expressing the patient participation (M = 3.39, SD = .67). This score was used as the dependent variable in linear regression analysis.

Independent variables:

We used 15 independent variables from three contextualizing factors as described in ecological model of medical communication to identify the predictors promoting patient participation. Data relating to these variables were collected through post-interview questionnaire self-reported by the patients.

Table 2: List of Upazila Health Complexes

Division (08)	District (19)	Name of Upazila Health Complex (20)	Patients' Number (N = 177)
Dhaka	Narshingdi	Narshingdi Sadar Hospital	05
	Rajbari	Pangsha upazila health complex	10
Mymensing	Mymensing	Trishal Upazila Health Complex	10
	Sherpur	Sreebardi Upazila Health Complex	07
Chittagong	Brahmanbaria	Brahmanbaria 250 bed District Sadar Hospital	08
	Comilla	Burichong Upazila Health Complex	10
	Feni	Dagonbhuiyan Upazila Health Complex	10
	Noakhali	Senbag Upazila Health Complex	06
	Chittagong	Sitakunda Upazila Health Complex	10
	Chittagong	Lohagara Upazila Health Complex	06
	Cox's Bazar	Ramu Upazila Health Complex	10
	Rangamati	Kaptai Upazila Health Complex	08
	Khagrachari	Khagrachari Sadar Hospital	09
Rajshahi	Bogra	Sariakandi Upazila Health Complex	10
	Naogaon	Raninagar Upazila Health Complex	10
Rangpur	Lalmonirhat	Hatibandha Upazila Health Complex	08
Khulna	Jessore	Chowgacha Upazila Health Complex	10
Sylhet	Habiganj	Habiganj Sadar Upazila Community Clinic	10
	Maulvibazar	Kamalganj Upazila Health Complex	10
Barisal	Barisal	Mehendiganj Upazila Health Complex	10

Some variables of the model were deducted in the study due to inapplicability and unavailability, while the terms of some variables were adopted to fit with the context of our country. Among organizational factors we included appointment length, waiting time

and clinic type excluding patient communication skills training. 11 independent variables imply the interpersonal factors such as sex, age, education, status (new, returning), medical condition of the patient; doctors' sex, years serving in the complex (this term was adopted instead of 'years past residency' described in ecological model), patient-centered communication style; patients' self desire for information and involvement in decision making; and doctors' perception of severity of patients' medical condition as well as doctors' perception of patients' desire for information and involvement in decision making. One of the limitations of this study is that data on last two variables of physicians' cognitive-affective influences were also collected from the report of the patients, although these two variables were related with the doctors' perceptions. As physicians were unwilling to answer such types of questions for various reasons, this is why the researcher had to rely on patients' information regarding these two variables. Remaining variable was patients' ethnicity/race from cultural context subtracting two variables for inapplicability in this study.

Statistical Analysis

Data were entered and analyzed by SPSS version 16.0. Statistical analyses were conducted at three levels. First, descriptive statistics using frequencies was used to see the overall percentage of demographic, socioeconomic and other characteristics of respondents. Second, linear regression analysis was fit to identify the factors promoting patient participation. Regression results were presented and discussed in terms of t and p value. Third, correlations between different important variables were also studied to see the relationship among them.

Results

The results of the linear regression analysis are reported in Table 3. The results are organized by the contextualizing factors and associated variable of the ecological model. As it is clear that appointment length (t = 2.43, p = 0.02) and waiting time (t = -2.54, p = 0.01) is significant of organizational context variables. The amount of time patients waited to see a physician was negatively related to patient participation. No significant relationship was found in case of clinic type variable.

The remaining five significant predictors reflected the interpersonal context, with two variables representing patients' predisposing influences and one variable reflecting patients' cognitive-affective influences, whereas each one variable corresponding to physicians' predisposing factors and physicians' cognitive-affective influences. Regarding predisposing influences physician patient-centeredness (t = 6.42, p < 0.001) was significantly related with higher patient participation. Additionally, patient sex (t = 2.06, p = 0.04) and patient status (t = 1.77, p = 0.08) were also positively associated with patient involvement. Regarding cognitive-affective influences physicians' perception of patients' desire for information and involvement (t = 3.40, p = .001) and patients' desire for information and involvement (t = 21.03, p < 0.001) appeared to be important predictors for greater patient participation. Besides, physicians' perception of patient medical condition is to some extent positively related with patient participation. As

regards cultural context variables, patient race/ethnicity was not found as important determinants for patient involvement.

Table 3: Results of the linear regression analysis

Predictor	Coefficient	*t*	*p* Value
Organizational context variables			
Appointment length	0.18	2.43	0.02
Wait time	-0.09	-2.54	0.01
Clinic type	-0.007	-0.18	0.86
Interpersonal context variable			
Predisposing factors			
Patient sex	0.07	2.06	0.04
Patient age	-0.04	-0.95	0.34
Patient education	-0.04	-0.87	0.39
Patient status	0.06	1.77	0.08
Patient medical condition	-0.002	-0.05	0.96
Physician sex	-0.01	-0.31	0.76
Years servicing in the health complex	-0.03	-0.67	0.50
Physician patient-centeredness	0.44	6.42	<0.001
Cognitive-affective factors			
Physician's perception of patient medical condition	0.07	1.64	0.10
Physician's perception of patient desire for information and involvement	0.14	3.40	0.001
Patient's self desire for information and involvement	0.76	21.03	<0.001
Cultural context variable			
Patient race/ethnicity	-0.01	-0.29	0.78

Discussion

The purpose of this study was to use Street's (2003) ecological model to examine factors that promote or retard patient participation. The present results are discussed in terms of the most relevant findings of previous research, with particular attention to Cegala (2011) and Street et al. (2005). The following discussion is organized by contextualizing factors of the ecological model.

Organizational context factors:

Three out of the four organizational context variables were examined in the study where appointment length and wait-time of the patient were found as significant predictors for patient participation, while clinic type was appeared as nonsignificant factor. These findings are consistent with previous study (Cegala, 2011) illustrating that wait-time had a negative association with patient participation. Cegala also found that the

longer patients had been waiting for their appointment, the less likely they were to participate. Perhaps a long waiting time results in abating serenity of the patient. Usually, the longer the appointment lasted, the more likely are to participate. Consistent with previous studies, our findings also supported the association between appointment length and patient involvement. Clinic type was a nonsignificant determinant of patient participation in our study that is similar with Cegala, although Street and associates (2005) found some evidence for a significant association between patient participation and clinic type.

Interpersonal context factors:

Regarding patient variables of predisposing factors, our findings disagree with others (Cegala, 2011; Street et al. 2005) that there was an association between patients' sex and participation. In particular, male patients are higher likelihood of participation during medical interview than their counterparts. On the other hand, a nonsignificant relationship was found here between patients' age and involvement that contradicts with other research (Arora & McHorney, 2000; Levinson, Kao, Kuby, & Thisted, 2005) reporting higher participation of younger patients than older patients. Some researchers have found that more educated patients actually demonstrate greater participation than their less educated counterparts (Street, Voigt, Geyer, Manning, & Swanson, 1995). Here, education was a nonsignificant predictor of participation similar with Cegala (2011) and Street et al. (2005). Patient status (i.e., new patient or returning) had an association with participation indicating that returning patients were more likely to involve in medical interviews. Perhaps, returning patients were tended to have more openness due to their pre-acquaintance and relation with doctors. Patients' self-reported medical condition was not appeared as a predictor for participation. This is because there may not have been serious ailment among patients.

As regards to physician variable of predisposing factors, this study reveals that doctors' sex and years past residency were nonsignificant predictors of patient participation that was consistent with previous study. Regarding physicians' patient-centeredness, our findings agree with Cegala (2011) and Street et al. (2005) depicting that it is a highly significant predictor (r = 0.44, p = 0.01) of patient participation. Generally, patients having more positive behavior from doctors were more likely to participate.

In terms of cognitive-affective influences, physicians' perception of patients' desire for information and involvement was appeared to be a key determinant (r = 0.47) of participation. This result is similar to others (Cegala, 2011; Street et al. 2007). Moreover, patients' self desire for information and involvement also significantly predicted (r = 0.86) participation that contradicts with previous studies. Finally, physicians' perception of the seriousness of the patients' medical condition was moderately associated (r = 0.40) with patient participation. It is noticeable that, we found a significantly positive relationship among the variables relating to physicians' behavior, perception and patients' self desire. For instance, moderate relationship (r = 0.52) was found between doctors' positive behavior and doctors' perception of patients' desire for information, while a positive association (r = 0.50) was observed between physicians' perception of patients' medical condition and physicians' perception of patients' desire for information.

Moreover, significant correlation has been shown between doctors' patient-centered behavior and different variables regarding cognitive-affective factors, such as doctors' perception of patients' medical condition (r = 0.63), and physicians' perception of patients' desire for information (r = 0.52).

Cultural context factors:

The result regarding patients' ethnicity and participation was nonsignificant factor. This is consistent with Cegala (2011), Street et al. (2009) and Street et al. (2005). But, some previous studies show that minority patients had lower participation than nonminority participants (Doescher, Saver, Franks, & Fiscella, 2000; Johnson, Saha, Arbelaez, Beach, & Cooper, 2004). However, we did not examine the variable of physicians' ethnicity as well as the ethnic concordance as Bengali doctors were employed in the health complexes of study areas.

Conclusion

To conclude, several findings of this study are consistent with previous research into patient participation and the ecological model. In particular, physicians' patient-centeredness, physicians' perception of patients' desire for information as well as patients' self desire for information and involvement were significantly associated with patient participation, while waiting time had a negative relationship with patient involvement. In addition, appointment length, patients' sex and status (old or returning) were appeared to be the predictors for participation. However, little evidence was found for a relationship between participation and physicians' understanding of patients' medical condition.

This investigation has several limitations that raise questions for future research. First, various variables have been examined regarding ecological model and patient participation based on the post-interview questionnaire self-reported by the patients in which measuring of behavior and involvement may not be accurate, while in previous research each medical interview was audiotape recorded and timed with a stopwatch. In Bangladesh obtaining data on medical encounter is difficult as doctors would not allow recording the consultations with patients by audio tape or video camera (A. H. G. Quddus, personal communication, October 5, 2015 <no reference>). Usually, there is a long queue of patients waiting for visiting doctor in medical centers due to inappropriate ratio between the number of physicians and patients; accordingly doctors have to be busy with dealing large number of patients every hour. This is why doctors are reluctant to complete any research questionnaire. So, the researchers had to depend on information provided by the patients' through questionnaire that method has some limitations to have exact data regarding medical interviews. Second, all the health complexes included here were similar type. A more diverse sample of medical centers including private medical would be useful in generalizing findings along with a larger, more diversified sample of patients. Moreover, it would be helpful to include all variables representing all of the contextualizing factors of the ecological model. Future research should address the impact of patients' participation on physicians' patient-centered behavior in Bangladesh perspective. Despite these limitations, the present study adds to a small contribution to

research on the ecological model and attempts to elicit determinants of patient participation.

References:

Arora, N. K., & McHorney, C. A. (2000). Patient Preferences for Medical Decision Making: Who Really Wants to Participate? *Medical Care*, 38: 335–341. Retrieved from http://www.jstor.org/stable/3767197

Berry, D. (2007). *Health Communication: Theory and Practice*. Berkshire: Open University Press, McGraw-Hill Education.

Cegala, D. J. (2011). An Exploration of Factors Promoting Patient Participation in Primary Care Medical Interviews. *Health Communication*, 26 (5), pp. 427-436. doi: 10.1080/10410236.2011.552482

Cegala, D. J., & Post, D. M. (2009). The Impact of Patients' Participation on Physicians' Patient Centered Communication. *Patient Education and Counseling*, 77, 202–208. doi:10.1016/j.pec.2009.03.025

Doescher, M. P., Saver, B. G., Franks, P., & Fiscella, K. (2000). Racial and Ethnic Disparities in Perceptions of Physician Style and Trust. *Archives of Family Medicine*, 9, 1156–1163. Retrieved from http://www.ncbi.nlm.nih.gov/pubmed/ 11115223

Gattellari, M., Butow, P. N., & Tattersall, M. H. (2001). Sharing Decisions in Cancer Care. *Social Science & Medicine*, 52, 1865–1878. doi: 10.1016/S0277-9536(00)00303-8

Griffin, S. J., Kinmonth, A. L., Veltman, M. W., Gillard, S., Grant, J., & Stewart, M. (2004). Effect on Health-related Outcomes of Interventions to Alter the Interaction between Patients and Practitioners: A Systematic Review of Trials. *Annals of Family Medicine*, 2, pp. 595–608. Retrieved from http://www.ncbi.nlm.nih.gov/ pubmed/15576546

Harrington, N. G. (2015). Health Communication: An Introduction to Theory, Method, and Application. In N. G. Harrington (Ed.), *Health Communication: Theory, Method, and Application*. New York: Routledge. pp. 1-28.

Head, K. J., & Cohen, E. L. (2015). Factors Affecting the Patient. In N. G. Harrington (Ed.), *Health Communication: Theory, Method, and Application*. New York: Routledge. pp. 181-211.

Heggland, L., Ogaard, T., Mikkelsen, A., & Hausken, K. (2012). Patient Participation in Surgical Treatment Decision Making from the Patients' Perspective: Validation of an Instrument. *Nursing Research and Practice*, 1 – 8. doi: 10.1155/2012/939675

Holmes, G. N., & Harrington, N. G. (2015). The Patient Experience. In N. G. Harrington (Ed.), *Health Communication: Theory, Method, and Application*. New York: Routledge. pp. 31-58.

Hugman, B. (2009). *Healthcare Communication*. London: Pharmaceutical Press.

Johnson, R. L., Saha, S., Arbelaez, J. J., Beach, M. C., & Cooper, L. A. (2004). Racial and Ethnic Differences in Patient Perceptions of Bias and Cultural Competence in Health Care. *Journal of General Internal Medicine*, 19, pp. 101–110. doi: 10.1111/j.1525-1497.2004.30262.x

Levinson, W., Kao, A., Kuby, A., & Thisted, R. A. (2005). Not All Patients Want to Participate in Decision Making: A National Study of Public Preferences. *Journal of General Internal Medicine*, 20, pp. 531–535. doi: 10.1111/j.1525-1497.2005. 04101.x

Parvanta, C. F., Nelson, D. E., Parvanta, S. A., & Harner, R. N. (2011). *Essentials of Public Health Communication*. Sudbury, MA: Jones & Bartlett Learning.

Roter, D. (2000). The Enduring and Evolving Nature of the Patient-Physician Relationship. *Patient Educ Couns*, 39, pp. 5-15. doi:10.1016/S0738-3991(99)00086-5

Schiavo, R. (2007). *Health Communication: From Theory to Practice*. San Francisco: Jossey-Bass.

Stewart, M. (1995). Effective Physician-Patient Communication and Health Out-comes: A Review. *Can Med J*, 152, pp. 1423-1433. Retrieved from http://www.ncbi.nlm. nih.gov/pmc/articles/PMC1337906/

Street, R. L., Jr. (2003). Communication in Medical Encounters: An Ecological Perspective. In T. L. Thompson, A. M. Dorsey, K. I. Miller, & R. Parrott (Eds.), *Handbook of health communication*. Mahwah, NJ: Lawrence Erlbaum Associates. pp. 63–89.

Street, R. L., Jr., Gordon, H. S., & Haidet, P. (2007). Physicians' Communication and Perceptions of Patients: Is it How They Look, How They Talk, or Is It Just the Doctor? *Social Science and Medicine*, 65, pp. 586–598. doi: 10.1016/j.socscimed. 2007.03.036

Street, R. L., Jr., Gordon, H. S., Ward, M. M., Krupat, E., & Kravitz, R. L. (2005). Patient Participation in Medical Consultations: Why Some Patients are More Involved than Others. *Medical Care*, 43, pp. 960–969. doi: 180.211.172.164

Street, R. L. Jr., & Millay, B. (2001). Analyzing Patient Participation in Medical Encounters. *Health Communication*, 13 (1), pp. 61 – 73. doi: 10.1207/ S15327027HC1301_06

Street, R. L., Jr., Richardson, M. N., Cox, V., & Suarez-Almazor, M. E. (2009). (Mis) Understanding in Patient-Health Care Provider Communication about Total Knee Replacement. *Arthritis and Rheumatism*, 61, pp. 100–107. doi: 10.1002/art.24371

Street, R. L., Jr., Voigt, B., Geyer, C., Jr., Manning, T., & Swanson, G. P. (1995). Increasing Patient Involvement in Choosing Treatment for Early Breast Cancer. *Cancer*, 76, pp. 2275–2285. Retrieved from http://www.ncbi.nlm.nih.gov/ pubmed/8635032

Thomas, R. K. (2006). *Health Communication*. New York: Springer.

Ward, M. M., Sundaramurthy, S., Lotstein, D., Bush, T. M., Neuwelt, C. M., & Street, R. L., Jr. (2003). Participatory Patient-Physician Communication and Morbidity in Patients with Systemic Lupus Erythematosus. *Arthritis and Rheumatism*, 49, pp. 810–818. doi: 10.1002/art.11467