

# Reducing Patients' Unmet Concerns in Primary Care: the Difference One Word Can Make

John Heritage, PhD<sup>1</sup>, Jeffrey D. Robinson, PhD<sup>2</sup>, Marc N. Elliott, PhD<sup>3</sup>, Megan Beckett, PhD<sup>3</sup>, and Michael Wilkes, MD PhD<sup>4</sup>

<sup>1</sup>Department of Sociology, University of California, Los Angeles, CA, USA; <sup>2</sup>Department of Communication, Rutgers University, Brunswick, NJ, USA; <sup>3</sup>RAND Corporation, Santa Monica, CA, USA; <sup>4</sup>School of Medicine, University of California, Davis, CA, USA.

**CONTEXT:** In primary, acute-care visits, patients frequently present with more than 1 concern. Various visit factors prevent additional concerns from being articulated and addressed.

**OBJECTIVE:** To test an intervention to reduce patients' unmet concerns.

**DESIGN:** Cross-sectional comparison of 2 experimental questions, with videotaping of office visits and pre and postvisit surveys.

**SETTING:** Twenty outpatient offices of community-based physicians equally divided between Los Angeles County and a midsized town in Pennsylvania.

**PARTICIPANTS:** A volunteer sample of 20 family physicians (participation rate=80%) and 224 patients approached consecutively within physicians (participation rate=73%; approximately 11 participating for each enrolled physician) seeking care for an acute condition.

**INTERVENTION:** After seeing 4 nonintervention patients, physicians were randomly assigned to solicit additional concerns by asking 1 of the following 2 questions after patients presented their chief concern: "Is there anything else you want to address in the visit today?" (ANY condition) and "Is there something else you want to address in the visit today?" (SOME condition).

**MAIN OUTCOME MEASURES:** Patients' unmet concerns: concerns listed on previsit surveys but not addressed during visits, visit time, unanticipated concerns: concerns that were addressed during the visit but not listed on previsit surveys.

**RESULTS:** Relative to nonintervention cases, the implemented SOME intervention eliminated 78% of unmet concerns (odds ratio (OR)=.154,  $p=.001$ ). The ANY intervention could not be significantly distinguished from the control condition ( $p=.122$ ). Neither intervention affected visit length, or patients'; expression of unanticipated concerns not listed in previsit surveys.

**CONCLUSIONS:** Patients' unmet concerns can be dramatically reduced by a simple inquiry framed in the

SOME form. Both the learning and implementation of the intervention require very little time.

**KEY WORDS:** unmet concerns; unanticipated concerns; intervention; care; physician-patient communication.

J Gen Intern Med 22(10):1429-33

DOI 10.1007/s11606-007-0279-0

© Society of General Internal Medicine 2007

## INTRODUCTION

According to the National Ambulatory Medical Care Survey, about 40% of patients bring more than 1 concern to primary, acute-care visits. Some studies suggest that, when given the opportunity, patients raise an average of 3 concerns per visit.<sup>1,2</sup> However, physicians' opening questions (e.g., What can I do for you today?) normally elicit only a single concern, and the expression and exploration of additional concerns is frequently abbreviated, if not absent.<sup>3,4</sup> Given that the average primary-care visit is constrained to about 11 min in family practice,<sup>5</sup> and that new and potentially severe concerns can emerge late in visits,<sup>6,7</sup> physicians may face difficulties in completely and effectively managing the full array of patients' concerns.<sup>3,4</sup>

Physicians' early knowledge of the entire agenda of patients' concerns facilitates diagnosis and treatment, as well as effective time management.<sup>8</sup> Medical school curricula encourage physicians, after patients present their first concern, to 'survey additional concerns' and 'set the agenda' by asking questions, such as Is there anything else that we need to take care of today?<sup>9-13</sup> However, in practice, physicians rarely ask these questions<sup>3,4</sup> and tend to do so close to the ends of visits, when additional concerns cannot effectively be dealt with.<sup>6,7</sup>

This study tests 2 question designs that implement the recommended survey of additional concerns to determine whether, when asked at the recommended time, they reduce the incidence of patients' unmet concerns. It also examines the impact of these questions on visit length and on the proliferation of concerns that were unanticipated by patients in previsit surveys but contingently produced in response to the study questions.

## Two Types of Question Design

It has long been known that the design of Yes/No questions frequently communicate an expectation in favor of either 'Yes'

Received February 12, 2006

Revised May 22, 2007

Accepted June 21, 2007

Published online August 3, 2007

or 'No' responses.<sup>14-18</sup> For example, the following questions (→), drawn from an actual visit, all favor 'No' responses:

DOC → And do you have any other medical problems?  
 PAT Uh No  
 (7 s of silence)  
 DOC → No heart disease?  
 PAT ((cough)) No  
 (1 s of silence)  
 DOC → Any lung disease as far as you know?  
 PAT No

One element of this communication process is to be found in words that are recognized by linguists to have positive or negative polarity.<sup>19-21</sup> For example, the word "any" is negatively polarized: it ordinarily occurs in declarative sentences that are negatively framed (e.g., "I haven't got any samples") and is normally judged to be inappropriate in positively framed declarative sentences (e.g., "I've got any samples."). By contrast, the word "some" is positively polarized: it ordinarily occurs in positively framed declarative sentences (e.g., "I've got some samples") and is normally judged to be inappropriate in negatively framed ones (e.g., "I haven't got some samples").

Although both "some" and "any" can appropriately be used in questions, their polarized associations may have a direct causal influence that biases responses. This study tests for this effect in relation to the question "Is there (some/any)thing else you would like to address in the visit today?"

## METHODS

### Study Sample and Procedures

We conducted a nested, cross-sectional study of adult acute-care visits clustered within 20 community-based, family-practice physicians, 10 from Los Angeles County and 10 from a midsized town in Pennsylvania. Seven of the 20 physicians were female (35%). Twenty five physicians were approached before 20 (80%) agreed to participate. Of the 391 patients who were approached, 280 (72%) agreed to participate.

Physicians and patients were told that the purpose of the study was to examine how patient concerns were expressed in primary care. Physicians were offered \$300 for their participation, and patients were offered \$10. Data collection spanned January–June, 2004. For a one-to-three week period, patients were consecutively screened for eligibility in waiting rooms of physicians' offices. To be eligible, patients had to be adults who had previously visited the health care practice, were on an acute visit for an acute problem, and were able to conduct visits in English. All study procedures were reviewed and approved by the Institutional Review Boards of the University of California, Los Angeles, the Pennsylvania State University, and participating health care organizations.

### Intervention

After physicians had performed 4 visits in a normal fashion, they were randomly assigned to 1 of 2 intervention conditions for all remaining observations. Physicians watched a 5-min video recording, narrated by a practicing General Internist

(MW), that described, explained, and exemplified the communication intervention. The training video was watched alone and normally in the physicians' offices. In the video, the narrator begins by briefly introducing the general goals of the project (i.e., improving physician–patient communication) and then continues to explain the problem of unmet concerns and the potential improvement in time management from soliciting additional concerns. The narrator then describes when and how to conduct the intervention. Specifically, physicians were instructed to open visits in their usual ways and, once patients' chief concerns were determined, to ask either "Is there anything else you want to address in the visit today?" (ANY condition) or "Is there something else you want to address in the visit today?" (SOME condition). Additionally, physicians were instructed to "gaze directly at the patient (and to) avoid looking at the medical record" while asking the intervention question. After this, the video presents 2 vignettes in which the intervention is modeled by a physician and 2 standardized patients. The narrator concludes by emphasizing the importance of precisely phrasing the intervention question and thanking physicians for their participation. Aside from the 2 intervention questions and the narrator's comments about them, the 2 intervention videos were identical, including the physician, standardized patients and patient responses. Physicians were reminded of intervention questions during visits with 3×3 Post-it notes, which were placed unobtrusively in patients' medical charts. At least 7 additional 'intervention' visits were collected for each physician.

### Data Collection Procedures

Before visits, patients completed self-administered questionnaires that collected demographic information, and all patients but the first within each physician completed an open-ended question that asked patients to list their "reasons for seeing the doctor today, including the problems and concerns you want to talk about with the doctor." To investigate whether this open-ended question had a priming effect on the number of concerns expressed during visits, it was removed from the first (nonintervention) case for each physician. Visits were videotaped and transcribed. Visits in which physicians omitted the intervention, or implemented the intervention incorrectly, were removed from the data set and physicians were asked to do replacements until at least 7 intervention visits were collected.

Patients' 'unmet concerns' were defined as concerns that patients identified in previsit surveys but were not raised by patients or addressed by physicians during visits. We operationalized addressed concerns as those pursued by physicians through some combination of examination, diagnosis, treatment recommendations, or counseling. Coding of these concerns was found to be reliable in a code–recode test ( $\kappa=1.0$ ). Patients' 'unanticipated concerns' were defined as concerns that patients did not identify in previsit surveys but that patients raised and physicians addressed during visits ( $\kappa=.78$ ). 'Unanticipated concerns' did not include concerns initiated by physicians (e.g., those arising from test results, systems and medication review, etc.).

### Analytic Methods

There were 83 control cases. Primary analyses evaluated the intervention as correctly implemented in 147 of 197 interven-

tion encounters (75%). Six cases were subsequently excluded: 2 involving patients who were later determined to be presenting on a nonacute basis and were ineligible, and 4 with insufficient response to the previsit survey. This resulted in a final sample of 224 visits for analysis, 20 of which were used only for evaluating the priming effects of the survey, and 204 of which constituted the primary analytic sample. For all analyses, the physician–patient visit was the unit of analysis.

An indicator of any unmet concerns, a count of nonsurvey concerns, and the mean length of the encounter were modeled multivariately as a function of 2 intervention indicators (contrasted with the control condition) and covariates that were parsed for each model from a list of 9 candidates via bivariate screening.

None of the 105 patients (0%) with a single previsit concern had any unmet concern, as compared to 20 of 99 patients (20%) with more than 1 pre-visit concern ( $p < .001$  by Fisher's Exact Test, which is similar to chi-squared tests but which is appropriate when the sample size assumptions of these tests are not met), thus further restricting analyses of unmet concerns to the 99 patients with more than 1 previsit concern. Logistic regression modeled the presence of any unmet concerns among this subset, with results presented as odds ratios and covariate-adjusted proportions, which can be interpreted as the proportions that would have been observed after matching on covariates.<sup>22</sup>

The larger set of 204 visits was used to model nonsurvey concerns and visit length. The number of nonsurvey concerns, as count data, was modeled using Poisson regression, with results presented as incident rate ratios, the amount by which the number of outcomes is multiplied for each 1-unit change in a given predictor. Linear regression was used to model mean visit length.

For each of the 3 outcomes, 9 covariates were screened in bivariate analogues of the corresponding multivariate models for inclusion in the multivariate models: number of previsit concerns expressed (1, 2, or 3–4, with “1” necessarily absent for the unmet concerns outcome), patient age in decades, a patient gender indicator, an indicator of whether the patient was non-Hispanic white, an ordinal measure of educational attainment (scored linearly as a single degree of freedom), continuous household income, an indicator of physician gender, an indicator of familiarity with the physician (seen 3 or more times including the current visit), and a site indicator (Pennsylvania). Patient age had 1 missing case, for which mean imputation was employed. Household income was not reported for 11% of respondents; in these cases, the mean value was imputed and an indicator of missingness was employed. For parsimony, we estimated the bivariate association of each covariate with each outcome and only retained those for which  $p < .20$ , a standard screening threshold designed to prevent the premature elimination of variables with stronger multivariate than bivariate effects.<sup>23</sup>

The potential priming effect of listing previsit concerns in the previsit survey was tested by comparing total presented concerns in the initial cases that did not include that feature to those in other cases from the control arm via a Wilcoxon 2-sample test of ranks, an approach which does not assume normally distributed outcomes.

All analyses were conducted in STATA 9.0<sup>24</sup> and corrected for the clustering of patients within physicians using the robust “sandwich” estimator.<sup>25–27</sup>

Table 1. Patient and Visit Characteristics

	Los Angeles (n=108)	Pennsylvania (n=116)	Total (n=224)
Female patients	67%	65%	66%
Non-Hispanic white patients	59%	95%	78%
Patient age	44 Years (SD 16)	42 Years (SD 16)	43 Years (SD 16)
Patient education: high school or less	53% (n=104)	65% (n=111)	59% (n=215)
2 or more concerns in previsit survey*	58% (n=98)	40% (n=106)	49% (n=204)
Mean visit length	11.1 min (SD 4.5)	11.6 min (SD 5.0)	11.4 min (SD 5.0)

\*Limited to those given the previsit survey of concerns.

## RESULTS

The main patient and visit characteristics are summarized in Table 1. Patients averaged 43 years of age. Two thirds were women, three-quarters were non-Hispanic white, and fewer than half had attended college. Fifty-five percent of the patients had visited their study physician on 3 or more occasions including the study visit. The sites were similar except that the Pennsylvania patients were somewhat less likely to have attended college ( $p = .07$ ) and were overwhelmingly non-Hispanic whites relative to the Los Angeles sample ( $p < .001$ ). Los Angeles patients were more likely to list more than 1 concern in the previsit survey ( $p < .01$ ). Our physicians followed our instructions to gaze at their patients while performing the intervention in 92% of visits. None of the remaining 8% of visits involved an unmet concern.

### Previsit Concerns and Tests of Priming

Forty-nine percent of the sample listed more than 1 concern in the previsit survey (Overall Mean, 1.7; SD, 0.8; Range, 1–4). In the recorded visit, 54% of patients presented more than 1 concern (Overall Mean, 1.9; SD, 1.0; Range, 1–6). Compared to other nonintervention cases, patients who were not asked to list their reasons for the medical visit in the previsit survey did not significantly differ in the number of presented concerns, indicating that the previsit survey did not have a priming effect ( $p = .998$ ).

### Unmet Concerns

Unmet concerns were relatively frequent in the nonintervention cases where patients had listed more than 1 previsit concern (37%). These unmet concerns were not unimportant. Fifty percent were potential acute care conditions (e.g., chest pain, heartburn, neck/shoulder/back pain, skin conditions etc.), 40% were questions about ongoing conditions (e.g., angina, uterine fibroids, blood pressure, weight loss, etc.) and 10% were questions about medications. Few patients (<5%) were asked about additional concerns in the nonintervention cases, and all of these inquiries emerged after the presenting concern had been fully dealt with, and the visit was drawing to a close.

Patients with more than 1 previsit concern gave more affirmative responses to the SOME than the ANY question (90.3 vs 53.1%,  $p = .003$ ). This resulted in a reduction in unmet concerns. As can be seen in Table 2, the multivariate odds of

**Table 2. Variables Associated with Patients' Unmet Concerns (n=99)**

Variables	Odds ratio	Std Error	Z	P	CI
"Some" intervention	.15	.08	-3.45	.001	.054-.45
"Any" intervention	.213	.213	-1.55	.122	.030-1.5
3+ previsit concerns*	7.2	3.67	3.88	<.001	2.66-19.6

\*Omitted variable is 2 previsit concerns.

unmet concerns were less than one sixth as high for the SOME intervention when compared to the nonintervention group;  $p=.001$ . This corresponds to eliminating 78% of all unmet concerns (covariate-adjusted proportion of unmet concerns 9% with the SOME intervention, reduced from 37% in the nonintervention arm). The ANY intervention could not be significantly distinguished from the nonintervention condition ( $p=.122$ ). Only 1 additional covariate was significant in this model: the odds of unmet concerns were more than 7 times higher for patients with 3 or 4 initial concerns than for patients with 2 initial concerns ( $p<.001$ ).

### Nonsurvey Concerns

Nonsurvey concerns averaged 0.40 per visit (range, 0-5; std dev=0.75). The Pearson goodness-of-fit test showed no violations of Poisson model assumptions ( $ps>.05$ ). Twenty-seven percent of the 204 modeled patients raised concerns that they did not list in the previsit survey. Neither the SOME intervention nor the ANY intervention was associated with a change in the mean number of unanticipated concerns in multivariate models ( $p>.05$ , results not shown), but there was a marginal trend ( $p=.073$ ) for the ANY intervention to result in more unanticipated concerns than would have been expected for the same patients in the nonintervention condition. Patients at the Pennsylvania site had less than a third as many unanticipated concerns as patients in the Los Angeles site ( $p<.001$ ). Patients who expressed 3 or 4 concerns in the previsit survey were also more likely to have unanticipated concerns, with nearly 3 times the number of unanticipated concerns as patients with only a single previsit concern ( $p<.001$ ). Additionally, the mean number of unanticipated concerns was multiplied 1.18 for each additional decade of patient age, so that a 75-year-old patient could be expected to have more than twice as many nonsurvey concerns as a 25-year-old patient ( $1.18^5=2.28$ ).

### Visit Length

Visit length averaged 11.4 min, with a standard deviation of 5.0 min. In multivariate models, neither the SOME ( $\beta=-2$  s,  $p=1.00$ ) nor the ANY ( $\beta=+55$  s,  $p=.244$ ) intervention had a statistically significant impact on visit length (results not shown).

## DISCUSSION

In recent years, medical educators and others have increasingly worked to identify communication strategies that are effective, teachable, and beneficial to patients and physicians.<sup>28,29</sup> Prior research has shown that training seminars conducted before visits can improve physicians' self-assessment of their abilities to survey patients' concerns.<sup>30,31</sup> Additionally, research has shown that informing physicians of patients' previsit expecta-

tions can reduce the incidence of unmet concerns.<sup>32</sup> However, this is the first study known to the authors to experimentally intervene in visits conducted by physicians, who were blinded to patients' previsit expectations, with concrete communication strategies implemented toward the beginning of visits and designed to reduce the incidence of unmet concerns.

In relation to the SOME form, the results are exceptionally clear. Relative to nonintervention cases, the SOME intervention strongly reduces the incidence of patients' unmet concerns: it does so without significantly increasing visit length, or generating a Pandora's Box of 'unanticipated' concerns (i.e., concerns that patients did not list in previsit surveys but raised contingently during visits). In a recent paper,<sup>33</sup> Street et al. remarked that "patient-centered techniques do not necessarily add significantly to the length of the consultation, especially if physicians and patients prioritize the topics discussed." This study supports that claim. A likely interpretation of the SOME intervention is that it caused concerns that patients had in mind at the beginning of visits to be raised earlier than they would have been otherwise, thereby facilitating a more effective allocation of visit time to these concerns. The prophylactic value of the SOME intervention is particularly important in cases where patients have 2 previsit concerns. Patients with 3 or more concerns remain significantly more likely to leave with at least 1 of them unmet.

Controlling for the number of previous concerns, we estimate that when implemented as specified, the SOME intervention eliminates more than three-quarters of all cases of unmet concerns. The fact that the intervention was appropriately implemented in 75% of cases suggests that our 5-min training video alone could eliminate more than half of all cases of unmet concerns, reducing the rate from 37% to 16% in cases with 2 or more previsit concerns and from 18% to 8% overall. The intervention was exceptionally economical in terms of both its raw cost and its demand on physicians' time.

Practitioners may be surprised that the ANY intervention, which is widely promoted in textbooks of medical interviewing, was relatively ineffective in eliciting additional concerns and in reducing unmet concerns. It appears that the negative polarity of the single word 'any,' with its subtle communication of an expectation for a 'No' response, tends to vitiate the opportunity to raise unmet concerns that the question might otherwise create. The relative failure of the ANY intervention may generalize to patient responses to other questions framed in similar terms, such as the almost ubiquitous "Do you have any questions?"

Readers of a more social scientific persuasion may be surprised at the relative failure of a number of highly plausible covariates to influence our main outcome. However, it is perhaps salutary to renew the recognition that language and communication lie at the heart of the process of care, and that social and other covariates of effective care may exert their influence primarily through the language and communicative choices that clinicians and patients make rather than independently of them.<sup>34-36</sup> It is also encouraging to recognize that outcomes are influenced by factors that are more amenable to change than some of the traditional social science covariates.

### LIMITATIONS

The study was relatively small and lacked statistical power to distinguish small differences, so that findings that were not

statistically significant should be viewed with some caution. Numerous other question forms that invite additional concerns were not tested. More detailed examination of the videotaped data may show subtle forms of nonverbal behavior that could influence patient responsiveness. The study was conducted in only 2 geographical areas of the USA and may not generalize to other areas, or to other parts of the English-speaking world. Likewise, the volunteer physicians and patients may not fully represent the corresponding populations.

## CONCLUSIONS

Unmet patient concerns can leave unaddressed medical problems to worsen, contribute to unnecessary patient anxieties, or result in additional visits that are costly in terms of patient time and limited medical resources. Whereas textbooks on medical interviewing recommend surveying patients' additional concerns early in visits with questions such as "Do you have any other concerns you would like to discuss today?," our results suggest that this recommendation, if followed to the letter, will not reduce the incidence of patients' unmet concerns. However, a comparatively simple modification of this question to "Do you have some other concerns you would like to discuss today?" may greatly reduce the incidence of patients' unmet concerns, without increasing visit time or increasing the communication of concerns that patients did not anticipate at the visit's outset.

**Acknowledgments:** Funding for this project was provided by the Agency for Healthcare Research and Quality, Grant no. R01 HS13343.

The authors wish to thank Jerome Hoffman MD for his assistance with the training video, and Iris Halldorsdottir, Erika Lamoureux and Seung-Hee Lee for their assistance in data analysis. Marc Elliott is supported in part by the Centers for Disease Control and Prevention (CDC U48/DP000056). The contents of the publication are solely the responsibility of the authors and do not necessarily represent the official views of the Centers for Disease Control and Prevention.

John Heritage had full access to all of the data in the study and takes responsibility for the integrity of the data and the accuracy of the data analysis.

**Conflicts of Interest:** No author has a potential or actual financial conflict of interest regarding the research reported in this article.

**Corresponding Author:** John Heritage, PhD; Department of Sociology, University of California, Los Angeles, CA 90095-1551, USA (e-mail: heritage@ucla.edu).

## REFERENCES

1. Stewart M, Brown J, Levenstein J, McCracken E, McWhinney IR. The patient-centered clinical method, 3: changes in residents' performance over two months of training. *Fam Pract*. 1986;3:164-7.
2. Kaplan SH, Gandek B, Greenfield S, Rogers W, Ware JE. Patient and visit characteristics related to physicians' participatory decision making style: results from the Medical Outcomes Study. *Medical Care*. 1995;33:1176-87.
3. Beckman H, Frankel R. The effect of physician behavior on the collection of data. *Ann Intern Med*. 1984;101:692-6.
4. Marvel MK, Epstein RM, Flowers K, Beckman HB. Soliciting the patient's agenda: Have we improved? *JAMA*. 1999;281(3):283-7.
5. Callahan E, Stange K, Zyzanski S, Goodwin M, Flocke S, Bertakis K. Physician-elder interaction in community family practice. *J Am Board Fam Pract*. 2004;17(1):19-25.
6. White J, Levinson W, Roter D. "Oh, by the way ...": the closing moments of the medical visit. *J Gen Intern Med*. 1994;9(1):24-8.
7. White JC, Rosson C, Christensen J, Hart R, Levinson W. Wrapping things up: a qualitative analysis of the closing moments of the medical visit. *Patient Educ Couns*. 1997;30:155-65.
8. Lipkin M, Putnam S, Lazare A, eds. *The Medical Interview: Clinical Care, Education And Research*. New York: Springer; 1995.
9. Cohen-Cole SA. *The medical interview: The three function approach*. St. Louis: Mosby Year Book; 1991.
10. Lang F, McCord RS. Agenda setting in the patient-physician relationship. *JAMA*. 1999;282:942.
11. Lipkin M, Frankel R, Beckman H, Charon R, Fein O. Performing the interview. In: Lipkin M, Putnam S, Lazare A, eds. *The Medical Interview: Clinical Care, Education and Research*. New York: Springer; 1995:65-82.
12. Seidel HM, Ball JW, Dains JE, Benedict GW. *Mosby's guide to physical examination*. 3rd edn. St. Louis: Mosby Year Book; 1995.
13. Swartz MH. *Textbook of Physical Diagnosis: History and Examination*. 4th edn. Philadelphia: W. B. Saunders; 1998.
14. Schuman H, Presser S. *Questions and Answers in Attitude Surveys: Experiments on Questions Form, Wording and Context*. Orlando FL: Academic; 1981.
15. Wellman FL. *The Art of Cross-Examination*. New York: Touchstone; 1997.
16. Loftus E. *Eyewitness Testimony*. Cambridge, MA: Harvard University Press; 1979.
17. Clayman S, Heritage J. *The News Interview: Journalists and Public Figures on the Air*. Cambridge: Cambridge University Press; 2002.
18. Boyd E, Heritage J. Taking the patient's medical history: questioning during comprehensive history taking. In: Heritage J, Maynard D, eds. *Communication in Medical Care: Interactions between Primary Care Physicians and Patients*. Cambridge, England: Cambridge University Press; 2006.
19. Bolinger D. *Interrogative Structures of American English*. University, Alabama: University of Alabama Press; 1957.
20. Borkin A. Polarity items in questions. *Chicago Linguistic Society*. 1971;7:53-62.
21. Horn LR. Some Aspects of Negation. In: Greenberg JH, Ferguson CA, Moravcsik EA, eds. *Universals of Human Language*, Vol.4: Syntax. Stanford, CA: Stanford University Press; 1978:127-210.
22. Graubard BI, Korn EL. Predictive margins with survey data. *Biometrics*. 1999;55(2):652-9.
23. Hosmer DW, Lemeshow S. *Applied Logistic Regression*. New York: Wiley; 1989.
24. StataCorp. *Stata Statistical Software: Release 9.0*. College Station, TX: Stata Corporation; 2005.
25. Williams RL. A note on robust variance estimation for cluster-correlated data. *Biometrics*. 2000;56:645-6.
26. White H. A heteroskedasticity-consistent covariance matrix estimator and a direct test for heteroskedasticity. *Econometrica*. 1980;48:817-30.
27. Williams RL. A note on robust variance estimation for cluster-correlated data. *Biometrics*. 2000;56:645-6.
28. Cegala D, Broz L. Physician communication skills training: a review of theoretical backgrounds, objectives and skills. *Med Educ*. 2002;36:1004-6.
29. Ihler E. Patient-physician communication. *JAMA*. 2003;289:92.
30. Baile W, Lenzi R, Kudelka A, et al. Improving physician-patient communication in cancer care: outcome of a workshop for oncologists. *J Cancer Educ*. 1997;12:166-73.
31. Stein T, Kwan J. Thriving in a busy practice: physician-patient communication training. *J Eff Clin Prac*. 1999;2:63-70.
32. Joos SK, Hickam DH, Gordon GH, Baker LH. Effects of a physician communication intervention on patient care outcomes. *J Gen Intern Med*. 1996;11(3):147-55.
33. Street RL, Gordon HS, Ward MM, Krupat E, Kravitz RL. Patient participation in medical consultations: why some patients are more involved than others. *Medical Care*. 2005;43(10):960-9.
34. Cassell E. *Talking with Patients, Volume 2: Clinical Technique*. Cambridge MA: MIT; 1985.
35. Heritage J, Maynard DW, eds. *Communication in Medical Care: Interactions between Primary Care Physicians and Patients*. Cambridge: Cambridge University Press; 2006.
36. Stivers T. *Prescribing Under Pressure: Parent-Physician Conversations and Antibiotics*. New York: Oxford University Press; 2007.