Training patients to ask information verifying questions in medical interviews

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Abstract

Purpose – The main purpose of the paper was to examine whether a short patient training session on various ways of requesting physicians to clarify a piece of previously elicited information during medical consultation would improve information communication, thus increasing patient satisfaction.

Design/methodology/approach – A total of 114 adult patients voluntarily participated in the study which was carried out at a clinic in Canada. Half of the participants were randomly assigned to the experimental group and half to the control group. Males and females were evenly distributed in both experimental and control groups. Prior to their medical visits, participants in the experimental group received 10-15-minute face-to-face training, whereas the control group did not receive any training. The purpose of the training was to facilitate information transmission, with the intention to increase communication effectiveness and patient satisfaction. Immediately after their medical visits, all participants filled out a patient satisfaction questionnaire.

Findings – On all four dimensions of patient satisfaction (i.e. overall satisfaction, relationship satisfaction, communication satisfaction and expertise satisfaction), patients who received training scored significantly higher (were more satisfied) than patients who received no training. No consistent gender differences were found in patient satisfaction in both experimental and control groups.

Research limitations/implications – This study applied a psycholinguistics theory, conversational grounding, to the field of patient education and achieved positive results.

Practical implications – The success of the short training session provides health practitioners with a new method to help patients communicate more effectively, thus increasing satisfaction in medical interviews.

Originality/value – Focuses on a means to elicit information from patients in medical consultations.

Keywords Patients, Canada, Customer satisfaction, Interviews, Communication processes

Paper type Research paper

Introduction

Butow *et al.* (1994) identified three types of patient communication skill training: information seeking (Robinson and Whitfield, 1985; Roter, 1977; Socha and Cegala, 1998; Thompson and Nanni, 1990), information provision (Fredrikson and Bull, 1995; Lewis *et al.*, 1991; Weinman, 1996), and information verifying (Anderson *et al.*, 1987; Cegala *et al.*, 2000; Kim *et al.*, 2003). The third type of patient training greatly contributes to the success of physician-patient communication but it has received little attention in the

field. To fill this gap, the present study focused on information verifying – training patients to ask the physician to clarify, repeat, reformulate, explain or repair a preciously elicited piece of information during medical consultation, thus improving information communication, and ultimately increasing patient satisfaction.

Medical conversation, like any form of face-to-face communication, is evanescent, and requires on-line monitoring and quick response (Clark and Krych, 2004; Clark and Schaefer, 1989; Clark and Schaefer, 1989; Clark and Wilkes-Gibbs, 1986). To be effective, it is essential for interlocutors to keep track of their common ground and its moment-by-moment changes (Clark and Brennan, 1991; Clark and Krych, 2004). For example, a physician delivers a diagnosis or a treatment plan which the patient does not fully understand. Instead of asking for clarification, the patient offers "yes" or "ok" or a head nod. The physician is not a mind reader; he or she takes the patient's response as understanding and proceeds to the next task. While the patient is still perplexed with his or her inadequacy, the physician gives instructions for a new medication. The patient comes out of the consultation room dazed, puzzled and unsatisfied. Instead of answering "yes", the patient could have requested the physician to repeat or explain what he or she had just said by asking simple questions such as 'Could you explain this a bit more?' Sacks *et al.* (1978) described the purpose of this type of request as "repairing the repairable" (p. 363). Depending upon how satisfied the patient is with the response by the physician, the patient may allow the physician to get on to the next utterance by indicating understanding, or he/she may ask for further information.

The process of making requests for clarification of a previously elicited piece of information is known as conversational grounding, which is a central process in everyday conversation (Clark and Brennan, 1991; Clark and Schaefer, 1989). Conversational grounding has been found to facilitate listener understanding (Schober and Clark, 1989) and information recall (Ley, 1988; Li, 1999a, b). Li video-taped and micro-analyzed 40 simulated physician-patient interviews and found that Grounding and listener recall scores were highly correlated.

Wallston *et al.* (1978) had patients view a videotape in which a model "patient" asked questions for a physician to clarify a confusing presentation about symptoms, causes and consequences of hypertension. Patients were instructed to do the same if confused in medical interviews. Patients who watched the videotapes demonstrated a significant increase in overall patient participation in the subsequent medical consultations. Using a similar video-tape and a similar procedure, Anderson *et al.* (1987) reported that trained patients showed a significant increase in overall patient participation and question asking in subsequent medical consultations.

Robinson and Whitfield (1985) demonstrated that using a simple written message instructing patients on how to check understanding could significantly increase overall patient participation and patient question asking in subsequent medical consultations. Trained patients also showed a significant increase in information recall.

McGee and Cegala (1998) face-to-face trained patients to ask questions for the physician to be clearer or more specific in the three phases of medical consultation: history-taking, examination and conclusion. Patients were also told that they were there not only to provide information for their physician but also to seek information from their physician. It was found that trained patients showed a significant increase in overall participation, overall question asking, requests for clarification, and information recall.

Cegala *et al.* (2000) administered a 14-page booklet instructing patients to provide, seek, and verify information in the medical consultation. The information verifying section was designed to train patients to check understanding by asking the physician to repeat or clarify what the physician had just said. To facilitate the learning process, patients were also offered examples. It was found that trained patients asked more questions to verify what was said and their questions were more sophisticated in comparison with untrained patients.

Kim *et al.* (2003)) initiated a program called "smart patient coaching" in which part of the training consisted of instructing patients to ask the provider for clarification when the patient did not understand something during the consultation. It was found that trained patients asked more overall questions, expressed more concerns, but did not ask more clarifying questions in comparison with the untrained group.

In a recent review of literature, Harrington *et al.* (2004) found that patients who received communication skill training, regardless of the type of training, showed a consistent increase in requests for clarification. They argued that patients may feel more comfortable to ask questions for clarification than to initiate questions of their own. Clarifying questions are based on the content of the on-going conversation, thus perceived as appropriate for patients to ask.

From the above literature review on a handful of studies training patients to verify information during medical consultation, it seems that patient satisfaction was seldom measured. The present study used four aspects of patient satisfaction to measure the effectiveness of training on information verifying. These four dimensions are overall satisfaction, relationship satisfaction, communication satisfaction and expertise satisfaction.

The present study explores:

(1) whether trained patients would score higher in the above-presented four aspects of satisfaction (RQ1);

(2) whether male patients would score differently than female patients on satisfaction scales in the trained and untrained groups respectively (RQ2);

(3) whether patients' demographic variables such as age, education level and health status would influence their score on the satisfaction scale in the trained and untrained groups respectively (RQ3).

The rationale to emphasize the relationship between patients' gender and satisfaction was (RQ2) to explore whether male and female patients should be trained differently in future training programs since they seem to communicate differently in the medical consultation (Brink-Muinen *et al.*, 2002; Clark *et al.*, 1991; Hall *et al.*, 1994). The rationale for RQ3 stemmed from a notion by Harrington *et al.* (2004)) that few studies have examined the relationship between patients' demographic variables and outcome measures such as patient satisfaction.

Method
Procedure
Permission for this study was granted by the ethical review committee of the University of Northern British Columbia, Canada. A clinic in a Northern city of the province of British Columbia was the chosen site for the study. The main reason for this choice was that it is the biggest clinic in this city and the director of the clinic has

an intense interest in research. The clinic has eight male and two female general practitioners. An initial meeting between the researchers and the head of the clinic was held to discuss the feasibility of conducting this research. The head of the clinic then obtained permission and support from the physicians and staff members in the clinic. The researcher then met with the ten physicians and other medical staff (nurses and receptionists) to explain the nature and procedure of the study, and to determine which days would be best suited for data collection.

Posters were put up in the clinic to draw attention to the research. A table was set up in the vestibule of the clinic and data collection began. When a patient entered the clinic for an appointment, he or she was greeted and asked whether they would like to participate in the study. Approximately two out of ten patients declined to participate. The reasons given were mostly "sorry, I am not in the research mood today" or "I am late for my appointment". The site in which the study took place is a small northern city where research is a new concept and people are generally very supportive. When a patient declined to participate, they would smile to the researcher with an apology. Once a patient agreed to participate, he or she was randomly assigned to either the experimental or the control condition. Participants in the experimental condition were given a brochure containing five ways to request their physicians to explain a previously stated piece of information (Appendix). After they read the brochure, the researcher rehearsed the materials with them until they had mastered the content. Once learning was complete, the researcher queried whether or not the patient would feel confident and comfortable to ask these questions during the interview. If a participant was hesitant, the researcher again reviewed the materials and gave assurance that it was all right to ask their physicians questions. The training process lasted 10-15 minutes. The control group was not given anything to study or read. Although the physicians knew the nature of this study, they were not told which patient was in which group (intervention or control).

As soon as participants returned from their appointment, they were informed, in lay terms, about the purpose of this research. They were then asked to sign an informed consent sheet with no attached conditions and the freedom to withdraw at any time. After the consent form was signed, all participants, from both groups, filled out a patient satisfaction questionnaire. When participants completed the questionnaire, they were given an opportunity to ask questions about this study. They were also given a telephone number that they could call to learn about the results of the research in future.

Participants
The sample was composed of 114 adults, 57 males and 57 females. Half of the participants were in the experimental group and half in the control group. Males and females were evenly distributed in both experimental and control groups. The age of participants ranged from 25 to 75 years and was evenly distributed, 16.7 percent in their 20s, 18.4 percent in their 30s, 17.5 percent in their 40s, and 21.1 percent in their 50s, 60s and 70s. ANOVA did not indicate any statistically significant difference in the means of age between the experimental and control groups. About 8 percent of the participants had grade education (coded as 1), 38.6 percent had high school education (coded as 2), 30.7 percent had community college education (coded as 3), and 22.8 percent had university education (coded as 4). ANOVA did not indicate any

statistically significant difference in the means of education between the experimental and control groups. About a quarter of the participants (24.6 percent) rated their health as "excellent" (coded as 1), 54.4 percent rated their health as "good" (coded as 2), 15.8 percent rated their health as "fair" (coded as 3), and 5.3 percent rated their health as "poor" (coded as 4). ANOVA did not indicate any statistically significant difference in the means of self-rated health status between the experimental and control groups.

The majority of the participants (80.7 percent) had seen the same doctor for "years" (coded as 3), 14 percent had seen the same doctor for "months" (coded as 2), and 5.3 percent had seen the same doctor for "weeks" (coded as 1). ANOVA did not indicate any statistically significant difference in the means of "length of time seeing the same doctor" between the experimental and control groups.

Training material for the experimental group
The training material was developed based on the theory of Conversational Grounding as described previously, a brochure outlining five different ways to make requests of physicians (Appendix) during a medical interview. The purpose of these requests was to have a previously elicited piece of information repeated in various ways or to repair a misconception or reformulate an unclear statement or question.

Patient satisfaction
Patient satisfaction was measured by 13 questions which constituted four categories: overall satisfaction, communication satisfaction, expertise satisfaction and relationship satisfaction. The 13 questions were directly taken from a questionnaire used by Roter *et al.* (1997)). The four categories were similar to those used by Evans *et al.* (1992)), who differentiated physician-patient communication into expressing interest, technical competence and affection tone.

Overall satisfaction was made up of four questions: "the goal of my visit today was achieved", "my doctor told me all I wanted to know about my condition and treatment", "I have health problems which should have been discussed today but were not" (the scale for this question was reversed for data analysis purpose) and "my doctor answered all my questions". Item analysis revealed a reliability coefficient of .85 (standardized alpha), with an item mean of 3.84 (SD = 1.02). On a Likert scale, "strongly disagree" was coded as 1, "disagree" as 2, "unsure" as 3, "agree" as 4 and "strongly agree" as 5. A mean of 3.84 indicates medium to high satisfaction.

Relationship satisfaction contained three questions: "my doctor acted bossy and domineering at times during my visit today", "my doctor made me feel important today", and "my doctor seemed to be in a hurry". Standardized item alpha was .82 with an item mean of 3.84 (SD = 1.07).

Communication satisfaction consisted of three questions: "my doctor asked me whether I understood what he/she had told me about my condition or treatment", "whether I was satisfied with the way my doctor and I communicated today", and "during my visit today, did I feel there were times when my doctor and I mis-communicated". Standardized item alpha was 0.85 with an item mean of 3.89 (SD = 1.4).

Expertise satisfaction consisted of three questions: "I have great confidence in my doctor", "my doctor has a reasonable understanding of my life circumstances", and

"my doctor has a good understanding of my past health history". Standardized item alpha was .89 with an item mean of 3.83 (SD = 1.03).

Compliance refers to answers to the question: "how often do you make life-style changes (e.g., quit smoking; quit drinking) as instructed by your doctor." On a Likert scale, "never" was coded as 1, "occasionally" as 2, "sometimes" as 3, "often" as 4, and "always" as 5.

In addition, patients were asked to indicate what type of medical interview they preferred. The choices given were "a bit of social talk and then proceed to the patient's symptoms and concerns", "a combination of both social and business-like discourse throughout the medical interview" and "a business-like discourse throughout the medical interview".

Results

The means of the four patient satisfaction variables (overall satisfaction, relationship satisfaction, communication satisfaction and expertise satisfaction) by group (experimental group vs control) are displayed in Figure 1. As indicated by Figure 1, the experimental group demonstrated higher scores than the control group on all four dimensions of satisfaction.

MANOVA was used to examine the first two research questions stated previously:

(1) Whether patients in the experimental group had higher satisfaction scores than the patients in the control group.

(2) Whether there was a significant difference between the male and female patients in their means of satisfaction scores in the experimental and control groups respectively.
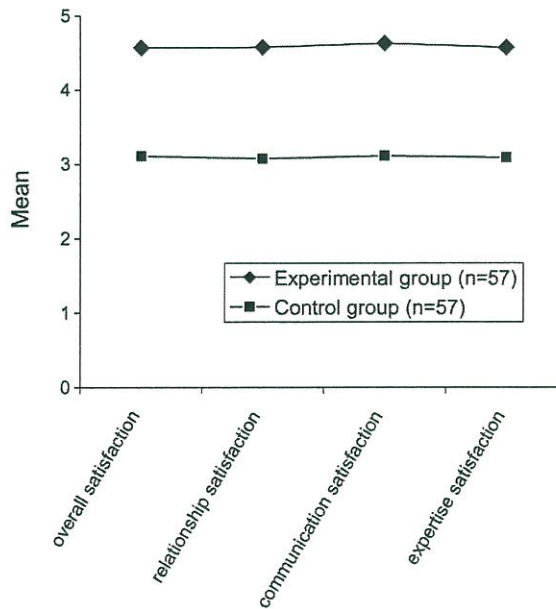

Figure 1.
Patient satisfaction by group

To test for group (experimental vs. control) main effects, gender main effects and group by gender interaction, a 2 by 2 MANOVA was conducted. The analysis showed a significant group effect, $F(4, 107) = 40.31, p < 0.0001$, Wilks' Lambda $= 0.39, \eta^2 = 0.61$, a significant gender effect, $F(4, 107) = 4.61, p < 0.005$, Wilks' Lambda $= 0.85$, $\eta^2 = 0.15$, but no significant group by gender interaction.

ANOVA indicated that patients in the experimental group scored significantly higher (more satisfied) than patients in the control group on overall satisfaction, $F (1, 112) = 118.36, p < 0.0001$, on relationship satisfaction, $F (1,112) = 107.02$, $p < 0.0001$, on communication satisfaction, $F (1,112) = 112.69, p < 0.0001$, and on expertise satisfaction, $F (1,112) = 116.37, p < 0.0001$.

Within the experimental group, ANOVA showed a significant difference between the mean scores of males and females on relationship satisfaction, $F(1, 55) = 5.4, p < 0.05$, females having higher scores than males. Males and females did not differ significantly in the other three dimensions of patient satisfaction.

Within the control group, ANOVA did not show any statistically significant difference between the mean scores of males and females on the four patient satisfaction dimensions. Table I shows the mean scores of males and females in the experimental and control groups respectively.

Patient satisfaction and patient demographic variables
Pearson correlation was used to examine the third research question: what demographic variables were correlated with patient satisfaction (i.e. overall satisfaction, relationship satisfaction, communication satisfaction, and expertise satisfaction)? In the experimental group, age was significantly correlated with relationship satisfaction, communication satisfaction and compliance (see Table II). Patients' education level was significantly correlated with expertise satisfaction; more educated patients tended to be more satisfied with their physicians' technological abilities. Compliance was significantly correlated with communication satisfaction; patients were more likely to comply with physicians' instructions when they were more satisfied with the way their physicians conversed with them.

In the control group, patient age was significantly correlated with communication satisfaction; older patients tended to be more satisfied with the way their physicians conversed with them (see Table III). Another significant correlation was between patients health status and communication satisfaction; patients who were poorer in health were more satisfied with the way their physicians conversed with them. Unlike

Dimensions of satisfaction	Gender	Experimental			Control		
		M	SD	n	M	SD	n
Overall satisfaction	M	4.60	.39	29	3.28	0.93	28
	F	4.54	.43	28	2.93	0.90	29
Relationship satisfaction	M	4.45	.48	29	3.04	0.91	28
	F	4.73	.42	28	3.12	1.07	29
Communication satisfaction	M	4.57	.48	29	3.21	0.93	28
	F	4.69	.36	28	3.04	0.93	29
Expertise satisfaction	M	4.47	.56	29	2.95	0.79	28
	F	4.67	.66	28	3.24	0.83	29

Table I.
Means of patient satisfaction by group and gender

Table II.
Intercorrelations among patient demographic variables and patient satisfaction for the experimental group ($n = 57$)

	1	2	3	4	5	6	7	8	9	10
1. Patient age	—	-0.13	0.24*	0.05	0.22	0.43**	0.03	0.29*	0.38**	0.14
2. Patient education		—	-0.14	0.14	0.14	-0.05	0.02	-0.03	-0.03	0.25*
3. Patient health status			—	0.49**	-0.03	0.16	-0.21	0.16	0.01	-0.06
4. Number of visits				—	0.05	0.10	-0.06	0.13	0.16	0.35**
5. Length with the physician					—	0.11	0.12	0.2	-0.09	0.49**
6. Compliance						—	0.14	0.13	0.36**	0.26**
7. Overall satisfaction							—	0.17	0.14	0.28*
8. Relationship satisfaction								—	0.51**	0.30*
9. Communication satisfaction									—	0.35*
10. Expertise satisfaction										—

Notes: * Correlation is significant at the 0.05 level (1-tailed); ** correlation is significant at the 0.01 level (1-tailed)

	1	2	3	4	5	6	7	8	9	10
1. Patient age	—	-0.18	0.32*	0.28	0.15	0.15	0.12	0.17	0.23	0.18
2. Patient education		—	-0.14	-0.19	-0.20	-0.10	0.19	0.17	0.08	-0.04
3. Patient health status			—	0.54**	0.01	0.11	0.18	0.16	0.28*	0.10
4. Number of visits				—	0.08	0.13	0.11	0.03	0.09	0.15
5. Length with the physician					—	0.09	-0.19	-0.14	-0.10	-0.02
6. Compliance						—	0.15	0.19	0.16	0.20
7. Overall satisfaction							—	0.72**	0.77**	0.58**
8. Relationship satisfaction								—	0.74**	0.73*
9. Communication satisfaction									—	0.73*
10. Expertise satisfaction										—

Notes: * Correlation is significant at the 0.05 level (1-tailed); ** correlation is significant at the 0.01 level (1-tailed)

Table III.
Intercorrelations among
patient demographic
variables and patient
satisfaction for the
control group ($n = 57$)

the experimental group, the control group demonstrated high inter-correlations among the four satisfaction variables (Table III).

The type of medical interview
In addition to the above three research questions, this study also solicited patients' perceptions on three issues. Question 1 asked: "in what fashion did you feel you and your doctor communicated today?" Most of the patients (62.3%) indicated that they first exchanged a few pleasantries, and then talked about symptoms and concerns. Thirty-six percent indicated that the physician started with the patient's symptoms and concerns right away. Only 1 percent indicated that they wasted some time talking about unrelated issues (i.e. too many pleasantries).

The second question asked patients to indicate what type of medical interview they preferred. About half of them (46.5 percent) expressed that they prefer "a bit of social talk and then proceed to the patient's symptoms and concerns". About a third (31.6 percent) preferred a combination of both social and business-like discourse throughout the medical interview. Twenty-two percent of them indicated that they preferred a business-like medical interview (i.e. get down to my symptoms and concerns right away).

The last question asked patients "how often do you make life-style changes (e.g. quit smoking, quit drinking as instructed by your doctor)". Eleven percent answered "always", 16.7 percent answered "often", 28.1 percent said "sometimes", 26.3 percent responded "occasionally", and 17.5 percent said "never".

Discussion
The data has generated several intriguing findings. Each will be discussed in light of its contribution to the field and implication for future training and research.

Patient training and patient satisfaction
The most significant result of this study is the substantial difference in satisfaction scores between the trained and untrained groups. If patient satisfaction is an indicator of better communication between the patient and the physician, then the training session was a success. It may be argued that patient satisfaction, unlike health outcome variables such as compliance (Cegala *et al.*, 2000) or improved health (Stewart, 1995; Weijts, 1994), is a subjective feeling and may not be a reliable measure for the effectiveness of training. The counter argument would be that if most of the 57 participants in the experimental group felt the same way and in the same direction, then this seems to be an indication that the training session did have an effect. Although no pretests were given, participants in the experimental and control groups did not differ significantly in any of the demographic variables (age, education level, length of seeing the same physician, and self-reported health status). It can then be argued that the difference in satisfaction scores between the trained and untrained groups was attributable to training.

Past researchers have indicated that several factors may contribute to the effectiveness of training sessions. First, patients may be empowered by the training process (Tran *et al.*, 2004; McCann and Weinman, 1996) because training increases patients' self-efficacy in question asking (Kidd *et al.*, 2004; McGee and Cegala, 1998). Kim *et al.* (2003)) found that trained patients achieved higher levels of assertiveness

than untrained patients. Training significantly increased patients' confidence in their ability to communicate with their providers. After training, patients no longer perceive themselves as passive recipients of medical care (Bertakis, 1977; Kim *et al.*, 2003; Walker *et al.*, 2001), they begin to realize that they too can have some control over their health care (Zimmerman, 1984).

Second, the training session may have provided patients with a message: they have a responsibility to work with their physicians in order to communicate effectively. It has been widely believed in the general public that physicians are solely responsible for effective communication with patients (Street, 2001; Tabac, 1988). It seems irresponsible and unfair to leave the success of a medical interview solely to physicians who are usually overworked and stressed. Patients also have responsibility to make the medical communication effective.

Third, the training session may have enabled patients to ask more questions and actively participate in the consultation (Ford *et al.*, 1995; Robinson and Whitfield, 1985; Street *et al.*, 1995), a process known as continually negotiated and co-defined (Friederichs-Fitzwater *et al.*, 1991; Bartlett *et al.*, 1984). In turn, the active involvement of patients may have contributed to patient satisfaction (Beisecker, 1990; Bensing, 1991; Bertakis, 1977).

Fourth, the training session may have helped to legitimize patients' requests and questions (Cegala, 1997; Kim *et al.*, 2003), thus, helping them overcome cognitive barriers Kidd *et al.*, 2004 noted that some patients believe that asking questions may take too much of their physicians' time, or they are afraid to appear inadequate (e.g. "dumb", Tran *et al.*, 2004). Other researchers have observed that physicians usually do not encourage patients to ask questions (Beisecker, 1990; Friederichs-Fitzwater *et al.*, 1991; Weijts, 1994). As a result, patients feel uncomfortable participating in the medical interview (Ley, 1988; Street, 1991). In a recent study, microanalysis of audio-taped medical consultations indicate that physicians spent 12 percent of their entire conversation asking patients close-ended questions (Desroches, 2003; Li *et al.*, 2004). On the contrary, patients had little chance to ask close-ended questions (1 percent) or open-ended questions (0.7 percent).

Finally, training, especially face-to-face coaching immediately before the consultation, may have helped patients to overcome anxiety (Lincoln *et al.*, 2000). It has been reported that some patients experience high levels of anxiety prior to medical consultations (Greenfield *et al.*, 1985). A less apprehensive patient would be more pleasant to interact with (e.g., more attentive and cooperative), and encourage physicians to be more agreeable and informative.

All these factors may have collectively or individually contributed to the increased satisfaction of patients. In previous research, patients' satisfaction has been studied by researchers who trained patients to seek information and/or to give information (Fleissig *et al.*, 1999; Roter, 1984). The results have been ambiguous. Most studies did not find any significant increase in patient satisfaction (Anderson *et al.*, 1987; Butow *et al.*, 1994; Hornberger *et al.*, 1997; McCann and Weinman, 1996). In fact, a few studies found a decrease in patient satisfaction after training (Roter, 1977; Roter, 1984).

A perplexing finding in the present study was that the four satisfaction variables were highly correlated with each other in the control group but not in the experimental group. It may indicate that trained patients became more aware of the communication

process and the performance of the physician than untrained patients. When patients' awareness is raised (Hornberger *et al.*, 1997), they may have received a clearer picture of their physicians' performance. For example, a technically competent physician (high on expertise satisfaction) may or may not be able to communicate effectively (low on communication satisfaction). A charming physician (high on relationship satisfaction) may or may not be technically competent (low on expertise satisfaction). The phenomenon may be explained by what Cegala *et al.* (2000) observed: trained patients were more sophisticated than untrained patients.

Patient satisfaction and patient demographic variables
In terms of the relationship between patient satisfaction and patients' demographic variables, the experimental and control groups exhibited different patterns. As there was no significant difference in any of the demographic variables between the two groups, these differences could arguably be attributable to training. In the experimental group, age was significantly correlated with relationship satisfaction, communication satisfaction and compliance. Older patients were more satisfied with the way their physicians treated them and communicated with them. In the control group, age was only correlated with communication satisfaction and the correlation was lower than in the experimental group.

Similarly, patients' education level was significantly correlated with physicians' expertise communication in the experimental group but not in the control group. A possible explanation may be that the training session raised the awareness of the more educated patients, thus enabling them to play a more active role in the interaction. This active involvement may have prompted physicians to be technically more informative.

It is worth noticing that over half of the patients reported that they do make life-style changes such as quitting smoking and drinking as instructed by their physicians. The other half only "occasionally" or "never" did as their physicians told them to do. The message for physicians is that in terms of life-style change, they are still perceived as authority (Li, 1999; Li and Rosenblood, 1996) and their instructions are followed by at least half of their patients.

Further research
An apparent drawback of this study is that no audio or video-taping of the physician-patient conversation was conducted to examine whether the trained patients actually engaged in more question-asking than the untrained patients. Without these data, the achieved results might be arguably attributable to the Hawthorn Effect, that is, the mere attention patients received from the researcher may have played a role in increased patient satisfaction. Therefore, future researchers using this method are advised to collect data on the actual conversation processes.

Conclusion and implications for research and practice
This study has three implications for researchers as well as practitioners in the field of Health Education. First, it applied a psycholinguistics theory, conversational grounding to patient education, and received encouraging results. Second, the success of the short training session leads us to believe that a combination of pamphlet and face-to-face coaching may be an effective method in patient training although it is

time consuming and expensive. In designing the training material, we kept it simple, short, and easy to remember. Its content is general instead of specific, so that it is appropriate for patients with a variety of health problems. Finally, differential training programs for male and female patients are not recommended since no consistent gender difference was found in patient satisfaction in both experimental and control groups.

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Further reading

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Appendix

The following Instruction sheet is for participants in the training group only.

In today's visit, we would like you to ask questions of your doctor whenever you feel that your doctor speaks too fast, or uses words that you don't understand. If you don't let your doctor know that you do not understand something that he or she is trying to tell you, your doctor may assume that you do understand. Your questions will help your doctor to clarify or explain him or herself better. Your questions will also help you understand your doctor better. These are common questions which we use a great deal in our daily conversations. However, when we talk to our doctor who is usually on a tight schedule, we often forget to ask these questions. Now I would like you to take a few minutes to go through these questions.

(1) I beg your pardon, could you repeat that please?

(2) Could you explain this in other words please?

(3) Could you slow down please? I can't follow you.

(4) Could you summarize what you have said please? I forgot some details.

(5) Could you please draw this out so I can visualize what you are saying?

Those are some examples; you may ask other questions or phrase your questions in a way that is different from the above. Thank you.