

Which Medical Interview Behaviors Are Associated With Patient Satisfaction?

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Objective: The objective of this study was to investigate the association between several medical interview behaviors and patient satisfaction. **Methods:** The subjects were 158 new patients who visited an outpatient facility of a university hospital in Japan. All medical interviews were videotaped and reviewed by a trained rater using a medical interview rating scale (Takemura Medical Interview Rating Scale) for evaluating medical interview behaviors. To measure patient satisfaction, a self-administered questionnaire was also developed. Both the rating scale and the questionnaire were assessed for validity and reliability beforehand. **Results:** A significant positive association was found between the behaviors of reflection and legitimation on the one hand, and patient satisfaction on the other. The positive association between reflection and patient satisfaction existed after adjusting for both the duration of the interview and the other medical interview behaviors used. The association between legitimation and patient satisfaction also existed after adjusting for the duration of the medical interview but disappeared after adjusting for the other medical interview behaviors used. When we investigated the strength of the relationship between each medical interview behavior and patient satisfaction, reflection was found to be the strongest determinant of patient satisfaction. **Conclusions:** This research revealed a significant positive association between reflection or legitimation and patient satisfaction in an actual clinical practice setting.

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Good physician-patient communication during a medical interview can improve patient satisfaction,^{1,2} and improved patient satisfaction can lead to better health outcomes.³⁻⁶ Many specific medical interview behaviors are thought to contribute to patient satisfaction during the medical interview, including reflection,⁷⁻¹⁰ legitimation,¹¹ patient centeredness,¹² respect,^{11,13} and others. These behaviors have been described in several articles and medical interview textbooks.⁷⁻¹³

The first behavior, reflection, refers to the interviewer's statement of a feeling or emotion observed in the patient.¹¹ For example, interviewers use reflection when they say, "You look a bit sad," to respond to a patient's depressive talk about a family member's illness. Reflection can help patients feel understood, and patients who feel understood by their physicians are generally more satisfied and feel better.^{7,8} Several studies have also reported that this kind of empathetic communication

improves other outcomes important to patients, including patient satisfaction, without increasing the overall interview time.^{9,10}

Taking the ability to empathize a step further, the second behavior, legitimation, refers to the act of specifically communicating acceptance of the patient's emotional experience.¹¹ A statement like "I can understand why you feel anxious about that incident," is an example of legitimation. After the interviewer has carefully listened to a patient's description of an emotional reaction, the interviewer can legitimize by letting the patient know that these feelings are understandable and acceptable.

The third behavior, patient-centered behavior, is widely advocated, although there is little consensus as to its meaning.^{14,15} It encompasses several principal domains, including exploring the illness experience or expectation, the whole person, finding common ground, health promotion, and enhancing the doctor-patient relationship.¹⁵ Many studies have concluded that there is a significant positive relationship between patient-centeredness and patient satisfaction.¹²

Finally, the interviewer's honest expressions of respect for patients represent a fourth behavior that can increase patient satisfaction. Respect is implied not only by attentive listening and nonverbal signals but also by respectful communication strategies, such as addressing the patient by name.^{11,13}

Many studies on the relationship between medical interview behaviors and patient satisfaction have used a relatively small number of subjects, and no adjustments have been made to control for significant confounders like the duration of the medical interview.^{16,17} Some studies have used standardized patients, rather than real patients in a clinical practice. The objective of our present study was to use a relatively large sample of patients in an actual **clinical practice setting to investigate** whether using the medical interview behaviors of reflection, legitimation, inquiring about the patient's opinions, inquiring about the patient's expectations, and using the patient's name were associated with higher patient satisfaction.

Methods

Subjects

The subjects were 158 patients (82 male, 76 female) who visited the outpatient facility of the Department of Family Medicine, Mie University School of Medicine Hospital, Mie, Japan, as new patients from December 2004 to May 2005. All of the subjects were Japanese over 15 years of age with common diseases such as hypertension, hypercholesterolemia, diabetes, and depression. Patients came from a wide range of social classes and were from both rural and urban areas.

Measurements

The patients were interviewed by 21 fifth-year medical students participating in a family medicine clinical clerkship (seven female and 14 male), nine family medicine residents (four female and five male), and two male faculty of the Department of Family Medicine. The study protocol was approved by the Research Ethics Committee of Mie University School of Medicine.

The medical interviews were videotaped and reviewed by a trained rater (a faculty member of the Department of Family Medicine) using the Takemura Medical Interview Rating Scale (TMIRS). The duration of each medical interview was measured by referring to the videotape.

Interview Rating

The TMIRS was developed by the authors to assess the use of specific medical interview behaviors during the medical interview. Some systems of the Roter Interaction Analysis System (RIAS) were used to build this scale.¹⁸ We reviewed medical interview textbooks to identify rating scale items.^{11,19} We then invited five

Japanese experts in the teaching of medical interview behaviors and patient-physician communication to join the item development group, including three family physicians, a general internist, and a behavioral scientist. They were asked to discuss the items of the rating scale, suggest additional items, and compare the items identified during their qualitative work with the items previously identified. In this way we chose to study reflection, legitimation, inquiring about the patient's opinions, inquiring about the patient's expectations, and using the patient's name as the measurable medical interview behaviors that may contribute to patient satisfaction.

Reflection and legitimation were assessed on a 6-point scale (not used, used once, used twice, used three times, used four times, used five or more times). The other behaviors were assessed on a 2-point scale (not used, used). For example, if an interviewer recognized the patient's feeling or emotion and then stated it to the patient, then reflection was counted as one. If the interviewer accepted the patient's emotional experience and verbally or nonverbally let the patient know that the experience was rational or understandable, then legitimation was counted as one.

Once developed, the TMIRS was assessed for reliability. Test-retest reliability was examined for each item of the medical interview rating scale using 89 videotaped medical interviews. The same rater then reexamined the same videotape of the medical interview 1 week after the first evaluation. The agreement for each scored behavior was investigated, and reliability measurements (Cohen's kappa coefficient) were measured. Cohen's kappa coefficients ranged from 0.95 to 1.00, indicating that test-retest reliability was present.

Patient Satisfaction

A self-administered questionnaire was also developed to evaluate patient satisfaction in this setting. Because a detailed explanation of this instrument has been published previously,²⁰ its development will be only briefly described here. First, a qualitative method was used to develop question items for the patient satisfaction questionnaire. The selection of question items was guided by a principal components analysis and a factor analysis, using Varimax rotation. The reliability of the questionnaire was assessed using a test of internal consistency. All subscales of the questionnaire were internally consistent, since the Cronbach alpha values for all subscales were more than 0.70 (0.77–0.85). The inter-correlation matrix of subscales was analyzed by calculating the Pearson correlation coefficients. On the whole, these subscales intercorrelated positively and significantly. The concurrent validity was assessed to evaluate the association between the score of the current questionnaire and that of the visual analog scale or other

questionnaire using the Pearson correlation coefficient. The results indicated satisfactory concurrent validity of the questionnaire.

Kappa values were used to assess the test-retest reliability of each question item. The kappa values for each question item were greater than 0.6 (0.61–0.96), and the test and retest scores were highly correlated. Taken together, the above studies revealed that our patient satisfaction questionnaire had satisfactory validity, including content and concurrent validity, internal consistency, and test-retest reliability. Scores for this instrument range from 0 to 48, with the higher numbers indicating higher patient satisfaction.

Statistical Analyses

Data from a total of 158 medical interviews were eligible for analysis. The association between each medical interview behavior and patient satisfaction was analyzed by the ANOVA method. When the response involved a 6-point scale, a test for trend was calculated to assess the dose-response relationship. To control for confounding factors such as the duration of the medical interview or for the other medical interview behaviors used, we used the general linear method, which involves the method of least squares to fit general linear models. The strength of the relationships between medical interview behaviors and patient satisfaction was estimated using the value of partial R² calculated by means of regression analysis. All data were analyzed using SAS/STAT version 9.1 software (SAS Institute, Inc, SAS/

STAT 9.1 User’s Guide, volumes 1–7. Cary, NC: SAS Institute, Inc., 2004.

Results

The mean (standard deviation [SD]) duration of the medical interview was 19.8 (11.7) minutes. The mean (SD) patient satisfaction score was 33.0 (5.6) on a scale from 0 to 48.

Table 1 shows the frequency of use of specific medical behaviors. The two most frequently used behaviors were reflection and inquiring about the patient’s opinions. Reflection was used more than legitimation. The majority of the interviewers asked about the patient’s opinions but did not ask about the patient’s expectations. Many interviewers did not use the patient’s name during medical interviews.

Table 2 reveals the associations between medical interview behaviors and patient satisfaction. There were significant positive associations between reflection and patient satisfaction and between legitimation and patient satisfaction. Because we also found a significant association between the duration of the medical interview and patient satisfaction in this study ($t=2.91, P<.0041$), these associations were adjusted according to the duration of the medical interview. The positive association between reflection and patient satisfaction remained after adjusting for the duration of the medical interview, and it also remained after adjusting for the other medical interview behaviors used. On the other hand, the positive association between legitimation and patient satisfaction remained after adjusting for the duration of the medical interview, but it disappeared after adjusting for the other medical interview behaviors used. The behaviors of inquiring about the patient’s opinions, inquiring about the patient’s expectations, and using the patient’s name were not significantly related to patient satisfaction in the present study.

We expected that the level of training of the interviewer might be associated with patient satisfaction. However, whether the interviewer was a medical student or a physician was not significantly associated with patient satisfaction ($F=2.31, P=.13$).

We also expected that the nonverbal communication may have been additional confounders for which the data should have been adjusted.^{21,22} However, we investigated the association between several types of nonverbal communication, ie, interpersonal distance, angles of facing, posture, facial expressions, and eye contact and patient satisfaction in the present study, and none of the nonverbal communication skills were significantly related to patient satisfaction ($F=0.21, P=.81; F=2.65, P=.10; F=0.34, P=.71; F=0.80, P=.45; F=0.53, P=.59$; respectively).

When we investigated the strength of the associations between the use of each medical interview

Table 1

Frequency of Use of Specific Medical Interview Behaviors (n=158)

Behavior was:	Number of Interviews (Percent)			
	Reflection		Legitimation	
Not used	26	(16.2)	77	(47.8)
Used once	46	(28.6)	51	(31.7)
Used twice	36	(22.4)	23	(14.3)
Used three times	26	(16.2)	5	(3.1)
Used four times	14	(8.7)	1	(0.6)
Used five times or more	13	(8.1)	4	(2.5)
	Patient’s Opinions		Patient’s Expectations	
Not asked	32	(19.9)	86	(53.4)
Asked	129	(80.1)	75	(46.6)
	Patient’s Name			
Not used	99	(61.5)		
Used	62	(38.5)		

Table 2

Associations Between Medical Interview Behaviors and Patient Satisfaction

Behavior was:	Patient Satisfaction*	Association**		Association Adjusted for Duration**		Association Adjusted for Other Behaviors Used**	
		F	P Value	F	P Value	F	P Value
Reflection		3.31	.0072	7.13	.0080	3.33	.0071
Not used	34.6						
Used once	37.0						
Used twice	37.2						
Used three times	37.7						
Used four times	37.8						
Used five times or more	43.2						
P Value for trend	.0007						
Legitimation		3.02	.012	7.70	.0045	1.50	.19
Not used	35.5						
Used once	38.8						
Used twice	39.1						
Used three times	39.6						
Used four times	47.0						
Used five times or more	38.3						
P Value for trend	.0041						
Patient's opinion		0.00	.99	0.00	.99	0.40	.53
Asked	37.3						
Not asked	37.3						
Patient's expectation		0.13	.71	0.36	.56	0.32	.57
Asked	37.5						
Not asked	37.1						
Patient's name		2.00	.16	5.15	.044	0.42	.52
Used	36.7						
Not Used	38.2						

* A patient satisfaction questionnaire developed by the authors was used, with possible scores from 0 to 48.

** The General Linear Model was applied.

behavior and patient satisfaction, reflection showed the strongest positive association, followed by legitimation. This is shown in Table 3.

Discussion

The present study showed a positive association between reflection and patient satisfaction and between legitimation and patient satisfaction. Several studies have indicated the benefits of using reflection during the medical interview to enhance patient satisfaction.⁸⁻¹⁰ Our findings are consistent with these previous works.

One interpretation is that the more psychosocial talk in which the patient engages and the less biomedical talk, the more satisfied is the patient. Another interpretation is that psychosocial talk indicates less physician dominance, leading to more patient satisfaction.⁷ Little evidence has been previously presented for the relationship between the use of legitimation and patient satisfaction, although several textbooks mention its benefit.^{8,11} The present study helps validate the importance of legitimation in patient satisfaction.

Table 3

Strength of the Associations Between Patient Satisfaction* and the Use of Specific Medical Interview Behaviors

<i>Medical Interview Behaviors</i>	<i>Partial R²</i>	<i>P Value</i>
Reflection	0.0299	.0007
Legitimation	0.012	.14
Inquiring about patient's opinion	0.0011	NS
Inquiring about patient's expectation	0.0029	NS
Using patient's name	0.0026	NS

NS—not significant

Partial R² values were calculated by means of regression analysis.

* A patient satisfaction questionnaire developed by the authors was used.

Regarding the association between reflection and patient satisfaction, an effect was found when physicians used reflection or when they used it five times or more. Use of reflection on the continuum between one and four times did not make a difference. This may mean that there were two thresholds at which reflection changes effectiveness, between not used and used once and between used four times and used five times. A similar phenomenon was found for the effect of legitimation on patient satisfaction, between not used and used four times. Similarly, this may mean that there were two thresholds at which legitimation changes effectiveness, between not used and used once and between used three times and used four times.

The behavior of patient centeredness focuses on four principal dimensions of patients' experience of illness: their feelings about being ill, their ideas about what is wrong with them, the effects of the problem on their daily functioning, and their expectations of what should be done.¹⁵ If patient centeredness is related to patient satisfaction, then inquiring about the patient's opinions and expectations could also be related to it.¹² However, the present study disclosed no significant association between either of these behaviors and patient satisfaction.

Possibly there is no association between inquiring about patients' opinions and expectations and patient satisfaction in the clinical setting in Japan, or possibly these behaviors contribute only minimally to patient satisfaction. On the other hand, the interviewers' attempts to determine the patients' opinions and expecta-

tions may not have enhanced patient satisfaction in the present study because these attempts were not always communicated directly to the patient.

Another possible reason for the lack of a significant association may have been the use of a 2-point scale to assess whether or not the interviewer tried to obtain the patient's opinions or expectations; a more complex scale might have provided more powerful assessment. Further studies are needed to clarify the effect of this behavior on patient satisfaction.

Somewhat unexpectedly, the behavior of using the patient's name was not related to patient satisfaction in this study until the adjustment for duration of the medical interview. After this adjustment, the association became significant. This finding might be explained as follows. When the duration of the medical interview is short, the examiner would have fewer opportunities to use the patient's name and thus fewer opportunities to increase the patient's satisfaction, while a longer interview would afford more opportunities to use the patient's name and satisfy the patient. Or this might be a cultural difference since Japanese tend not to use the patient's name. Again, further studies are needed to clarify the effect of this behavior on patient satisfaction.

Research Strengths

There were several strengths to the present research. First, we examined real patients in real clinical practice, and thus the results of this study can be generalized to daily clinical practice. Second, the number of subjects in this study was relatively large compared with previous studies, thus increasing the power of analysis. The third strength of the study was the rich dataset of videotaped interviews, which increased the reliability of the measurements. Fourth, we quantified both medical interview behaviors and patient satisfaction. Fifth, the reliability and validity of the medical interview rating scale and the self-administered patient satisfaction questionnaire were both evaluated in the present study. It is important to evaluate the reliability and validity of the measurement methods in studies of this type, and many previous studies have been weak in this regard.

Finally, important confounding factors such as the duration of the medical interview^{16,17} were evaluated in this investigation, which was not the case in some other reports. Adjustment for these confounding factors is expected to clarify the independent association between specific medical interview behaviors and patient satisfaction. Because we found a significant association between the duration of the medical interview and patient satisfaction in this study, this adjustment would appear to be essential.

Limitations

There were also some limitations in the present study. First, there may still **have been additional confounders** for which the data should have been adjusted, although several possible confounders had already been considered. For example, paralanguage (voice tone, volume, rate of speech, etc) and the interviewer's personality could contribute to patient satisfaction, in addition to the content of verbal communication. Another limitation of the study was the difficulty of quantifying a subjective experience, such as patient satisfaction. However, the questionnaire is still the gold standard for measuring patient satisfaction, and the validity and reliability of our questionnaire were evaluated and confirmed.

Conclusions

This research revealed significant positive associations between reflection and patient satisfaction and between legitimation and patient satisfaction in an actual clinical practice setting. These associations were preserved after controlling for confounding factors, such as the duration of the medical interview and the use of other medical interview behaviors. On the other hand, inquiring about the patient's opinions, inquiring about the patient's expectations, and using the patient's name were not significantly associated with patient satisfaction in this study. Further studies will be needed to clarify these associations.

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