

# Acupuncture practitioner–patient communication in Japan

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**Abstract:** We evaluated acupuncture practitioner–patient communication using pairs of practitioners and patients. Our primary objective was to evaluate the concordance of practitioner and patient perceptions in terms of explanations regarding consultation, therapy, and patient satisfaction. The subjects were 250 practitioners and their 1250 patients in Fukuoka, Japan. Answers were obtained from 91 acupuncture practitioners (36.40%) and 407 patients (32.56%). Of these, responses from 125 pairs without missing values were used for the analysis. When practitioner–patient communication, as evaluated by the difference between the patients' and the practitioners' perceptions with respect to the level of practitioner explanation, was good, patient outcome (ie, satisfaction with therapy, improvement in health) was also good. Factors related to poor practitioner–patient communication included age of the practitioner, the number of practitioners at a clinic, the experience of the practitioner, and the age of the patient. These findings may be useful in improving practitioner–patient communication.

**Keywords:** acupuncture therapy, communication, patient satisfaction, complementary therapies, professional–patient relations

## Introduction

The use of complementary and alternative medicine (CAM) is widespread in Japan; it was reported to be 76% in 2002 (Yamashita et al 2002). Among CAM users, 6.7% used acupuncture in the last year in Japan, while the number was 1.0%–2.8% in Europe and the US (MacLennan et al 1996; Eisenberg et al 1998; Ernst et al 2000). The relatively high percentage in Japan indicates that acupuncture is widely accepted in Japanese health care.

Takano and colleagues (2002) reported that the mean score for satisfaction with acupuncture, measured by a visual analog scale (VAS), was 81.4 in patients who consulted acupuncture clinics. Additionally, factors related to satisfaction with acupuncture have been shown to include the quality of treatment, communication factors between the patient and practitioner, and environmental factors related to the clinic (Takano et al 2002). Of these, communication between the patient and practitioner is obviously a two-way interactive process (Northouse and Northouse 1992). Thus, it is necessary to evaluate acupuncture–patient interaction from the viewpoints of practitioners *and* patients, simultaneously. That is, the interaction should be evaluated based on pairs of patients and acupuncture practitioners. Previous studies, however, have reported summary figures concerning communication measured from either the practitioner's or the patient's viewpoint.

Acupuncture is invasive and can lead to adverse events, such as side effects, and malpractice claims. Regarding side effects, prospective studies have shown that tiredness and drowsiness can occur (Yamashita et al 1998, 2000). As for malpractice claims, an analysis of liability cases arising from acupuncture, moxibustion, and massage therapies (Fujiwara 2004) suggested that acupuncture therapy caused adverse events at a rate of 0.60%. On the other hand, although the data are not necessarily limited to acupuncture, only a small

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proportion of patients, from 21.9% (Kamohara 2002) to 40.9% (Yamashita et al 2002), seem to disclose their use of CAM to their physicians. These facts highlight the importance of communication between acupuncture practitioners and patients. In particular, a smooth exchange of information and mutual communication of opinions seems to be needed to reduce or avoid adverse events in acupuncture therapy.

Using pairs of practitioners and patients, acupuncture practitioner–patient communication in patients attending acupuncture clinics in Japan was evaluated. Because a new methodology based upon practitioner–patient pairs may lead to new findings concerning acupuncture practitioner–patient interaction, the methodology adopted in the study should also be useful in addressing side-effect problems, through the promotion of improved practitioner–patient communication.

## Methods

### Study participation

This study enrolled 250 acupuncture practitioners and 1250 of their patients. The practitioners were randomly selected from 359 members of the Fukuoka Acupuncture and Moxibustion Therapy Association (FAMTA), and the patients were treated by these practitioners.

### Study period and procedure

The study was performed between November 2006 and February 2007. Questionnaires for practitioners and patients were mailed to participating practitioners via FAMTA. After receiving the forms, each practitioner distributed the forms to five patients, answered the questions regarding communication with each patient, and mailed back the completed forms to the research team. The five patients per practitioner were selected as follows. On one working day during the study period, the practitioner gave a questionnaire package to a patient who happened to visit the practitioner during a given time slot within each office hour (eg, the second patient for the hours beginning 9, 10, and 11 am). After receiving a questionnaire, with an explanation of this survey, the patients completed the questionnaire at home and mailed it to the survey team. This was to ensure that the presence of the practitioner did not influence their answers.

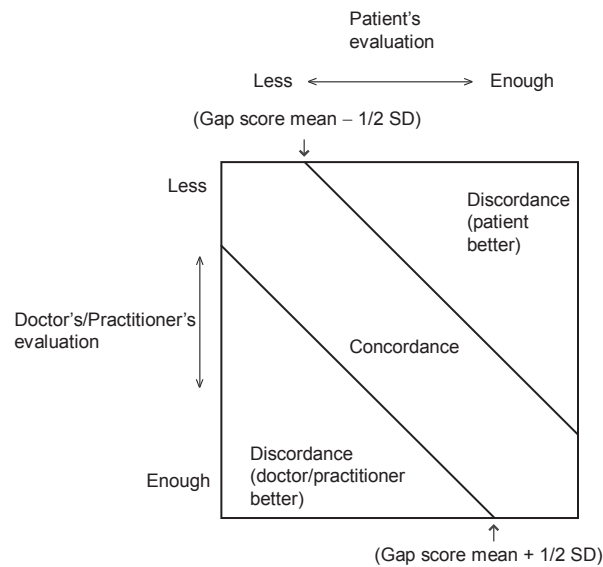
This study was conducted after an ethical review and approval by the FAMTA Board of Directors.

### Method for evaluating acupuncture practitioner–patient communication

A commonly used method for quantitative evaluation of physician–patient communication is the Roter Interaction

Analysis System (RIAS), in which an independent evaluator reviews a video recording of a physician–patient encounter and classifies the events in terms of the dimensions of content of therapy, relationship, and emotions (Levinson et al 1997; Roter et al 1997). Although this method has been used in many studies, it has problems, such as: (1) practitioners may cause significant selection bias because of difficulty in obtaining the cooperation of patients; (2) socially desirable effects may operate (Singleton et al 1988); (3) the amount of objective information does not agree with the patient’s subjective view of the amount of information (Street 1992); (4) the amount of the patient’s subjective information affects the patient’s outcome more strongly than does the amount of objective information (Street 1992); (5) only a small proportion of the total amount of information is conveyed in verbal form (Birdwhistell et al 1970; Mehrabian 1971); and (6) the method requires elaborate preparation and long-term analysis.

Hagihara proposed a method for the objective evaluation of physician–patient communications (Hagihara et al 2005, 2006a, 2006b) that avoids the above-mentioned problems of RIAS and also takes into consideration the observation that the patient’s subjective evaluation of the conversation during a consultation, and that of the physician’s explanation, have stronger effects than the amount of objective explanation offered in determining subsequent patient behavior (Northouse and Northouse 1992). In concrete terms, this method evaluates a physician–patient pair using questionnaire forms containing identical questions regarding physician–patient communication, and assesses the discordance between the physician’s and the patient’s perceptions regarding the extent of the physician’s explanation (Figure 1). In the present study, we followed the methods of Hagihara and colleagues (2005, 2006a, 2006b) to evaluate practitioner–patient communication using the gap between practitioner and patient perceptions (ie, practitioner score vs. patient score) with respect to the level of explanation by the practitioner. When the practitioner score is higher than the patient score (“Discordance, Doctor/Practitioner Better”), the likelihood exists that the practitioner may not be providing sufficient information as perceived by the patient (Figure 1). When the patient score is larger than the practitioner score (“Discordance, Patient Better”), the patient might not be fully understanding the practitioner’s explanation, as the practitioner feels that more clarification is needed (Figure 1). When the practitioner score is equal to the patient score (“Concordance”), the interaction is considered a good one (Figure 1). A survey that examined pairs of physicians in Fukuoka Prefecture and their patients (Hagihara et al 2005, 2006a, 2006b) showed



**Figure 1** Patients' and doctors' or practitioners' evaluations of the sufficiency of doctor or practitioner explanations in medical or therapy encounters. (1) Gap score = practitioner score–patient score; (2) “Discordance, Patient Better”: gap score  $<$  mean  $- \frac{1}{2}$  SD; (3) “Discordance (practitioner better)”: gap score  $>$  gap score mean  $+ \frac{1}{2}$  SD. With respect to the explanation given by a physician during treatment or the explanation given by an acupuncture practitioner during therapy, the comparison between the amount of explanation, as perceived by the physician or the acupuncture practitioner, and the amount of explanation as perceived by the patient falls into one of three categories: both are equal (“Concordance”), the former exceeds the latter (“Discordance, Physician/Practitioner Better”), or the latter exceeds the former (“Discordance, Patient Better”). “Concordance”, where the physician or practitioner demonstrates a similar perception to that of the patient, is the ideal situation. In the case of “Discordance, Physician/Practitioner Better”, the physician is likely to consider that a sufficient explanation has been given and to finish the explanation before the patient has fully understood the explanation. In the case of “Discordance, Patient Better”, the patient may jump to a hasty conclusion without listening to the physician's explanation in its entirety.

that “Discordance, Physician Better” was associated with a significantly lower patient satisfaction regarding therapy than “Concordance” or “Discordance, Patient Better,” and that a significantly larger proportion of patients visited multiple medical institutions for the same medical problem. Based on these results, they claimed that the dichotomy into “Discordance, Physician Better” and other cases (“Concordance” or “Discordance, Patient Better”) was a useful method for evaluating professional–patient communication. Thus, we assessed practitioner–patient communication using the dichotomy of “Discordance, Practitioner Better” (gap score  $>$  gap score mean  $\pm$  1/2 SD) and other cases “Concordance” or “Discordance, Patient Better” (gap score  $\leq$  gap score mean  $\pm$  1/2 SD), following the methods of Hagihara and colleagues (2005, 2006a, 2006b).

## Variables

For variables concerning the acupuncture practitioner, age, gender, length of clinical experience, and the number of

practitioners working at the same clinic were used. For the patients, age, gender, and length of each session were used.

For variables concerning acupuncture practitioner–patient communication, “explanation of consultation (practitioner)”, “explanation of consultation (patient)”, “explanation of therapy (practitioner)”, and “explanation of therapy (patient)” were used (see Appendix). Specifically, “explanation of consultation” and “explanation of therapy” consisted of four and seven items, respectively. For each item of “explanation of consultation” and “explanation of therapy”, the extent of the practitioner's explanation to the patient was evaluated by the practitioner and patient, independently, using the same response scale, ranging from 1 to 5, with higher scores being indicative of the respondent's perception that a more extensive explanation was given. Because the “gap in consultation” is the gap between the practitioner's “explanation of consultation (practitioner)” and the patient's scores for “explanation of consultation”, the practitioner's score was subtracted from the patient's score. Because the “gap in therapy” is the gap between the practitioner's “explanation of therapy” and the patient's scores for “explanation of therapy”, the practitioner's score was subtracted from the patient's score.

For variables concerning patient outcome, “patient satisfaction” and “improvement of health” were used (see Appendix). Patients were asked to evaluate the levels of satisfaction with acupuncture therapy and improvement of health using a response scale ranging from 1 to 5. Higher scores represented higher levels of satisfaction or health improvement. Additionally, “duration of therapy” and “out-of-pocket expenditure” were used as patient outcome variables. If a patient likes the therapy he/she receives, he/she is more likely to attend the clinic for a longer time. Thus, “duration of therapy” was also adopted as an outcome variable. “Duration of therapy” refers to the number of days from the first to the last day of consultation. It has been reported that patients' satisfaction with treatment, evaluated by VAS, was related to the opinion of the patients on the cost per treatment (Ishizaki et al 2005). Thus, “out-of-pocket expenditure” was also used as an outcome variable. Specifically, “out-of-pocket expenditure” refers to whether insurance helped pay for any treatment costs and whether the patient paid any of the costs (and if so, the amount of money that a patient paid per session).

## Data analysis

The purpose of the study was to evaluate acupuncture practitioner–patient communication using the gap between practitioner and patient perception with respect to the level

of practitioner explanation. Thus, as a first step, subjects were divided into two groups, “Practitioner Better” and other cases (“Concordance” or “Patient Better”) concerning “consultation” and “therapy”. Then, the mean outcome values of the two groups (“Practitioner Better” and “other case”) were compared using the t-test.

In the second step, to identify factors related to the gap between practitioners’ and patients’ perceptions with respect to the level of practitioner explanation, a regression model with the gap as a dependent variable and patient and practitioner factors as independent variables was performed. SPSS 11.0 for Windows (SPSS Inc., Chicago, IL) was used for all the analyses.

## Results

Questionnaire forms were returned by 91 acupuncture practitioners (36.40%), and 407 patients (32.56%). Of these, responses from 125 pairs, with no missing values, were used in the analysis.

Table 1 summarizes the profiles of the practitioners and patients. The mean age of the practitioners was 53.76 ( $\pm 12.63$ )

years, and the percentage of female practitioners was 9.60%. Their mean length of experience was 24.44 ( $\pm 13.02$ ) years, and the mean number of practitioners in each clinic was 1.98 ( $\pm 1.54$ ). All practitioners were qualified as acupuncturists and moxibustionists. The mean age of the patients was 55.08 + 16.68) years, and the percentage of female patients was 80.00%. The mean length of each session was about 52 min.

For the acupuncture practitioner–patient communication variables, the means of “explanation of consultation” for practitioners and patients were 15.01 and 15.88, respectively, and the “gap of consultation” was 0.87 ( $\pm 3.18$ ). “Explanation of therapy” for practitioners and patients was 25.57 and 25.48, respectively, and the “gap of therapy” was  $-0.09$  ( $\pm 6.67$ ). A reliability analysis using Cronbach’s alpha showed internal consistency between 0.69 and 0.88 for the four variables (Table 1).

For patient outcome variables, the means of patient satisfaction, improvement of health, duration of therapy, and out-of-pocket expenditure were 16.83, 16.26, 1534.52 days, and 1579.77 yen, respectively. Cronbach’s alpha for satisfaction with care and improvement of health was 0.85

**Table 1** Means and standard deviations of study variables (n = 125)

Variables	Means $\pm$ SD/n (%)	Range	Cronbach’s $\alpha$
<i>Acupuncture practitioner</i>			
1. Age (years)	53.76 $\pm$ 12.63	33.00–85.00	
2. Gender (Females)	12 (9.60)		
3. Length of experience (years)	24.44 $\pm$ 13.02	1.00–63.00	
4. Number of practitioners	1.98 $\pm$ 1.54	1.00–9.00	
<i>Patient</i>			
5. Age (years)	55.08 $\pm$ 16.68	18.00–86.00	
6. Gender (Female)	80 (64.00)		
7. Length of each session (minutes)	51.60 $\pm$ 21.11	10.00–120.00	
<i>Acupuncture practitioner–patient communication</i>			
8. Explanations of consultation (practitioner)	15.01 $\pm$ 2.62	6.00–20.00	0.87
9. Explanations of consultation (patient)	15.88 $\pm$ 2.31	4.00–20.00	0.88
10. Gap of consultation <sup>a</sup>	0.87 $\pm$ 3.18	–10.00–12.00	
11. Explanations of therapy (practitioner)	25.57 $\pm$ 4.17	13.00–35.00	0.69
12. Explanations of therapy (patient)	25.48 $\pm$ 5.53	12.00–35.00	0.77
13. Gap of therapy <sup>b</sup>	–0.09 $\pm$ 6.67	–17.00–15.00	
<i>Patients outcome variables</i>			
14. Satisfaction with therapy (patient)	16.83 $\pm$ 2.38	10.00–20.00	0.85
15. Improvement of health (patient)	16.26 $\pm$ 3.95	9.00–25.00	0.88
16. Duration of therapy (days)	1534.52 $\pm$ 2018.19	1.00–10950.00	
17. Out-of-pocket expenditure (yen)	1579.77 $\pm$ 1284.00	0.00–4900.00	

**Abbreviation:** SD, standard deviation.

**Notes:** 1000 Japanese yen = approximately 9 US dollars, <sup>a</sup>Gap of consultation = practitioner’s score (no.8)–patient’s score (no.9), <sup>b</sup>Gap of therapy = practitioner’s score (no.11)–patient’s score (no.12).

and 0.88, respectively, showing a high level of internal consistency (Table 1).

Table 2 shows the association between communication gaps and patient outcome variables. Regarding satisfaction with therapy, with respect to “gap of consultation”, patients in the “Concordance (Patient Better or Concordance)” group were more satisfied with therapy than patients in the “Practitioner Better” group ( $p < 0.008$ ). For improvement in health, with respect to “gap of consultation” and “gap of therapy”, patients in the “Concordance” group had more improved health than patients in the “Practitioner Better” group ( $p < 0.009$  and  $0.018$ , respectively). With respect to duration of therapy and out-of-pocket expenditures, there was no significant difference between the “Practitioner Better” and “Concordance” groups.

Table 3 shows the factors related to the gap between practitioners and patients. The factors were isolated by a stepwise regression analysis. For factors related to the gap of consultation, age of practitioner ( $p < 0.001$ ) and number of practitioners at a clinic ( $p < 0.001$ ) were significant predictors. This finding indicated that an increase in age of a practitioner by 1 year resulted in an increase in the communication gap by 0.07, and an increase in the number of practitioners at a clinic by 1 results in an increase in communication gap by 0.63.

For factors related to the gap of therapy, length of experience of the practitioner ( $p < 0.033$ ) and age of the patient ( $p < 0.034$ ) were significant predictors. This finding indicated that an increase in experience of the practitioner by 1 year resulted in an increase in the communication gap by 0.10, and an increase in patient age by 1 year resulted in an increase in the communication gap by 0.08.

## Discussion

In this study, the relationship between acupuncture practitioner–patient communication and patient outcome

was examined. Most importantly, with respect to the level of acupuncture explanation, when evaluation by the acupuncture practitioner was higher than that by the patient, the situation pointed to reduced patient satisfaction with therapy or less improvement in health (Table 2). This result is consistent with a previous study that analyzed doctor–patient communications (Hagihara et al 2006a). That is, patients in the Concordance and Patient Better groups were more satisfied with their care than patients in the Physician Better group. Regarding the acupuncture practitioner’s explanation to a patient, the concordance situation is thought to be more desirable than other situations, because the patient is less likely to misunderstand the acupuncture practitioner’s explanation or to be given an insufficient explanation (Figure 1). However, this was not demonstrated in this study.

Acupuncture practitioner–patient communication was not related to “duration of therapy” or “out-of-pocket expenditures”. Compared with a previous finding on patients’ desirable acupuncture cost per session, derived from a national survey [ie, ¥3,217 (95% CI 3,132–3,304)] (Ishizaki et al 2005), the patients’ desirable acupuncture cost per session in the present study was ¥1,579. In addition, as the lowest value for “out-of-pocket expenditure” was zero, it is probable that many of the patients in the study were covered by the acupuncture reimbursement system of the national health insurance plan. If that was the case, it is possible that poor practitioner–patient communication may not result in the patient seeking another practitioner. However, this needs to be investigated in a future study.

As noted, regarding the level of acupuncture explanation, in a situation where evaluation by the acupuncture practitioner is higher than that by the patient, this leads to poor patient outcome. Thus, we identified factors related to the situation. Two factors (acupuncture practitioner age

**Table 2** Association between communication gap and patient outcome variables

	Outcome variables							
	Satisfaction with therapy		Improvement of health		Duration of therapy		Out-of-pocket expenditures	
	Mean	p value	Mean	p value	Mean	p value	Mean	p value
Gap of consultation								
Practitioner Better	15.38	0.008	13.88	0.009	1658.88	0.793	1526.50	0.860
Concordance	17.05		16.61		1516.27		1587.59	
Gap of therapy								
Practitioner Better	16.45	0.219	15.05	0.018	1789.18	0.335	1614.68	0.836
Concordance	17.01		16.84		1414.68		1563.34	

**Concordance:** “Concordance” or “Discordance, Patient Better.”

**Table 3** Stepwise multiple regression analysis of factors related to better acupuncture practitioner–patient interaction situations (n = 125)

	Gap of consultation				Gap of therapy			
	B	SE	$\beta$	p-value	B	SE	$\beta$	p-value
Acupuncture practitioner age (years)	0.07	0.02	0.30	0.001				
Acupuncture practitioner gender <sup>a</sup>								
Length of experience (years)					0.10	0.05	0.20	0.033
Number of practitioners	0.63	0.18	0.30	0.001				
Patient age (years)					0.08	0.04	0.20	0.034
Patient gender <sup>a</sup>								
Length of each session (minutes)								
Constant	-6.14	1.30		0.000	-6.66	2.03		0.001
R <sup>2</sup> (adjusted R <sup>2</sup> )	0.14 (0.13)				0.10 (0.09)			
F	10.25				6.90			
p value	0.000				0.001			

**Abbreviation:** SE, standard error.

**Notes:** <sup>a</sup>female 1, male 0.

and number of practitioners) were significant predictors of the consultation gap, and two factors (length of experience and patient age) were significant predictors of the therapy gap (Table 3). That is, older acupuncture practitioners and multiple practitioners were associated with greater consultation gaps. Of these findings, length of experience was not consistent with a previous report (Hagihara et al 2006a). In physician–patient interactions, length of clinical experience was positively correlated with increased communication skill, and length of experience and practitioner age were negatively correlated with the practitioner–better situation. One possible reason may be that a practitioner is more likely to be paternalistic in the acupuncture practitioner–patient interaction. Although this hypothesis needs to be verified in a future study, there is evidence that age of the acupuncture practitioner is related to the practitioner–patient interaction. According to Fujiwara (2004), the frequency of medical errors is higher among experienced practitioners, in their 40s and 50s, than among less experienced practitioners, in their 20s and 30s.

An increase in practitioner's age was also shown to be related to the practitioner–better situation in this study (Table 3). One possible reason for this may be related to unshared meanings with respect to professional language. It is probable that older practitioners are more likely to use professional jargon in the practitioner–patient interaction (Dimatteo and Friedman 1982). In reality, acupuncture jargon is highly varied (Ernst et al 1999). Another possibility is that elderly patients may misunderstand words used in the explanation of his/her disease (Burns et al 1990). Finally, we refer to the finding that the number of practitioners was related to

the practitioner–better situation in the study (Table 3). One possible reason may be that multiple practitioners have more difficulty in keeping complete information about a patient than a single practitioner does. However, this needs to be verified in a future study.

A practical implication of the present findings is that, in order to keep good acupuncture practitioner–patient communications, it may be necessary for practitioners to recognize that elderly practitioners, working at a clinic with multiple practitioners, and explanations to elderly patients may be risk factors for breakdowns in practitioner–patient communication. In other words, an acupuncture practitioner engaged in a patient–practitioner interaction that includes one of the above attributes needs to be careful to maintain effective communication.

Finally, there are several caveats and limitations to our study. First, the response rates of acupuncture practitioners and patients were 36.40% and 32.56%, respectively. Compared to other studies (21.5%–49.6%; Kawai 2002; Shinbara et al 2003), these figures are not necessarily low. Similarly, they do not appear to be very different compared to other studies regarding the basic attributes of responders (ie, age, gender). However, we need to be careful in extrapolating the present findings to other populations.

In conclusion, we found the following. (1) Regarding the level of acupuncture explanation, when practitioner perception is higher than patient perception, the interaction is associated with reduced patient satisfaction regarding therapy or less improvement in health. (2) Two factors (acupuncture practitioner age and number of practitioners) were significant predictors of the consultation gap, and two

factors (length of experience and patient age) were significant predictors of the therapy gap. That is, older acupuncture practitioners and multiple practitioners were associated with greater consultation gaps. As this is the first study evaluating the acupuncture practitioner–patient interaction with a new methodology, based upon patient–practitioner pairs, further study is necessary to verify the present findings.

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## Appendix

### Question items about practitioner–patient communication

#### *Practitioner explanation: consultation*

1. Practitioner explanation of the consulting methods
2. Practitioner explanation of the consultation results
3. Practitioner explanation of the severity of the disease
4. Practitioner explanation of the prognosis of the disease

#### *Practitioner explanation: therapy*

1. Practitioner explanation of the therapy method
2. Practitioner explanation of the effects of the therapy
3. Practitioner explanation of the side effects of the therapy
4. Practitioner explanation of the dangers of the therapy
5. Practitioner explanation of comparison with other therapies
6. Notandum regarding daily life
7. Recommendation of medical doctor's consultation.

#### *Practitioner reflection of patient requests in therapy*

1. Length of the therapy
2. Insurance or public assistance

3. Dose of therapy (eg, pain, heat, strength)
4. Modality of the therapy
5. Was it the practitioner that the patient had hoped for?

#### *Patient satisfaction*

1. I am satisfied with the therapy
2. I am satisfied with the consequences of the therapy
3. If I need care again in the future, I will consult with my practitioner
4. If my family or friends need care in the future, I will recommend my practitioner

#### *Improvement of health*

1. How is your physical condition?
2. How is the alleviation of your worry or anxiety?
3. How is your pain control?
4. How is your mental condition?
5. How is your current state of health?