

# Patient Satisfaction With Outpatient Physical Therapy: Instrument Validation

**Background and Purpose.** Patient satisfaction with physical therapy is used as an outcome variable. The purpose of this study was to develop and test an instrument used to determine which variables are associated with the satisfaction of patients receiving outpatient physical therapy. **Subjects.** During the pilot study, 191 patients participated, and 1,868 patients then participated in the main phase of this work. **Methods.** Using a survey instrument developed by the authors, subjects responded to global questions concerning overall satisfaction with physical therapy. Content validation of the instrument was investigated using item correlation, principal components analysis, and factor analysis. Reliability was measured using the standard error of measurement. Concurrent validity was investigated by correlating summary scores of the final survey instrument with global measures of satisfaction. **Results.** Reliability was best for a 10-item questionnaire. Patient satisfaction was most associated with items that reflected a high-quality interaction with the therapist (eg, time, adequate explanations and instructions to patients). Environmental factors such as clinic location, parking, time spent waiting for the therapist, and type of equipment used were not strongly correlated with overall satisfaction with care. **Discussion and Conclusion.** Because the time the therapist spent with patients and the behavior of the therapists are important for patient satisfaction, emphasis on cost-cutting, high patient volume, and the use of “care extenders” may jeopardize satisfaction. [Beattie PF, Pinto MB, Nelson MK, Nelson R. Patient satisfaction with outpatient physical therapy: instrument validation. *Phys Ther.* 2002;82:557–565.]

**Key Words:** *Patient satisfaction, Physical therapy, Survey development.*

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In the current health care environment, physical therapists are faced with the challenge of practicing in an increasingly competitive marketplace. The rapidly growing number of practicing physical therapists and the widespread use of “care extenders” has allowed patients more options when choosing providers. Physicians are often under pressure to reduce referrals for physical therapy, and people from other disciplines, such as personal trainers, are aggressively marketing their services to prospective patients. As marketplace competition continues to grow, patient satisfaction with physical therapy is emerging as an outcome variable of critical importance.<sup>1–4</sup> Patients who report high satisfaction with care are more likely to continue the relationship with the health care practitioner, to seek additional medical care when needed, and to adhere to recommended treatment plans.<sup>5–8</sup>

Patient satisfaction is often considered to be an abstract, multidimensional phenomenon.<sup>6,7,9,10</sup> Because it usually is not observable directly, patient satisfaction must often be measured in what we would consider an indirect manner (ie, from self-report measures).<sup>1–4,6,11–14</sup> A simple self-report method for assessing satisfaction is to ask global questions such as, “Overall, I am completely satisfied with my care.”<sup>6</sup> These questions, although easy to administer, do not provide information about why a person is or is not satisfied; therefore, many authors<sup>1–4,6,9,10</sup> recommend the use of multidimensional measures. Consequently, the question arises about which variables are needed to assess patient satisfaction adequately. If a measure does not include all relevant variables, important information may be missed, whereas sampling too many variables may provide irrelevant or misleading information. For example, an instrument may erroneously identify a lack of parking and poor location as sources of patient dissatisfaction. This could

result in a clinic undergoing an expensive relocation when the actual source of dissatisfaction was insufficient therapist time with the patient.

Numerous aspects of patient satisfaction have been described, and the most common factors are: the patient-practitioner relationship (competence, personality of the practitioner, communication), location and accessibility of services, continuity of care, cost and payment issues, and the facility (eg, cleanliness, noise, equipment).<sup>1,4,6,14</sup> Although several researchers<sup>5,8–10,12–22</sup> have described the development or use of measures of patient satisfaction with overall medical care, the applicability of these measures to patient satisfaction with physical therapy is uncertain. In our opinion, the unique aspects of care related to outpatient physical therapy—such as the need for frequent visits over a short period of time as well as the need for patients to stay in the clinic for sessions that are longer than those of a typical physician’s visit—may require a different, “specialty-specific” scale.

Recently, 2 groups<sup>1,4</sup> have described the development of instruments for assessing patient satisfaction in outpatient physical therapy settings. Both instruments had what we would consider good psychometric properties; however, we believe they reflect different aspects of patient satisfaction. Roush and Sonstroem<sup>4</sup> developed an outpatient satisfaction survey by sequentially testing 3 patient samples totaling 607 people. The authors proposed using a 34-item survey questionnaire to measure 4 dimensions: enhancers, detractors, location, and cost. Location and cost were found to be the greatest influences to satisfaction. Goldstein et al<sup>1</sup> reported measurement properties on a different instrument that was tested on 289 subjects. The authors proposed a 15-item questionnaire that indicated that a single dimension

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representing patient-therapist interaction was most important. Cost of care was not correlated with overall satisfaction.

The variation in the content of these instruments suggests a need to investigate the variables associated with patient satisfaction. The purpose of our study was to develop and test an instrument that would provide adequate measurement properties to assess which variables were most closely associated with the overall satisfaction of patients receiving outpatient physical therapy for occupation-related musculoskeletal conditions.

## Method

### General Description

Our study was divided into 2 phases. The first phase consisted of instrument development and pilot testing. In the second phase, the instrument was revised and administered to a large sample of people who were from several geographic areas and who had a variety of diagnoses. Using these data, further instrument revision using factor analysis and reliability testing was performed.

### Phase 1: Initial Development of the Instrument and Pilot Testing

**Initial development of the instrument.** The first step in the development of the survey instrument was to create items that we believed could reflect the potential variables that influence patient satisfaction in an outpatient physical therapy setting. Taking into account the disagreement in the previous published work concerning the dimensions of satisfaction<sup>1,4</sup> and based on discussions with physical therapists and patients and our own views, we chose items reflecting what we considered 2 broad variables: personal aspects of the therapist and system/external aspects. The personal aspects consisted of a series of items regarding the patient's interaction with the physical therapist and associated staff (ie, physical therapist assistant, receptionist, and other office staff). The systems/external aspects related to issues such as clinic accessibility and location, waiting time, registration, and cleanliness of facilities. Research has suggested that cost of care is an important variable in patient satisfaction<sup>4</sup>; however, because we studied people receiving workers' compensation, we chose not to include this item.

A list of 25 questions reflecting personal aspects and system/external variables was initially generated through informal discussions with patients and physical therapists as well as through a review of the current literature.<sup>2,3</sup> To test face validity, all items were reviewed by 2 physical therapists who assessed the items for logical

consistency and content. These therapists were both doctorally trained and had an average of 35 years of academic clinical experience. They followed a protocol for analyzing the scale items and indicated whether, in their opinion, there were any awkward or inappropriate words or misleading phrases. Based on their recommendations, a revised 18-item questionnaire was created for initial pilot testing. The sequence of the items was randomized (ie, by pulling numbers out of a hat), and each item was rated on a 5-point scale (1=strongly disagree and 5=strongly agree). To control for response bias, positively and negatively worded items were included. In addition, we initially included 4 global measures of patient satisfaction to act as dependent variables: (1) "Overall, I am completely satisfied with the services I receive from my therapist," (2) "I would return to this office for future care," (3) "I would not recommend this therapist to a friend," and (4) "This therapy has helped me as much as expected." We expected that the summary score on the final instrument would be highly correlated with one or more of these global measures of satisfaction.

**Pilot testing.** Pilot testing was performed to assess the relationship of the 4 global items with one another and with each of the remaining variables. We used this information to determine the need to retain each of the global measures (ie, if a global measure is not strongly related to other items, it may reflect a different construct and may not be appropriate for this instrument).

The sample of respondents for this pilot phase included 191 people who were receiving outpatient physical therapy at any one of several physical therapy clinics throughout the United States. These clinics were privately or corporately owned, specialized in the evaluation and treatment of adults with musculoskeletal problems, and employed an average of 4.5 full-time physical therapists. All facilities were participating members of MedRisk Inc,\* which is a preferred provider organization and an expert provider organization that contracts with physical therapists and other health care practitioners to provide care for people who are covered by workers' compensation. Thus, all subjects were receiving workers' compensation. The subjects were receiving treatment for one or more musculoskeletal conditions commonly encountered by physical therapists. All subjects had to be able to read English. Subjects were asked to complete the survey after at least 3 visits.

All rights of the subjects were protected. All responses were obtained anonymously. Patients who were asked to fill out a questionnaire were assured in its written

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**Table 1.**  
Numbers and Percentages of Respondents by Region

Region	n	Percentage
Mid-Atlantic (NJ, Pa, NY, Md, Del, DC, WV)	1,260	67.45
South (Fla, Tenn, Ga, NC, SC, Tex, Ky)	373	19.97
West (Calif)	160	8.57
New England (Conn, RI)	75	4.01
Total	1,868	100.00

instructions that their responses would be aggregated so that no one person's response could be identified, either through survey code markings or any other method.

**Data analysis and results.** An inter-item correlation matrix was calculated to determine the correlation ( $r$ ) of each of the items (survey questions) with each of the global measures. All 18 items were correlated with each of the 4 global measures (ie, all of the questions were related to the patient's overall sense of satisfaction). A multiple regression analysis was used to estimate the correlation of variables with the global measures. The overall  $r$  values ranged from .35 to .74. Two of the 4 global measures were not strongly related to other items and were dropped, leaving a revised instrument of 18 items and the 2 remaining global measures: "Overall, I am completely satisfied with the services I receive from my therapist" and "I would return to this office for future care." The regression model had an adjusted  $r^2$  value of .76; that is, the full model predicted approximately 76% of the causes of patient satisfaction with a physical therapy clinic. The Cronbach alpha, an indicator of internal consistency or the degree to which similar questions yield similar answers,<sup>1</sup> was calculated as .93 for the 18 items, thus indicating a high degree of internal consistency.

### Phase 2: Content Validation and Reliability Testing

The revised 20-item instrument (18 specific questions and 2 global measures) was completed by patients following their course of physical therapy. Once again, all patients were receiving treatment under workers' compensation regulations. Outpatient clinics in 17 states participated in this phase of the study. Representatives of MedRisk Inc mailed the survey instrument to the patient's home approximately 4 weeks after completion of physical therapy. Of the 9,315 survey questionnaires that were sent out, 1,868 (20%) were returned and used in the analysis. The 20% return rate, in our opinion, represents a satisfactory return, but others may disagree.<sup>23</sup> The mean age of the respondents was 46.9 years (SD=11.9); 676 respondents were female, and 1,192 respondents were male. Table 1 lists the number of respondents by geographic region. The majority of

**Table 2.**  
Patient Sex by Primary Location of Symptoms

	Male	Female	Total
Cervical spine	113	66	179
Wrist and hand	88	88 <sup>a</sup>	176
Lower extremity	280 <sup>a</sup>	149	429
Lumbar and thoracic spine	360 <sup>a</sup>	164	524
Upper extremity	331	188	519
Other	20	21 <sup>a</sup>	41
Total	1,192	676	1,868

<sup>a</sup> Observed exceeded expected count.

respondents received care in the Mid-Atlantic region. Table 2 summarizes the anatomic location of symptoms for which the patient sought treatment. There was a difference by gender for symptom location ( $\chi^2=24.12$ ,  $df=5$ ,  $P=.00$ ). Observed counts exceeded those expected for male patients with thoracolumbar or lower-extremity problems and for female patients with hand problems or "other" symptoms.

To determine the interrelationships of the various items, a series of tests were used. Items with reverse coding were recoded so that all variables were positively coded (ie, 1="strongly disagree," 5="strongly agree"). An item-correlation matrix was generated to determine the correlation of items with the global measures. Following this, we conducted a principal components analysis (PCA).<sup>4,24</sup> This test reduces the number of variables into a small number of components (ie, groups of questions thought to represent similar concepts). Eigenvalues derived by PCA indicate the variance accounted for by each of the potential components and provide fundamental information regarding the total number of different components in the data set (ie, how many different groups of similar questions are included). Eigenvalues greater than 1.0 obtained during the PCA were retained.<sup>24</sup>

To determine how many components the final questionnaire should include and to determine whether a 2- or 3-component solution was superior, a factor analysis was performed. Factor analysis acts to maximize apparent differences among groups of questions, and it provides a coefficient of strength of association for each question to groups of questions (now called "factors").<sup>4,24,25</sup> "Rotating factors" is a procedure used to clarify the differences among the factors. We used "Oblimin rotation" because this procedure is recommended to clarify relationships between attitude or belief components.<sup>4</sup> A .60/.30 criterion for factor retention was used to indicate the degree of correlation (loading) of each item to each factor (ie, an item must load greater than or equal to .60 on one factor and less than .30 on all other factors), representing a conservative inclusion criterion.<sup>26</sup>

**Table 3.**

Inter-item Correlation Matrix Representing the Correlation ( $r$ ) of the Items With Each of the 2 Global Measures ("Overall, I Am Completely Satisfied With the Services I Receive From My Therapist" [Overall Satisfaction] and "I Would Return to This Office for Future Care" [Would Return]) and With the Mean of These 2 Measures<sup>a</sup>

Item	Overall Satisfaction	Would Return	Mean
PT answers my questions	.703	.681	.692
PT explains treatment	.722	.625	.674
PT listens	.712	.612	.662
PT is courteous	.695	.605	.650
PT spends enough time	.682	.597	.640
PT gives detailed instructions	.653	.548	.600
PT advises me	.579	.522	.551
Office staff is courteous	.527	.503	.515
The office is clean	.516	.482	.499
Up-to-date equipment	.520	.456	.488
The receptionist is courteous	.428	.413	.421
The office hours are convenient for me	.427	.410	.419
Registration is simple	.398	.391	.395
Waiting room is comfortable	.387	.386	.387
Parking is convenient	.272	.261	.267
PTA is courteous	.269	.236	.253
Time waiting for PT	.175	.149	.162
Location is convenient	.095	.106	.101

<sup>a</sup> PT=physical therapist, PTA=physical therapist assistant.

**Reliability.** Reliability of the measurements obtained was tested by calculating the standard error of measurement (SEM).<sup>27–30</sup> Using the method described by Roddey et al<sup>27</sup> and others,<sup>28,29</sup> the SEM was calculated using the following equation:

$$\text{SEM} = \text{SD} \sqrt{1 - \alpha}$$

where SD is the standard deviation of the observed scale or subscale and  $\alpha$  is the Cronbach alpha for that scale or subscale. The lower the SEM, the less error is associated with the measure (ie, the closer the observed score is likely to be to the "true score"). The SEM provides a range or interval of scores about which the true measure is likely to fall. By adding and subtracting 1.96 SEMs to an observed score, one can estimate (with 95% certainty) the range in which the true score for a person will lie. For example, if the observed mean score on a scale is 4.5 and the SEM is 0.25, one may be 95% certain that the true score lies between 4.01 and 4.99 (4.5–0.49 and 4.5+0.49).

## Results

### Data Reduction and Reliability Testing

The item-correlation matrix revealed that all items were positively correlated with the 2 global measures (Tab. 3). The values ranged from .095 ("The clinic location is convenient") to .722 ("My therapist explains the treat-

**Table 4.**

Total Variance Explained

Component <sup>a</sup>	Eigenvalue	% Variance	Cumulative %
1	7.61	42.26	42.26
2	1.42	7.86	50.12
3	1.24	6.91	57.03

<sup>a</sup> Component 1=personal aspects (7 items), component 2=system/external aspects (3 items), component 3=convenience of receiving care (2 items).

ment") for global measure 1 ("Overall, I am completely satisfied with the services I receive from my therapist") and from .106 ("The clinic location is convenient") to .681 ("My therapist answers my questions") for global measure 2 ("I would return to this office for future care").

The PCA demonstrated the existence of 3 eigenvalues greater than 1.0, explaining 57.03% of the variance (Tab. 4). The Scree test<sup>4</sup> provides a graphic representation of eigenvalues and was used to further clarify the number of components to rotate. Using the plot created by the Scree test, a cutoff point at which the slope of the decreasing eigenvalues begins to level off can be found. Based on the eigenvalues and the plot created by the Scree test, we examined a 2- and 3-component solution. Both analyses were followed by Oblimin rotation.

For the 2-component solution, we used PCA to identify a total of 10 items, whereas the 3-component solution retained 12 items (Tab. 5). Table 5 reports the factor loadings for each item. In both solutions, the first component consisted of 7 items related to the patient-therapist interaction (ie, personal or internal elements). Similarly, in both solutions, the second component consisted of 3 items related to the patient's perception of the receptionist, registration process, and waiting room (ie, systems/external aspects). In the 3-component solution, the third component contained 2 items similar to the "convenience" of receiving care (location of clinic and time waiting for the therapist). The 2 items in the convenience component, however, had the lowest correlations of any of the variables with the 2 global measures of satisfaction (Tab. 3).

The internal consistency (Cronbach alpha) of each scale and subscale for the 2- and 3-component solutions is shown in Table 6. The 2-component solution yielded an overall alpha of .90, whereas the 3-component solution had an overall alpha of .85. The alpha levels of the subscales ranged from .44 (convenience) to .92 (personal or internal elements). Reliability testing showed a similar trend, with the 2-component solution overall representing the least error variation and the convenience subscale yielding the highest error.

**Table 5.**  
Factor Loadings by Component for the 3-Component Solution<sup>a</sup>

Item	Component	Factor Loading
PT explains treatment	1	.874
PT answers my questions	1	.866
PT listens	1	.858
PT is courteous	1	.829
Time waiting for PT	3	.792
PT spends enough time	1	.797
Location is convenient	3	.779
PT gives detailed instructions	1	.779
Registration is simple	2	.776
The receptionist is courteous	2	.763
PT advises me	1	.759
The office is clean	*	.708 <sup>b</sup>
Office staff is courteous	*	.700 <sup>b</sup>
Waiting room is comfortable	2	.732
Up-to-date equipment	*	.620 <sup>b</sup>
The office hours are convenient for me	*	.536
Parking is convenient	*	.534
PTA is courteous	*	.410

<sup>a</sup> PT=physical therapist, PTA=physical therapist assistant. Asterisk indicates items that failed to load on any component.

<sup>b</sup> Cross-loaded on 2 or more components.

**Table 6.**  
Internal Consistency (Alpha) Reliability Characteristics of 2- and 3-Component Solutions and Their Associated Subscales<sup>a</sup>

Scale	Alpha	$\bar{X}$	SD
2-component overall (10 items)	.9044	4.43	0.611
3-component overall (12 items)	.8461	4.42	0.559
PT-patient interaction subscale (7 items)	.9163	4.44	0.693
Clinic environment subscale (3 items)	.7381	4.41	0.645
Convenience subscale (2 items)	.4368	4.36	1.020

<sup>a</sup> SEM=standard error of measurement, PT=physical therapist.

### Testing of Concurrent Validity

Concurrent validity is a measurement property describing relationships between 2 measurements obtained relatively close in time.<sup>30</sup> Concurrent validity may be investigated by correlating the measurements from a new, untested instrument with a measurement that is believed to be a valid measure of the construct under investigation (ie, overall satisfaction).<sup>1</sup> The 2 global measures of satisfaction (“Overall, I am completely satisfied with the services I receive from my therapist” and “I would return to this office for future care”) were included as correlates for the satisfaction items as a way to assess concurrent validity. Because there is no absolute “gold standard” by which to assess satisfaction, we felt that the development and evaluation of these global

**Table 7.**  
Pearson Correlation Coefficient (*r*) and Spearman Rank Correlation ( $\rho$ ) Between 2- and 3-Component Solutions and the Global Measures (“Overall, I Am Completely Satisfied With the Services I Receive From My Therapist” [Overall Satisfaction] and “I Would Return to This Office for Future Care” [Would Return])

Solution	Overall Satisfaction		Would Return		Mean	
	<i>r</i>	$\rho$	<i>r</i>	$\rho$	<i>r</i>	$\rho$
2-component	.801	.760	.711	.716	.756	.738
3-component	.781	.737	.695	.695	.738	.716

measures was appropriate. This procedure is similar to one taken by Goldstein et al.<sup>1</sup> These 2 measures were among the original 4 global measures suggested by the panel that developed our original questionnaire, and they appear to make sense (ie, have face validity). The 10 items retained in the 2-component solution and the 12 items retained in the 3-component solution were each used to form 2 separate mean summary scores. These scores were correlated with each of the scores of 2 global measures (“Overall, I am completely satisfied with the services I receive from my therapist” and “I would return to this office for future care”) and with the mean value of both global measures. This provided an estimate of the degree to which the overall scales correlated with the criterion variables. Table 7 illustrates the correlations of the 2- and 3-component solutions and the associated subscales with these criterion variables (global measures). In all cases, the 2-component solution demonstrated higher correlations.

### Discussion

Our findings suggest that reliability, as well as content and concurrent validity, can be obtained from a subscale that directly relates to a patient’s interaction with his or her physical therapist, whereas measures of perceptions not directly related to patient care (ie, environment and location) have lower reliability. Our observation is in agreement with previous work by Goldstein et al,<sup>1</sup> who identified a single-factor solution related to patient-physical therapist interaction. These authors speculated that satisfaction was not strongly influenced by “ancillary aspects of care such as courtesy of the support staff and parking.” The findings of other authors<sup>6,31</sup> support this idea. They found that the most important issues for patients receiving medical care are being treated with respect and being involved in treatment decisions.<sup>6,31</sup> Non-patient care issues such as parking and cleanliness of the facility are less important.<sup>6,31</sup>

In contrast to our findings, Roush and Sonstroem<sup>4</sup> contended that patient satisfaction is strongly influenced by factors such as location and cost. In the instrument proposed by Roush and Sonstroem, 15 of 34 questions

sampled the patient's satisfaction with location, accessibility, and cost of care. In our sample, however, we found very low correlations among location and the global measures of satisfaction. In our analysis, the item addressing "location" factor-loaded with time spent waiting for the physical therapist; however, this component had low internal consistency, and, when it was deleted, the overall internal consistency of the measurements obtained from the remaining items improved. Because the population we studied was receiving workers' compensation, no items relating to cost of care were included. Recent data, however, suggest that less than 1% of patients receiving physical therapy pay the complete charges out of pocket (Advisory Committee on Practice, American Physical Therapy Association, personal communication, November 1998). Goldstein et al<sup>1</sup> also found a low correlation between cost of service and satisfaction. We question whether an instrument that is heavily weighted toward questions relating to cost and location is appropriate. Further study using concurrent comparisons of these instruments should be performed.

Maximizing patient satisfaction is a sound philosophy from both a clinical perspective and a business perspective. Satisfied patients are more likely to adhere to treatment and to continue to seek health care at a given facility.<sup>32-39</sup> Our findings indicate that adequate time spent in patient care and the professionalism of the therapist and clinic staff are more important for patient satisfaction than are the location of the facility, the quality of equipment, and the availability of parking. We believe that, in the current health care environment, the emphasis on cost-cutting, high patient volume, and the use of "care extenders" can reduce the time for the patient-therapist interactions that appeared to contribute to satisfaction. We believe that this trend will have a negative effect on patient satisfaction, which, in turn, will have a negative effect on the marketplace and on job satisfaction.

Hudak and Wright<sup>6</sup> provided an excellent review of the characteristics and use of a patient satisfaction measure. They noted that it is important to differentiate between patient satisfaction with outcome and patient satisfaction with care. Patient satisfaction with outcome relates to the results of treatment, whereas satisfaction with care reflects the service the patient received during a course of care. Arguably, these represent separate entities and should be assessed with different instruments. The instrument developed in our study was designed to be a self-administered, forced-choice format for assessing a person's satisfaction with the process of receiving physical therapy in an outpatient environment. We did not examine satisfaction with outcome. Based on our data, we believe that the 10-item instrument (which also includes 2 global questions and thus contains 12 total questions) provides a tool that is complete and easy

to administer. We believe the instrument has sound measurement properties for assessing current patient satisfaction within the population of people receiving outpatient physical therapy related to workers' compensation (Appendix).

We believe instrument validation is an ongoing process. Our data suggest that reliable measurements may be obtained that describe various aspects of patient satisfaction with care at a given time. Although a repeated-measures design was not used in this study, test-retest reliability using the SEM has been described previously.<sup>27</sup> The low values of SEM for the 10-item instrument and its 2 subscales indicate a low degree of measurement error and, therefore, a high degree of test-retest reliability. Further study is needed to assess the criterion-referenced validity of the measurements obtained from this instrument.

We believe that a satisfaction measure must be viewed in the context in which it will be used.<sup>6</sup> We argue that, in many cases, standardized measures may not provide adequate data.<sup>6</sup> By including both closed- and open-ended survey questions, we contend that a richer understanding of satisfaction can be obtained. In addition to a standardized instrument, we suggest that clinicians may want to include a small number of open-ended questions to target issues unique to a given facility. We have no data, however, to suggest that this would be beneficial.

The data we obtained, in our opinion, are generalizable to adults with occupation-related musculoskeletal impairments from a large geographic area. The appropriateness of the proposed instrument to people who are not receiving workers' compensation is not known. Our instrument was constructed to assess patient satisfaction with care and is not adequate to measure satisfaction with outcomes. The overall assessment of outcome is a multidimensional task that, in addition to patient satisfaction with care, should also include other relevant measures such as health status, functional capacity, and quality of life.

## Conclusions

The instrument developed during the process described here has been demonstrated to yield measurements that are reasonably reliable and have some content and concurrent validity. The results of our study show that patient satisfaction with care is most strongly correlated with the quality of patient-therapist interactions. This includes the therapist spending adequate time with the patient, demonstrating strong listening and communication skills, and offering a clear explanation of treatment. Non-patient care issues such as clinic location, equipment, and parking are less important in determining patient satisfaction. We did not study patient satisfaction with the outcome of care.

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**Appendix.**

Patient Survey Instrument

Patient Survey



1. Age: \_\_\_\_\_ (years)      2.  Male    Female

3. General area of treatment (check all that apply):  Neck    Back    Arm    Leg    Foot/Ankle    Hand/Wrist  
 Other (specify): \_\_\_\_\_

**Please answer the questions below by circling the response which best describes your opinions about your treatment.**

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1 The office receptionist is courteous.	1	2	3	4	5
2 The registration process is not appropriate.	1	2	3	4	5
3 The waiting area is comfortable (in terms of lighting, temperature, décor and furnishings).	1	2	3	4	5
4 My therapist did not spend enough time with me.	1	2	3	4	5
5 My therapist thoroughly explains the treatment(s) I receive.	1	2	3	4	5
6 My therapist treats me respectfully.	1	2	3	4	5
7 My therapist listens to my concerns.	1	2	3	4	5
8 My therapist did not answer all my questions.	1	2	3	4	5
9 My therapist advises me on ways to avoid future problems.	1	2	3	4	5
10 My therapist gives me detailed instructions regarding my home program.	1	2	3	4	5
11 Overall, I am completely satisfied with the services I receive from my therapist.	1	2	3	4	5
12 I would return to this office for future services or care.	1	2	3	4	5

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