

Longitudinal Continuity of Care Is Associated With High Patient Satisfaction With Physical Therapy

Background and Purpose. Recent literature has suggested that longitudinal continuity (ie, the patient is seen by the same practitioner for the entire course of treatment) may be linked to high degrees of patient satisfaction with medical care. The purpose of this study was to provide preliminary information regarding the association between longitudinal continuity and reports of patient satisfaction with physical therapy outpatient care. **Subjects and Methods.** A sample of 1,502 adult subjects completed the MedRisk Instrument for Measuring Patient Satisfaction With Physical Therapy Care at the time of discharge from outpatient physical therapy. Relationships between satisfaction measures and the presence or absence of longitudinal continuity were assessed by use of binary logistic regression. **Results.** Overall, 36.8% of the subjects reported complete satisfaction on the internal subscale (patient-therapist), and 47.9% of the subjects reported complete satisfaction on the external subscale (patient-support staff). Higher percentages of women (40.2% and 51.1% for internal and external subscales, respectively) than of men (31.9% and 43.3% for internal and external subscales, respectively) were completely satisfied with care. Of subjects who reported complete satisfaction on the internal subscale, 71.2% had longitudinal continuity of care, and 28.8% did not. A similar trend was noted for the external subscale (patient-support staff); 66.8% of subjects who reported complete satisfaction had longitudinal continuity, and 33.2% did not. Odds ratios describing the probability of complete satisfaction with care for subjects who had longitudinal continuity and for those who did not were significant and ranged from 2.7 to 3.5. **Discussion and Conclusion.** Subjects who received their entire course of outpatient physical therapy from only 1 provider were approximately 3 times more likely to report complete satisfaction with care than those who received care from more than 1 provider. These findings suggest that clinicians and managers should make efforts to preserve longitudinal continuity of care as a means of improving patient satisfaction with care. [Beattie P, Dowda M, Turner C, et al. Longitudinal continuity of care is associated with high patient satisfaction with physical therapy. *Phys Ther.* 2005;85:1046–1052.]

Key Words: *Patient satisfaction, Physical therapy, Self-report measure.*

Paul Beattie, Marsha Dowda, Christine Turner, Lori Michener, Roger Nelson

Patient satisfaction with care is a construct reflecting the overall experience of an individual receiving examination and treatment in a given environment during a specific time period. Measured by self-report, patient satisfaction with care has become a worldwide concern in virtually every health care specialty.¹⁻¹⁹ Conceptually, patient satisfaction with care can be viewed from the perspectives of quality of care and customer service.¹⁹⁻²⁴ For example, people who are satisfied with care are more likely to complete a course of treatment, potentially improving their overall outcomes over those of people who do not return for prescribed care.^{3,13,25-27} Improved attendance also may have positive financial implications for a treatment facility by reducing cancellations and “no-shows.” These links between satisfaction with care and adherence to treatment may result in improved cost-effectiveness of care.^{13,21,27} Considering these issues, health care providers have striven to determine the items that are most closely linked to satisfaction.^{3-12,17,21,28-30}

In recent work, we reported that the individual items most highly correlated with overall patient satisfaction with physical therapy care were those related to the quality of the physical therapist–patient interaction; for example, the physical therapist treated the patient with respect, explained the treatment, and answered the patient’s questions.^{4,5} These findings also are strongly linked to measures of patient satisfaction reported in other health care fields. For example, high satisfaction was associated with “caring” and with quality of patient instructions and explanations in emergency department environments,^{6,10} plastic surgery consultations,⁸ and primary care settings.^{1,27}

Zoller et al¹⁹ reported that a patient’s understanding of explanations by the health care provider was a major predictor of adherence to return visits. A patient who is well-informed by his or her health care practitioner is likely to have high satisfaction with care, to be more adherent to care, and to take an active role in health care.^{12,24,31-34}

Baker et al³ described the concept of “longitudinal continuity” as a patient seeing the same provider over time and developing a relationship based upon trust. In samples of patients from both the United States and the United Kingdom, nearly 80% of patients stated that seeing the same physician over time was “important” or “very important.” Patients who did not see the same physician over time had the lowest degree of satisfaction.³ Considering the importance of the patient–therapist relationship,^{33,34} longitudinal continuity may be an important component of patient satisfaction with physical therapy care. The purpose of our study was to provide preliminary information regarding the association between longitudinal continuity of care and reports of patient satisfaction with physical therapy outpatient care. This report is a secondary analysis from a data set used for instrument validation.⁵

Method

Subjects

To be eligible for this study, consenting subjects had to be able to read and write in English, be 18 years of age or older, and have completed outpatient physical therapy at 1 of 6 outpatient clinics: 5 in Pennsylvania and 1 in New York. All of the clinics were subscribers to a clinical benchmark service offered by Expert Clinical

P Beattie, PT, PhD, OCS, is Clinical Associate Professor, Program in Physical Therapy, Department of Exercise Science, School of Public Health, University of South Carolina, Columbia, SC 29208 (USA) (pbeattie@gwm.sc.edu). Address all correspondence to Dr Beattie.

M Dowda, DrPH, is Biostatistician, Department of Exercise Science, School of Public Health, University of South Carolina.

C Turner, PT, was Clinical Specialist, MedRisk, Inc, King of Prussia, Pa, at the time this study was completed.

L Michener, PT, PhD, ATC, SCS, is Assistant Professor, Department of Physical Therapy, Virginia Commonwealth University–Medical College of Virginia Campus, Richmond, Va.

R Nelson, PT, PhD, FAPTA, is Professor, Department of Physical Therapy, Lebanon Valley College, Annville, Pa. He is also Vice President, Expert Clinical Benchmarks, LLC, MedRisk, Inc.

Dr Beattie, Ms Turner, Dr Michener, and Dr Nelson provided concept/idea/research design. Dr Beattie, Dr Michener, and Dr Nelson provided writing. Ms Turner and Dr Nelson provided data collection and project management, and Dr Beattie and Dr Dowda provided data analysis. Dr Nelson provided subjects, institutional liaisons, and clerical support. Dr Dowda, Ms Turner, Dr Michener, and Dr Nelson provided consultation (including review of manuscript before submission).

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Table 1.
Subject Characteristics (N=1,502)

Characteristic	Value
Age (y)	
\bar{X}	55.3
SD	17.7
No. of subjects by sex	
Female	878 (58.5%)
Male	624 (41.5%)
No. of subjects by area treated	
Lower extremity	485 (32%)
Thoracic or lumbar spine	418 (28%)
Upper extremity	256 (17%)
Cervical spine	233 (16%)
Other	110 (7%)
No. of subjects receiving care for multiple body parts	194 (12.9%)

Benchmarks, LLC.* Each of the clinics was privately owned and primarily treated people with musculoskeletal problems.

A total of 3,969 subjects were asked to complete the MedRisk Instrument for Measuring Patient Satisfaction With Physical Therapy Care (MRPS) at the time of discharge from physical therapy. Of those subjects, 1,634 gave informed consent and returned the survey (41.2% response rate). A total of 132 subjects were excluded from the study because they were less than 18 years old or had missing values. The final sample consisted of 1,502 subjects. The subject age range was 18 to 101 years, with a mean age of 55.3 years (SD=17.7). A total of 878 subjects (58.5%) were women, and 624 (41.5%) were men. The mean age of women (56.2 years) was greater than that of men (53.7 years) ($P<.01$). The most frequent anatomic area treated was a lower extremity (32%; $n=485$), followed by the thoracic or lumbar spine (28%; $n=418$); 12.9% of subjects ($n=194$) had multiple anatomic areas treated (Tab. 1).

The rights of the subjects were protected. Each subject signed an institutionally approved consent form included in the survey instrument. Specific subject names were available to only 1 of the researchers (CT) and were not included in the database. All transactions involving subject data were in compliance with Health Insurance Portability and Accountability Act (HIPAA) regulations.

Measures

The primary issue that we hoped to address in this study was the relationship between subject satisfaction and having 1 versus more than 1 physical therapy provider

during the course of care, that is, the presence or absence of longitudinal continuity. We hypothesized that disruptions in the longitudinal continuity of care would be associated with lower degrees of satisfaction than were found for subjects who had longitudinal continuity. We obtained the following information to describe our sample more clearly: subject age, sex, the anatomic location of the area for which the subject received treatment, and whether multiple body parts were treated.

The presence of longitudinal continuity was determined by therapist codes in the database. Subjects with only 1 physical therapy provider were classified as having longitudinal continuity.

Subject satisfaction was assessed with the MRPS (Figure).^{4,5} The psychometric properties of measures obtained with the MRPS were reported in 2 previous studies that assessed responses from subjects receiving outpatient physical therapy for various musculoskeletal disorders.^{4,5} In the initial study,⁴ responses from 1,869 subjects who were receiving workers' compensation were evaluated by use of principal components analysis with varimax rotation. The results of this exploratory analysis suggested a 2-factor solution: a 7-item factor (subscale) reflecting subject satisfaction with the patient-therapist relationship that we labeled "internal" and a 3-item factor (subscale) reflecting subject satisfaction with support staff and clinic environment that we labeled "external" (Figure). Reliability was assessed by use of the standard error of measure (SEM). The SEMs were found to be .20 for the internal subscale and .33 for the external subscale. These data suggested the likelihood of a low degree of error associated with the measures. In the second study,⁵ confirmatory factor analysis was performed to determine whether the 2-factor solution "fit" a second data set of 1,449 subjects who had health care coverage from a variety of sources. The results of this study supported the 2-factor model and provided evidence of criterion reference and discriminant validity. The SEMs were found to be .19 for the internal subscale and .24 for the external subscale. These data provided further evidence of reliability.

Procedure

Throughout a subject's course of care, relevant demographic, diagnostic, and treatment information was entered by each clinic into a database that was managed by Expert Clinical Benchmarks, LLC. The subject's name was removed, however, before any transactions with the research team. A written copy of the MRPS, along with a consent form, was given to the subject at the time of discharge from care. Subjects who failed to complete their course of care did not participate in this study. After providing informed consent, the subject

* MedRisk, Inc, 2701 Renaissance Blvd, PO Box 61570, King of Prussia, PA 19406.

1. The office receptionist is courteous
2. The registration process is appropriate
3. The waiting area is comfortable
4. My therapist does not spend enough time with me
5. My therapist explains my treatment
6. My therapist treats me respectfully
7. My therapist does not listen to my concerns
8. My therapist answers all my questions
9. My therapist advises me on ways to avoid future problems
10. My therapist gives detailed instructions regarding my home program

Figure.

Items in the 2 subscales of the MedRisk Instrument for Measuring Patient Satisfaction With Physical Therapy Care (MRPS). Scores for each item are coded from 1 (“strongly disagree”) to 5 (“strongly agree”). Items 4 and 7 were reverse coded for analysis. Items 1 to 3 represent the external subscale, and items 4 to 10 represent the internal subscale. The MedRisk Instrument for Measuring Patient Satisfaction With Physical Therapy Care is copyrighted and owned by MedRisk, Inc, and may not be reproduced or used without written permission of MedRisk, Inc.

completed the survey instrument and placed it in a sealed envelope in a special container in the waiting room. These data were collected and entered into the database by an Expert Clinical Benchmarks, LLC, data manager. Scores for each item from the MRPS were coded from 1 (“strongly disagree”) to 5 (“strongly agree”). Items 4 and 7 were reverse coded for analysis; thus, higher scores described a greater degree of satisfaction for all variables. The mean score of items 1 to 3 was used to represent the mean score for the external subscale, and the mean score of items 4 to 10 was used to represent the mean score for the internal subscale (Figure).

Data Analysis

The scores from each of the 2 subscales were summarized. Because the data were skewed toward high scores (4 and higher), they were dichotomized into those with all responses as 5, which we labeled as “complete satisfaction,” and those with 1 or more responses as less than 5, which we labeled as “not complete satisfaction.” Satisfaction measures in physical therapy typically are high; however, in satisfaction research, scores that reflect less than complete satisfaction indicate a degree of dissatisfaction.^{35–38} Therefore, we considered the dichotomization of these variables as reflecting a meaningful difference between scores.

The frequencies and percentages of subjects reporting complete satisfaction on the internal and external subscales were calculated for the entire sample and by sex. The presence of sex differences in the proportions of subjects reporting complete satisfaction and those reporting not complete satisfaction was determined by use of the Fisher exact test.³⁹

The relationship between longitudinal continuity and subject satisfaction was investigated initially by use of cross-tabulation to summarize the frequencies of subjects reporting complete satisfaction and those reporting not complete satisfaction relative to the presence or absence of longitudinal continuity. This procedure was performed for the internal and external subscales for the entire sample and for women and men. The relationship between longitudinal continuity and subject satisfaction was investigated further by use of binary logistic regression to calculate odds ratios (ORs) and their 95% confidence intervals. Odds ratios are useful in determining the increased or decreased likelihood of an event occurring in a subject with a given characteristic relative to a reference level of that characteristic.^{40,41} Odds ratios greater than 1.0 (significant) indicate an increased likelihood of an event occurring, whereas those less than 1.0 indicate a decreased likelihood. Confidence intervals provide an index of the precision of ORs. Confidence intervals that do not contain 1.0 are significant.

Initial analyses assessed the presence of longitudinal continuity to determine the likelihood of complete satisfaction on the internal and external subscales for the entire sample. Additional analyses were performed for women only and then for men only. All calculations were performed with SPSS version 11.5.[†]

Results

Frequencies of Subjects Reporting Complete Satisfaction

Within the total sample, 36.8% of the subjects reported complete satisfaction on the internal subscale, whereas 47.9% reported complete satisfaction on the external subscale (Tab. 2). The highest percentages of subjects reporting complete satisfaction were found for the external subscale, with 51.1% of women and 43.3% of men. Higher proportions of women than of men reported complete satisfaction on both the internal and the external subscales ($P<.01$).

Relationship Between Subject Satisfaction and Longitudinal Continuity

Tables 3 and 4 show the frequencies (percentages) of subjects reporting complete satisfaction and those reporting not complete satisfaction as a function of longitudinal continuity. Of all subjects who reported complete satisfaction on the internal subscale, 71.2% had longitudinal continuity, and 28.8% did not. Of all subjects who reported not complete satisfaction on the internal subscale, 42.1% had longitudinal continuity, and 57.9% did not (Tab. 3). Of all subjects who reported complete satisfaction on the external subscale, 66.8%

[†] SPSS Inc, 233 S Wacker Dr, Chicago, IL 60606.

Table 2.

Frequencies (Percentages in Parentheses) of Subjects in the Total Sample and by Sex Who Were Completely Satisfied With Care, as Measured by the Internal and External Subscales of the MedRisk Instrument for Measuring Patient Satisfaction With Physical Therapy Care (MRPS)^a

Subscale of MRPS	No. of Subjects Completely Satisfied With Care		
	Total Sample (N=1,502)	Women (n=878)	Men (n=624)
Internal	552 (36.8%)	353 (40.2%)	199 (31.9%)
External	719 (47.9%)	449 (51.1%)	270 (43.3%)

^a More women than men reported complete satisfaction on both the internal and external subscales ($P < .01$).

had longitudinal continuity, and 33.2% did not. Of all subjects who reported not complete satisfaction on the external subscale, 40.0% had longitudinal continuity, and 60.0% did not (Tab. 4).

ORs for Predicting Complete Satisfaction

For the internal subscale, subjects in the entire sample who were completely satisfied were more likely to have longitudinal continuity (OR=3.4) (Tab. 5). This finding was consistent for women (OR=3.2) and men (OR=3.5) (Tab. 5). Similar findings were noted for the external subscale for the entire sample (OR=3.0), women (OR=3.3), and men (OR=2.7) (Tab. 5).

Discussion

The findings from this study suggest that, for people completing outpatient physical therapy, complete satisfaction with care, as measured by the internal and external subscales of the MRPS, is strongly associated with longitudinal continuity. A total of 71.2% of the subjects who reported complete satisfaction with care on the internal subscale were treated by only 1 therapy provider. Only 28.8% of those who reported complete satisfaction were treated by more than 1 therapy provider. Interestingly, this trend also was observed for the external subscale; 66.8% of the subjects who were treated by only 1 therapy provider reported complete satisfaction, whereas only 33.2% of the subjects who had more than 1 therapy provider during their course of care did so. Our findings are similar to those reported for people seeking primary medical care.³ To our knowledge, this is the first quantitative report that identifies differences in satisfaction with physical therapy care as a function of longitudinal continuity.

Although these findings are preliminary and do not imply causal associations, they are thought provoking and suggest that longitudinal continuity may be a desirable policy for outpatient practice. There are several possible reasons why a patient may not have longitudinal continuity. They may relate to the complexity of the

patient's condition requiring additional physical therapist consultation or the need for a different provider to fill in for vacationing or ill colleagues. Another reason for a patient to have more than 1 treating therapist may relate to administrative convenience and the practice of scheduling a patient with the first available therapist rather than striving to maintain longitudinal continuity of care. In today's competitive health care environment, some facilities use a production model of health care delivery in which patients and therapists are considered interchangeable, with emphasis being placed on maintaining full schedules and maximizing productivity rather than on preserving longitudinal continuity.

In our previous work, we reported that items relating to a patient's perception of the quality of the patient-therapist communication (treating the patient with respect, explaining treatment, and answering questions) were the items most strongly linked to global measures of satisfaction with care.^{4,5} A model of health care delivery without longitudinal continuity does not preclude therapists from properly performing these tasks, although it may make it more challenging. Another potential explanation is that the quality of communication and trust may improve with longitudinal continuity. Our findings suggest that clinics striving to achieve high degrees of patient satisfaction should place emphasis on maintaining continuity of care between the therapist and the patient.

Another finding from our sample was that women were more likely to report complete satisfaction with care on both subscales of the MRPS. This finding is in conflict with findings from recent studies that have described women as being less satisfied than men with information received from health care professionals⁴² and with nursing care.⁴³ It is difficult to explain this observation given our data. The women in our study were slightly older than the men and were more likely to receive care for a spinal or a lower-extremity condition. There were, however, no other sex-based differences.

There are several limitations of our findings. All subjects in this study had completed a full course of physical therapy. Because of the nature of our design, subjects who failed to return for their final visit did not complete the MRPS instrument and accompanying consent form and therefore were not enrolled in our study. It is not known to what degree reports from those subjects would have influenced our findings. Thus, our data may not be generalized to subjects who do not complete a course of care. Our data cannot be generalized to subjects receiving inpatient care. The variables that we studied do not represent the complete array of all potential attributes that may affect subject satisfaction with care. For example, desire for care and patient expectations also have

Table 3.

Relationship Between Longitudinal Continuity and Complete Satisfaction or Not Complete Satisfaction, as Measured by the Internal Subscale of the MedRisk Instrument for Measuring Patient Satisfaction With Physical Therapy Care (MRPS), for the Entire Sample and by Sex

	No. of Subjects		
	No Longitudinal Continuity	Longitudinal Continuity	Total
Entire sample			
Complete satisfaction	159 (28.8%)	393 (71.2%)	552 (100%)
Not complete satisfaction	550 (57.9%)	400 (42.1%)	950 (100%)
Total	709	793	1,502
Women			
Complete satisfaction	103 (29.2%)	250 (70.8%)	353 (100%)
Not complete satisfaction	304 (57.9%)	221 (42.1%)	525 (100%)
Total	407	471	878
Men			
Complete satisfaction	55 (27.8%)	143 (72.2%)	199 (100%)
Not complete satisfaction	247 (58.0%)	179 (42.0%)	425 (100%)
Total	302	322	624

Table 4.

Relationship Between Longitudinal Continuity and Complete Satisfaction or Not Complete Satisfaction, as Measured by the External Subscale of the MedRisk Instrument for Measuring Patient Satisfaction With Physical Therapy Care (MRPS), for the Entire Sample and by Sex

	No. of Subjects		
	No Longitudinal Continuity	Longitudinal Continuity	Total
Entire sample			
Complete satisfaction	239 (33.2%)	480 (66.8%)	719 (100%)
Not complete satisfaction	470 (60.0%)	313 (40.0%)	783 (100%)
Total	709	793	1,502
Women			
Complete satisfaction	143 (31.8%)	306 (68.2%)	449 (100%)
Not complete satisfaction	264 (61.5%)	165 (38.5%)	429 (100%)
Total	407	471	878
Men			
Complete satisfaction	96 (35.6%)	174 (64.4%)	270 (100%)
Not complete satisfaction	206 (58.2%)	148 (41.8%)	354 (100%)
Total	302	322	624

Table 5.

Odds Ratios (ORs) and 95% Confidence Intervals (CIs) for the Influence of Longitudinal Continuity on the Likelihood of Complete Satisfaction With Care, as Measured by the Internal and External Subscales of the MedRisk Instrument for Measuring Patient Satisfaction With Physical Therapy Care (MRPS), for the Entire Sample and by Sex^a

	OR (95% CI)	
	Internal Subscale	External Subscale
Entire sample	3.4 (2.7–4.3)	3.0 (2.4–3.7)
Women	3.2 (2.4–4.3)	3.3 (2.5–4.4)
Men	3.5 (2.4–5.2)	2.7 (1.9–3.9)

^aAll ORs were significant at $P < .01$.

been reported as important predictors.^{44,45} Subject ethnicity, education, occupation, and prognosis also were not addressed. Thus, our data do not necessarily represent a complete explanation of the variance in subject satisfaction. Further study is needed to address these issues.

Conclusion

Approximately one third of all outpatients who completed a course of intervention reported complete satisfaction on the internal subscale (patient-therapist) of the MRPS. Nearly one half of all outpatients reported complete satisfaction with physical therapy care on the external subscale (patient-support staff). Women were slightly more likely to report complete satisfaction with care than were men. Subjects who received outpatient physical therapy care from only 1 provider during the entire course of treatment were approximately 3 times more likely to report complete satisfaction with care than those who received care from more than 1 provider. The findings suggest that clinics should make efforts to preserve longitudinal continuity of care as a means of improving patient satisfaction with care.

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