CE 2.5 Contact Hours
See text on pp. 75–76

Development, Testing, and National Evaluation of a Pediatric Patient-Family–Centered Care Benchmarking Survey

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This study provides evidence for reliability (the Cronbach α of .76–.94) and construct validity of the Patient-Family–Centered Care Survey developed by the researchers in collaboration with FKP Architects, used to measure and benchmark practice within pediatric institutions. The survey evaluates progress of integrating patient-family–centered care over time and can be triangulated with measurements of desired patient and institutional outcomes. **KEY WORDS:** *family-centered care benchmarking, implementation of concepts, patient-family–centered care, survey validation* *Holist Nurs Pract* 2008;22(2):61–74

Patient-family–centered care (PFCC) is the cornerstone of holistic pediatric nursing care. The Institute of Family-Centered Care defines *PFCC* as "an approach to the planning, delivery, and evaluation of health care that is grounded in mutually beneficial partnerships among health care providers, patients, and families. PFCC recognizes the integral role of the family in the health and well-being of the patient. It applies to patients of all ages and may be practiced in any healthcare setting."[1] The 4 core concepts of PFCC have been outlined in Table 1. In the PFCC philosophy, the patient determines the definition of family and the degree of the family's healthcare involvement, provided that he or she is developmentally mature and competent to do so. In pediatrics, particularly with infants and young children, *family members* are defined as the patient's parents or guardians.[2] The PFCC model requires movement toward a healthcare system that is driven by the body-mind-spirit needs of the patient and family rather than controlled by the healthcare system, healthcare providers, or the patient's disease.[1,3,4]

As a philosophy of care, PFCC supports families in their caregiving roles, promotes normal patterns of living, and ensures family collaboration and choice in the care of patients. *PFCC is described in the literature to include the following: providing families with open visitation (families are not considered visitors), formally including the family in policy decision making (families serve on institutional committees) and in patient care decision making* (families "round" with the healthcare team on their family member), educating families about important healthcare information (families are faculty for healthcare professions in classroom settings), and ensuring family comfort in support services and hospital design by influencing the planning, design,

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TABLE 1. Four Core Concepts of Patient-Family–Centered Care[1]

Dignity and respect	Healthcare practitioners listen to and honor patient and family perspectives and choices. Patient and family knowledge, values, beliefs, and cultural backgrounds are incorporated into the planning and delivery of care
Information sharing	Healthcare practitioners communicate and share complete and unbiased information with patients and families in ways that are affirming and useful. Patients and families receive timely, complete, and accurate information to effectively participate in care and decision making
Participation	Patients and families are encouraged and supported in participating in care and decision making at the level they choose
Collaboration	Patients and families are also included on an institution-wide basis. Healthcare leaders collaborate with patients and families in policy and program development, implementation, and evaluation; in healthcare facility design; and in professional education, as well as in the delivery of care

and allocation of space for new construction and renovations (*families are facility advisors*).[2,5,6]

To embed the symphonic composition of PFCC into the healthcare culture, a comprehensive understanding of PFCC and a strategy for action planning are required. Literature abounds describing the value of implementing PFCC as it relates to specific illnesses or conditions, such as patients with mental illness within residential treatment,[7] chronic illness,[8,9] and brain injury[10] as well as within hospital departments such as the critical care[11] and neonatal intensive care units,[12–14] maternity,[15] and postanesthesia care.[16] Hospitals and other healthcare organizations also have applied the core concepts of PFCC into processes to improve quality of care[16,17] and patient and family satisfaction.[18] Likewise, perception and understanding of PFCC have been studied to determine barriers[19] with resulting guidelines for implementation.[20]

Despite the desire to institute PFCC in most institutions, many hospitals have difficulty implementing the PFCC core concepts because of uncertainty about the ways in which to operationalize this philosophy of care into daily clinical practice.[21,22] To assist with these problems, the Institute of Family-Centered Care has resources available on their Web site (www.familycenteredcare.org) such as a comprehensive PFCC self-assessment for organizations to identify their strengths and needs regarding their current practice. Although this self-assessment is educational, questions still arise regarding how best to implement each of the PFCC core concepts. For example, how does one objectively assess whether an institution is comprehensively providing PFCC? How does a specific healthcare institution measure their level of PFCC practice? Are there certain components of PFCC that are more widely practiced than others? What are the stages of implementation? Are there any constructs that are pivotal in operationalizing PFCC? How does one institution's level of PFCC practice compare with practice nationally? We determined that answers to these questions were needed to facilitate the organizational assessment and implementation of PFCC at our pediatric institution and that these answers would be best interpreted by benchmarking our progress over time and in comparison to others.

PURPOSE

The purpose of our study was to develop and psychometrically test the PFCC survey that measures the degree to which families, leadership, and staff members perceive PFCC concepts are practiced within a pediatric healthcare center. In addition, we sought to test the PFCC survey nationally to benchmark our progress in implementing PFCC. The following research questions were evaluated:

1. Does the PFCC survey show evidence of content validity?
2. Does the PFCC survey show evidence of construct validity?
3. Does the PFCC survey show evidence of internal consistency reliability?
4. Can the PFCC survey be used to benchmark a pediatric healthcare institution's level of PFCC practice?

METHODS

Instrument development and content validity

The initial process for benchmarking PFCC practice included a site visit to our facility by an Institute of Family-Centered Care consultant. The purpose of the

consultation was to obtain a qualitative assessment of our organization's current understanding and staging of PFCC. The consultant conducted key informant interviews and focus groups about PFCC throughout the organization. Results of the assessment, captured within a narrative report, demonstrated our strengths and weaknesses. This site visit was helpful in validating our need for benchmarking PFCC and provided clues regarding possible implementation staging of the process. From this assessment, we came to the conclusion that the major shareholders of PFCC consisted of 3 main groups: patients/families, hospital leadership, and patient care staff.

From this initial assessment, it became clear that establishing PFCC benchmarks for our pediatric facility was a primary objective. Our goal to comprehensively implement PFCC could not be reached without criteria to evaluate the various steps of implementation as well as benchmarks to determine when the desired goals had been reached. Without benchmarking, how would we know when we got there? And, if we reached our goal, how did we compare to other similar institutions trying to achieve the same level of practice? Therefore, we identified that valid and reliable benchmarks were needed to determine the degree to which PFCC was being practiced within our institution. Because such benchmarks for PFCC did not exist, our next goal was to develop and test a survey to evaluate our level of PFCC and then use the survey to compare our findings with those of other pediatric institutions nationwide.

We began our survey development with a diverse group of team members, project goals, and timelines. The survey development team consisted of a nurse research manager, data analyst, respiratory care director, facility development director, architecture consultant with FKP Architects, social work director, and a nursing research consultant who all had experience in PFCC. Items for the PFCC survey were generated from the 4 PFCC core concepts and by literature review, PFCC expert consultation, and focus group discussions. We then developed a list of activities related to the core concepts of PFCC. When we believed the list comprehensively captured the domain of PFCC, we then began to place conceptually related items into multiple categories or subscales that defined the domain. Table 2 presents a list of the PFCC subscales by factor analysis. The PFCC survey for leadership and staff includes 17 subscales with 107 items. The PFCC survey for families includes only 10 subscales with 58 items because questions related to internal policies that families could not answer were eliminated (Table 2).

TABLE 2. PFCC Subscales

	# of items
PFCC subscale activities	
Togetherness during normal times[a]	4
Togetherness during critical times[a]	4
Family participation and involvement[a]	5
Comprehensive definition of PFCC[a]	5
Family involvement in hospital[a]	8
Children involvement in hospital[a]	8
Design and quality of staff areas[a]	3
Overall design of hospital	7
Design and quality of parking	7
Design and quality of hospital entrances	5
Overall décor of the hospital	6
Use of signs within hospital	4
Design and quality of lounge areas	9
Design and quality of inpatient rooms	10
Quality of nearby facilities	6
Procedures and treatment rooms	2
Consultation rooms	3
Outcomes of PFCC implementation	
Organizational benefits of PFCC[a]	4
Improved retention due to PFCC concepts[a]	4
Improved satisfaction due to PFCC concepts[a]	4

[a]Questions were only asked of leadership and staff.

The Togetherness subscales measure the degree to which families are able to stay with their children during invasive and noninvasive procedures. The Family Participation and Involvement subscale focuses on the extent to which hospitals allow families to be involved in the treatment and evaluation of their child's health. The Comprehensive Definition of PFCC subscale includes items related to basic PFCC concepts. Family and Children Involvement in Hospital items were derived to discover to what extent families and children (patients and siblings) are involved in developing hospital policies and design of space. The Design and Quality of Staff Areas subscale is designed specifically for leadership and staff to determine whether there are adequate respite areas for patient care staff—with the implied intent that providers must first take care of themselves before they can take care of others.

Also included on the PFCC survey for leadership and staff are 3 additional subscales to measure attitudes about the potential outcomes of implementing PFCC, consisting of 12 items. The

Organizational Benefits subscale includes items to determine whether institutional operations have improved as a result of implementing PFCC concepts. The Improved Retention subscale and the Improved Satisfaction subscale include questions about whether job satisfaction, retention of staff, and satisfaction are improved as a result of implementing PFCC.

The final 10 subscales, included on the survey for all 3 groups (Families, Leadership, and Staff), focus on design and policy elements. These include the degree to which PFCC is part of the overall design of the hospital and its décor as well as the design and quality of the hospital parking, hospital entrances, lounge areas, inpatient rooms, procedure and treatment rooms, and consultation rooms. Additional subscales were developed to determine the quality of nearby facilities for families and the quality of signs for patients and families.

The content validity of the PFCC survey was examined using the following process:

1. Three nationally known PFCC content experts were invited to evaluate the relevance and clarity of each item of the PFCC survey and evaluate the overall survey relevance. Each expert was sent a cover letter asking for their consultation in establishing the content validity of the survey, a copy of the PFCC survey, instructions for evaluating the survey, and a definition of terms. In addition, content experts were asked to offer suggestions on item revisions related to content flaws, construction, and biases.
2. The survey items were revised on the basis of the content experts' recommendations. No questions were deleted; however, the clarity of several questions was improved according to the feedback.
3. The PFCC survey was tested with volunteer end-users of approximately 15 in each group who had various clinical roles within our institution (ie, nurses, respiratory therapists, child life specialists), leadership roles (ie, managers, directors), and families. Each respondent self-selected his or her group. For example, a nurse could choose to take the survey as a family member if he or she wished to provide feedback of their own child's hospitalization experience at our institution or they could choose to respond in the role of a nurse.
4. On the basis of the pilot, further revisions were made to individual items to improve clarity. Because family could not answer questions about administrative policy formation nor the decision-making practices of the entire institution, only questions that family could answer were retained in the family version of the PFCC survey.

All respondents taking the survey were asked to indicate their degree of agreement with statements about PFCC. Each item was rated on a 4-point Likert scale ranging from 1 (*strongly disagree*) (the respondent did not perceive that the PFCC concept was being practiced in the hospital at all) to 4 (*strongly agree*) (the respondent strongly perceived that the PFCC concept was being fully practiced in the hospital). Mean scores on the PFCC survey range from 1.0 to 4.0 with a high score indicating PFCC was being implemented at an advanced level of practice.

Sampling and data-collection procedure

The next step was to conduct further psychometric testing of the PFCC survey. After developing a research proposal to do so, the study was deemed as exempt research by our hospital's institutional review board. An online survey service, Zoomerang, was used for survey dissemination. Zoomerang provides a Web-based product for Internet surveys. A variety of question formats are available, including yes/no, multiple-choice, multiple-response, and open-ended questions. Skip logic also is available to direct respondents to omit certain questions depending on how a previous question is answered. Once all items on the PFCC survey were entered into Zoomerang, a link to the Web site hosting the survey was developed. This link was used in an e-mail correspondence to invite potential survey respondents to participate in the survey.

In August 2005, data were obtained from our 406-bed, university-affiliated, pediatric, level I trauma center, located in the Southwest as well as from our national survey. E-mail invitations were sent out to the leadership and staff to participate in the PFCC survey. Leadership and staff also were asked to forward the link to other colleagues at our institution who might be interested in completing the survey. In addition, this link was provided to child life specialists so that it could be sent to families who had an e-mail address on file. Families who were present within the hospital also were asked by social workers to respond to the survey and given the Zoomerang link and access to hospital computers to do so. Simultaneously, e-mail invitations to participate in the survey were sent by the National Association of Children's Hospitals and

Related Institutions (NACHRI) to senior leadership at the 25 best pediatric hospitals of 2005 that we identified from the combined reports of *Child Magazine* (www.child.com) and *US News and World Report* (www.usnews.com).

All potential respondents were invited to participate, informed of the purpose of the study, assured that their responses would remain anonymous and the information obtained would remain confidential, and provided with the Zoomerang Web site link to complete the survey. In addition, each primary contact from the top 25 hospitals were promised a follow-up report of their findings comparing the level by which PFCC concepts were implemented in practice at their institution compared to the national benchmark findings if 30 responses were received from each facility (ie, 10 family participants, 10 leadership participants, and 10 staff participants). All respondents were asked to complete the survey within 3 weeks. Several e-mail reminders were sent. Upon taking the survey, respondents were asked to provide the name and location of their hospital and identify themselves as a family member, leadership, or staff participant; no other identifying participant information was included in the survey. Informed consent was implied by the participant's completion of the survey.

In October 2005, a preliminary report of the findings from this national survey was presented at the annual NACHRI conference in Palm Springs, California. After the presentation, strong interest to participate in the survey was voiced from other NACHRI hospital administrators who were not in the top-25 pediatric institutions originally invited to participate. Thus, in October 2005 the PFCC survey tool was opened to all 160 NACHRI hospitals by sending an e-mail invitation to the chief nursing officer of each hospital. Each hospital chose its own method of disbursing the survey link within their institution. Several reminder e-mails again were sent. The surveying period ended in December 2005.

Data analysis

Survey responses were compiled by Zoomerang, and results were available in either graphic or raw-data format. Once the raw data were downloaded in comma-delimited format, it was transferred to an SPSS 14.0 for Windows (SPSS, Inc) database where statistical results were computed. Data responses were then coded on the basis of hospital and group. Response frequencies for each hospital were run to determine whether the required 10 or more respondents each for families, leadership, and staff had been obtained.

The Cronbach α was calculated to determine the internal consistency reliability of the PFCC survey. Because the survey consisted of 20 discrete constructs that composed the practice of PFCC, a Cronbach α was run for each of the 20 subscales. Once the reliability of the survey subscales had been established, items were factor analyzed using a principal component analysis on each of the 20 subscales to confirm that the items within the subscale were measuring one dimension or concept. The criterion for confirming the 20 factors included using eigenvalues of 1.0 or greater, factor loading of .50 or above, and conceptual consistency and interpretability.

PFCC scores for families, leadership, and staff, calculated from the Likert survey responses to determine frequency distributions and mean scores for each subscale, were used to benchmark hospitals on the level by which PFCC concepts were practiced. Statistical comparisons were performed on the national data to determine differences among groups using a one-way ANOVA with Bonferroni post hoc analyses. SPSS 14.0 was used for all the analyses and the level of significance was set at .05.

RESULTS

Sample description

Respondents from our institution included 8 families, 26 leadership, and 62 staff members. The national sample included 1703 respondents from 83 NACHRI hospitals (52% response rate). Nationally, by group there were 267 family, 770 leadership, and 666 staff respondents. Hospitals from across the United States were represented as well as hospitals in Canada, Australia, and Italy.

Because only 4 of the 83 participating hospitals achieved the required 10 respondents from each of the family, leadership, and staff groups necessary to generate a follow-up report, we decided to relax this requirement to a minimum of 10 respondents total per hospital. Overall, 34 hospitals received a minimum of 10 responses; therefore, those 34 institutions were included in the benchmark rankings and received individual overall reports of the findings.

All responses from the 83 hospitals were used to develop the cut points to determine level of PFCC

practice as well as the overall hospital report. In addition, all responses from the 83 hospitals were used to measure reliability of the survey tool. From there, only responses to hospitals that received the minimum required number were used in the benchmarking process. This included individual hospital mean scores and rankings.

Internal consistency reliability

To determine the internal consistency reliability of the PFCC survey, a Cronbach α was run for each of the 20 subscales on the basis of the 1703 leadership, staff, and families who responded to the survey. The value of Cronbach α ranged from .76 to .94 for the subscales indicating high internal consistency reliability for the survey items for families, leadership, and staff (Table 3).

Validity

Factor analysis with varimax rotation was conducted to examine the construct validity of the 107 questionnaire items. Factor analysis is used to identify intercorrelated items from a data set to determine theoretical constructs. This analysis was conducted to ensure that items theorized to measure a particular dimension of PFCC included in a subscale were highly intercorrelated with the construct and each other. All 1703 responses from leadership, staff, and families were used, satisfying the minimum requirement of 10 subjects per scale item for factor analysis.[23] Separate factor analyses were conducted on each subscale to ensure that each subscale was made up of items that were measuring the same construct. All survey items loaded at .61 or greater for each subscale.

The "Togetherness" subscale was originally developed to measure the degree to which hospitals allow families to remain together through different procedures or treatments. The 8 items in the Togetherness subscale were expected to load on a single factor measuring this construct. However, factor analysis yielded a 2-factor solution for the 8 items. A total of 4 items loaded from 0.64 to 0.85 on the first factor that was renamed Togetherness During Normal, Noncritical Times and 4 items loaded 0.66 to 0.76 on the second factor that was re-named Togetherness During Critical Times and/or Invasive Procedures. Table 3 presents each subscale item along with its factor loading, the degree of variance explained by the factor, and the Cronbach α coefficient for each subscale. The percentage of variance explained from the subscales ranged from 50.0 for the Design and Quality of Parking subscale and the Design and Quality of Lounge Area subscale to 81.7 for Procedure and Treatment Room subscale.

National benchmarking evaluation

To determine the level by which PFCC concepts were implemented in practice, an overall mean PFCC score was calculated from the 1703 respondents using all Likert scale items. Hospitals were then categorized on the basis of the 33rd and 67th percentiles of all overall mean values as determined through a frequency distribution. These categories determined whether hospitals were in the beginning (mean < 2.71), intermediate (mean $= 2.71$–3.1), or advanced (mean $>$ 3.1) level of PFCC practice.

The overall mean PFCC score for all hospitals was 2.92 (SD $= 0.45$; min $= 1$, max $= 4$) indicating an overall intermediate level of practice. On the basis of the mean scores, hospitals were performing at an advanced level of practice in allowing families to stay with their children during normal, noncritical times (mean $= 3.39$) and allowing families to participate in evaluating their child's condition and developing the plan of care (mean $= 3.20$); the overall design of the hospital (mean $= 3.24$); the use of signs (mean $=$ 3.19); and the design and quality of consultation rooms (mean $= 3.17$) and overall hospital décor (mean $= 3.11$). On average, hospitals were performing at an intermediate level of practice in allowing families to remain with their child during critical times such as during invasive procedures, presurgical anesthetic induction, and CPR (mean $= 2.84$); design and quality of treatment rooms (mean $= 2.82$), hospital entrances (mean $= 2.96$), lounge areas (mean $= 2.96$); quality of nearby facilities for families (mean $= 2.84$); and clear definitions of PFCC (mean $= 2.92$). However, hospitals averaged a low level of practice in involving children (mean $= 2.39$) and families (mean $= 2.64$) in hospital design and policy and in the design and quality of inpatient rooms (mean $= 2.64$), parking (mean $= 2.67$), and staff areas (mean $= 2.67$).

In terms of PFCC outcomes, hospitals' overall averages were at an advanced level of practice in recognizing the benefits of PFCC (mean $= 3.20$) and recognizing improved satisfaction (mean $= 3.16$). They averaged an intermediate level of practice in recognizing improved retention rates for key personnel (mean $= 2.75$).

TABLE 3. Factor Loads, Variance, and the Cronbach α per Subscale

Subscale	*N*	Factor load	Variance explained	The Cronbach α
Togetherness during normal times	1351		66%	.82
24 h		0.81		
Shift reports		0.84		
Rounds		0.83		
Noninvasive		0.77		
Togetherness during critical times	1177		58%	.76
Invasive		0.78		
CPR		0.77		
Presurgical		0.77		
Postoperation		0.72		
Family participation and involvement	1355		71%	.90
Assessing symptoms		0.85		
Evaluating response		0.88		
Developing plan		0.87		
Providing care		0.79		
Discharge plan		0.83		
Comprehensive definition of PFCC	1309		58%	.82
Family definition		0.72		
Peer support		0.72		
Participate in staff education		0.73		
Job descriptions		0.82		
Performance review		0.81		
Family involvement in hospital	1164		66%	.93
Design of facility		0.78		
Policy making		0.86		
Processes		0.82		
Hospital committees		0.82		
Bio-Ethics		0.80		
Developing programs		0.82		
Outreach		0.79		
Developing materials		0.81		
Children involvement in hospital	1142		64%	.92
Design of space		0.78		
Patient support groups		0.72		
Policy making		0.87		
Patient care process changes		0.84		
Developing programs		0.84		
Outreach		0.77		
Employee related		0.77		
Training		0.83		
Design and quality of staff areas	1340		80%	.88
Respite areas exist		0.89		
Staff design		0.87		
Staff convenient		0.93		
Overall design of hospital	1587		75%	.94
Place of healing		0.84		
Encourages partnerships		0.86		
Obtain information		0.89		
Obtain emotional support		0.88		
Learn about community		0.84		
Learn about illness		0.87		
Learn to care for child		0.87		
Design and quality of parking	1502		49%	.82
Adequate amount		0.77		
Accessibility		0.73		
Convenience		0.75		
Safety		0.76		
Cost		0.61		
Navigation		0.76		
Assistance		0.61		
Design and quality of hospital entrances	1554		64%	.86
Visibility		0.82		
Identification		0.81		
Welcoming		0.82		

(*continues*)

TABLE 3. Factor Loads, Variance, and the Cronbach α per Subscale (*Continued*)

Subscale	*N*	Factor load	Variance explained	The Cronbach α
Protection		0.76		
Accessibility		0.79		
Overall décor of the hospital	1542		62%	.88
Artwork		0.80		
Colors		0.85		
Outdoor views		0.78		
Respite areas		0.78		
Security systems		0.76		
Nurses stations		0.77		
Use of signs within hospital	1400		60%	.76
Positive wording		0.79		
Understandable language		0.75		
Translation services		0.67		
Understandable level		0.86		
Design and quality of lounge areas	1457		50%	.87
Location		0.66		
Furniture		0.80		
Comfortable		0.79		
Restful outdoors		0.69		
Food 24/7		0.63		
Visual interest		0.76		
Clocks		0.70		
Television		0.67		
Restrooms		0.71		
Design and quality of inpatient rooms	1321		62%	.93
Large enough		0.82		
Configuration		0.81		
Comfortable chair		0.75		
Desk		0.81		
Computer		0.73		
Secure storage		0.77		
Personalize		0.76		
Lighting adjustable		0.77		
Reduces noise		0.83		
Bathroom		0.80		
Quality of nearby facilities	1408		62%	.87
With tubs		0.76		
With laundry		0.78		
With food preparation		0.86		
With storage		0.84		
With coffee		0.73		
With ice		0.74		
Procedures and treatment rooms	1494		82%	.78
Space		0.90		
Supplies		0.90		
Consultation rooms	1544		69%	.77
Resource center		0.82		
Rooms available		0.83		
Spiritual		0.84		
Organizational benefits of PFCC	1387		69%	.85
Consistently practiced		0.83		
Improved operations		0.85		
Successful adoption		0.87		
Benefits exist		0.78		
Improved retention due to PFCC concepts	1238		78%	.91
Nurse retention		0.90		
Allied health retention		0.93		
Social worker retention		0.91		
Family support retention		0.80		
Improved satisfaction due to PFCC concepts	1150		67%	.83
Inpatient satisfaction		0.82		
Outpatient satisfaction		0.82		
Nurse satisfaction		0.83		
Doctor satisfaction		0.81		

TABLE 4. Mean PFCC Subscale Scores and Differences Among Respondent Groups[a]

	All hospitals, mean (SD)				
	Overall ($N = 1703$)	Families (1) ($N = 267$)	Leadership (2) ($N = 770$)	Staff (3) ($N = 666$)	Post hoc[b]
Subscale					
Togetherness During Normal Times	3.39 (0.64)	. . .	3.37 (0.64)	3.40 (0.64)	
Overall Design of Hospital	3.24 (0.59)	3.22 (0.62)	3.19 (0.60)	3.31 (0.57)	2 < 3
Family Participation and Involvement	3.20 (0.58)	. . .	3.14 (0.58)	3.26 (0.57)	2 < 3
Use of Signs Within Hospital	3.19 (0.56)	3.23 (0.60)	3.15 (0.55)	3.23 (0.55)	2 < 3
Consultation Rooms	3.17 (0.63)	3.19 (0.62)	3.13 (0.65)	3.20 (0.61)	
Overall Décor of Hospital	3.11 (0.60)	3.10 (0.59)	3.08 (0.61)	3.14 (0.58)	
Design and Quality of Hospital Entrances	2.96 (0.58)	3.04 (0.60)	2.90 (0.57)	2.99 (0.58)	2 < 1, 3
Design and Quality of Lounge Areas	2.96 (0.53)	2.99 (0.55)	2.91 (0.53)	3.00 (0.52)	2 < 3
Comprehensive Definition of PFCC	2.92 (0.61)	. . .	2.87 (0.61)	2.97 (0.61)	2 < 3
Togetherness During Critical Times	2.84 (0.67)	. . .	2.83 (0.66)	2.86 (0.69)	
Quality of Nearby Facilities	2.84 (0.66)	2.77 (0.68)	2.82 (0.67)	2.90 (0.63)	1 < 3
Procedures and Treatment Rooms	2.82 (0.70)	2.91 (0.69)	2.74 (0.72)	2.87 (0.67)	2 < 1, 3
Design and Quality of Staff Areas	2.67 (0.72)	. . .	2.68 (0.73)	2.65 (0.71)	
Design and Quality of Parking	2.67 (0.65)	2.78 (0.60)	2.63 (0.67)	2.67 (0.64)	2 < 1
Design and Quality of Inpatient Rooms	2.64 (0.67)	2.58 (0.69)	2.58 (0.69)	2.75 (0.62)	1, 2 < 3
Family Involvement in Hospital	2.64 (0.63)	. . .	2.65 (0.63)	2.63 (0.64)	
Children Involvement in Hospital	2.39 (0.62)	. . .	2.36 (0.60)	2.44 (0.63)	
Outcomes of PFCC					
Organizational Benefits of PFCC	3.20 (0.56)	. . .	3.15 (0.55)	3.26 (0.56)	2 < 3
Improved Satisfaction Due to PFCC	3.16 (0.52)	. . .	3.12 (0.51)	3.20 (0.52)	2 < 3
Improved Retention Due to PFCC Concepts	3.02 (0.61)	. . .	3.00 (0.59)	3.03 (0.62)	
Overall score for hospital	2.92 (0.45)	2.94 (0.49)	2.88 (0.44)	2.96 (0.44)	2 < 3

Abbreviation: PFCC, patient-family–centered care.
[a]Missing data indicate that families were not asked to answer selected subscales.
[b]The numbers in parentheses in column heads refer to the numbers used for presenting significant differences in the last column titled "Post hoc." The level of statistical significance was .05.

Overall, families and staff tended to rate hospitals higher on PFCC practice than did leadership respondents. In fact, *the average ratings of leadership were significantly lower than those of staff on the overall total PFCC score* as well as on 10 different subscales. In addition, families rated hospitals significantly higher than leadership on 3 separate subscales ($P < .05$ for all analyses). Table 4 presents the overall mean scores and difference among the 3 different groups for each subscale.

Following the analyses, each of the 34 qualifying hospitals was sent a report detailing their PFCC scores and national rankings accompanied by a letter from our chief nursing officer thanking them for their participation and ensuring that their hospital's scores and rankings would be kept confidential. An introduction explaining the survey's methodology, reliability statistics, and the cut points used for determining the levels of practice was included. The PFCC national benchmarking report was made up of 3 pages of tables (Fig 1). The first page presented the hospital's mean scores on each subscale, along with its overall mean PFCC score as well as its ranking overall and on each subscale. Mean scores on each subscale were ranked, high to low, among all qualifying hospitals. Individual hospitals could identify how they ranked in comparison with other hospitals nationally; however, they were not able to identify which hospitals ranked higher or lower than they did. The second page of the report presented a table of mean scores by group (ie, leadership, staff, and families) for the hospital, with any statistically significant differences among groups indicated. The final page presented a color schematic that illustrated which level of practice the hospital fell into on each subscale.

DISCUSSION

The need for a valid and reliable instrument to measure the degree to which PFCC is practiced within

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Patient-Family-Centered-Care Benchmarking Results

Institution: Children's Hospital A
Location: Anywhere, USA

Synopsis: Children's Hospital A's overall mean score ranks 14th (out of 34 qualifying hospitals) on Patient-Family–Centered-Care practice. The number of responses per group were as follows: 24 leadership, 60 staff and 12 families of patients. Children's A scored highest on the "Family Participation" and "Overall Design" subscales. Compared to other qualifying hospitals, Children's A ranks in the top-10 on "Quality of Nearby Facilities" "Family Participation and Involvement," "Procedures and Treatment Rooms," "Overall Design of Hospital", "Use of Signs Within Hospital," and "Consultation Rooms."

Mean Scores for Children's Hospital A by Subscale

Subscale	*Mean*
Family Participation and Involvement	3.43
Overall Design of Hospital	3.34
Togetherness During Normal Times	3.28
Use of Signs Within Hospital	3.26
Consultation Rooms	3.19
Overall Décor of the Hospital	3.16
Organizational Benefits of PFCC	3.11
Quality of Nearby Facilities	3.09
Design and Quality of Lounge Areas	3.07
Improved Satisfaction due to PFCC Concepts	2.99
Procedures and Treatment Rooms	2.98
Design and Quality of Hospital Entrances	2.98
Clear Definition of PFCC	2.82
Togetherness During Critical Times	2.79
Improved Retention due to PFCC Concepts	2.78
Design and Quality of Staff Areas	2.69
Design and Quality of Inpatient Rooms	2.68
Design and Quality of Parking	2.48
Family Involvement in Hospital	2.36
Children Involvement in Hospital	2.15
Overall Score for Hospital	**2.87**

Rankings for Children's Hospital A by Subscale (Out of 34 Hospitals)

Subscale	*Rank*
Family Participation and Involvement	8
Overall Design of Hospital	10
Togetherness During Normal Times	19
Use of Signs Within Hospital	10
Consultation Rooms	10
Overall Décor of the Hospital	11
Organizational Benefits of PFCC	14
Quality of Nearby Facilities	5
Design and Quality of Lounge Areas	10
Improved Satisfaction Due to PFCC Concepts	20
Procedures and Treatment Rooms	9
Design and Quality of Hospital Entrances	15
Clear Definition of PFCC	11
Togetherness During Critical Times	18
Improved Retention Due to PFCC Concepts	21
Design and Quality of Staff Areas	20
Design and Quality of Inpatient Rooms	18
Design and Quality of Parking	20
Family Involvement in Hospital	20
Children Involvement in Hospital	27
Overall Ranking For Hospital	**16**

FIGURE 1. Sample patient-family–centered care benchmarking report. (*Continues*)

Patient-Family-Centered-Care Benchmarking Results

Institution: Children's Hospital A
Location: Anywhere, USA

Mean Scores for Children's Hospital A
Differences Among Groups

	Children's Hospital A, mean			
	Leadership	*Staff*	*Families*	*Overall*
Subscale				
Family Participation and Involvement	3.36	3.48	…	3.43
Overall Design of Hospital	3.25	3.36	3.38	3.34
Togetherness During Normal Times	3.27	3.29	…	3.28
Use of Signs Within Hospital	3.23	3.25	3.61 [a]	3.26
Consultation Rooms	2.97	3.14	3.32	3.19
Overall Décor of the Hospital	3.12	3.14	3.19	3.16
Organizational Benefits of PFCC	2.94	3.15	…	3.11
Quality of Nearby Facilities	3.04	3.05	3.21	3.09
Design and Quality of Lounge Areas	2.92	2.99	3.43 [a]	3.07
Improved Satisfaction Due to PFCC Concepts	2.85	3.08	…	2.99
Procedures and Treatment Rooms	2.82	2.96	3.04	2.98
Design and Quality of Hospital Entrances	2.84	2.98	2.99	2.98
Clear Definition of PFCC	2.73	2.94	…	2.82
Togetherness During Critical Times	2.72	2.80	…	2.79
Improved Retention Due to PFCC Concepts	2.80	2.75	…	2.78
Design and Quality of Staff Areas	2.65	2.71	…	2.69
Design and Quality of Inpatient Rooms	2.57	2.62	3.10	2.68
Design and Quality of Parking	2.55	2.59	2.74	2.48
Family Involvement in Hospital	2.40	2.28	…	2.36
Children Involvement in Hospital	2.08	2.19	…	2.15
Overall Score For Hospital	**2.87**	**2.92**	**3.16**	**2.93**

[a] Denotes a statistical difference among groups at the .05 level.

FIGURE 1. (*Continued*)

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Patient-Family-Centered-Care Benchmarking Results

Institution: Children's Hospital A
Location: Anywhere, USA

Children's Hospital A
Level of PFCC Practice

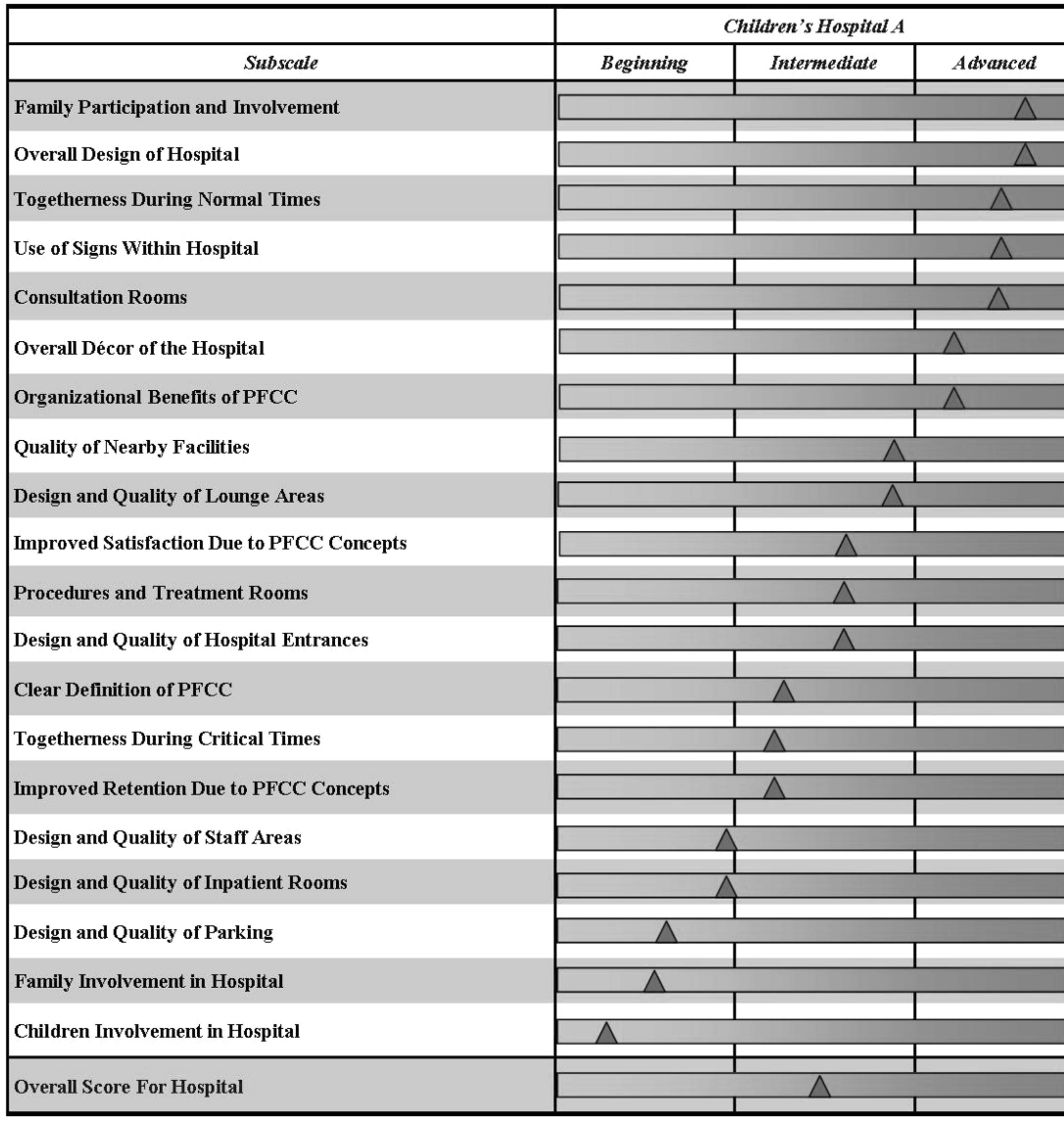

FIGURE 1. (*Continued*)

our pediatric institutions prompted the development of this instrument and this study. The psychometric evaluation of the instrument data from a sample of greater than 1700 families, leadership, and staff respondents of 83 NACHRI hospitals provided empirical evidence for the validity and reliability of the PFCC survey. The factor analysis revealed that all survey items within the subscales loaded greater than 0.50 providing evidence of the instrument's construct validity. This study is the first to document levels and benchmarking of PFCC practices in multiple pediatric facilities. It is also the first to identify that PFCC practices are perceived differently among families, leadership, and staff perhaps as a result of their own sphere of experience. Finally, the Cronbach α coefficients of .98 for leadership and staff respondents and .97 for family respondents provide support for the internal consistency reliability of the overall PFCC questionnaire. *Findings from this study demonstrate that the PFCC survey is a valid and reliable instrument for measuring and benchmarking PFCC practices in pediatric institutions*.

The authors were encouraged by the national institutional interest in participating in the PFCC survey. While many hospitals are at various levels of PFCC practice, it appears that many are in need of a valid and reliable instrument by which to measure and benchmark their own practice.

LIMITATIONS

This study has several limitations. The self-selection of the families, leadership, and staff may represent a *possible selection bias* because those responding to the survey may have had more positive attitudes toward PFCC and therefore their perceptions may not be representative of the respondent groups. Also the unknown diversity of the group weakens the generalizability of the findings. A randomized sample identifying the demographic characteristic of each respondent group would be desirable and could be used in benchmarking reports for comparison among institutions. Our benchmarking group was limited to only 41% (34/83) of the participating pediatric institutions because *more than half did not meet the criteria for returning a minimum of 10 responses overall*. In addition, the PFCC survey is limited for use in pediatric institutions but could be adapted for use in adult facilities with further psychometric testing.

There are many advantages and disadvantages of using Internet survey research. Online survey research provides a low-cost, relatively maintenance-free alternative to paper surveys. The use of Zoomerang allowed survey responses to be received immediately and stored in an electronic database and facilitated basic data analysis without the need for housing a large database locally. *Limitations of our online survey, however, also may have included issues related to access and sampling. At least 2 hospitals reported having families who did not have Internet access at home or at the hospital and, therefore, were unable to participate*. Inability to access the Internet may have resulted in selection bias because only certain segments of the population could participate.

Another limitation to this study is the possible item redundancy in 2 of the subscales of the questionnaire. The 2 items in the "Procedures and Treatment Rooms" and the 3 items in the "Improved Retention Due to PFCC Concepts" subscales each loaded at greater than .90. This usually indicates that 1 or more of the items in the subscale should be removed; however, because of the high validity and consistency within the questionnaire, it was decided to retain these items.

IMPLICATIONS FOR PRACTICE

PFCC is the cornerstone of pediatric healthcare. The PFCC survey evaluates the level by which PFCC is being implemented in practice. By using its survey data, an organization can identify whether PFCC is actually being practiced, whether all the core PFCC concepts are included, and at what level of practice the institution is functioning on the basis of the perceptions of their families, leaders, and staff. It also can be used to evaluate the progress of integrating concepts of PFCC over time and triangulate with measurements of patient and institutional outcomes as well as other desired outcomes such as patient-family satisfaction and staff satisfaction and retention to identify the benefits of PFCC. The usefulness of this tool is far reaching in its application to enhance PFCC practice because it furnishes an objective- benchmarking appraisal about level of practice that typically has been relegated as a purely subjective phenomenon.

The development of this instrument is an important step in assessing and implementing PFCC. But, in addition, by benchmarking the PFCC scores from one institution against national PFCC scores, an individual institution can assess their strengths (ie, PFCC

subscores indicating areas of advanced level of practice) and weakness (ie, subscores indicating areas of beginning levels of practice) along a continuum of activities related to integrating PFCC into practice. Because the PFCC survey provides benchmarking evidence, it provides a road map for implementation and corrective action planning that is staged, strategic, and measured. Such benchmarking allows the organization to stage its efforts in implementing the core PFCC concepts into beginning, intermediate, and advanced stages. For example, if the organization identifies they have accomplished most of the "beginning" areas of practice, then efforts can be targeted more effectively toward facilitating intermediate or advanced practice. Areas of strength can be enhanced and areas of weakness can be targeted using evidence-based practice models to establish action-planning improvement. For example, our institution identified that we were functioning at the beginning level of practice related to involvement of children and families in hospital design compared to national findings. On the basis of this finding, our corrective action plan includes changing our policy regarding the involvement of children and families and soliciting feedback from them on the design of inpatient rooms for our new patient care tower scheduled to be completed this year.

SUMMARY

The psychometric testing of the PFCC survey provides preliminary evidence that the survey is a reliable and valid instrument to benchmark the level of PFCC practice within pediatric institutions. The PFCC is useful in the design of corrective action plans, education, and needed resources to enhance the level of PFCC.*

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*To participate in future national benchmarking PFCC surveys, please e-mail your request to PFCCSurvey@childrens.com. Also, include the e-mail address or mailing addresses of the contacts in your organization that should receive the survey link to distribute to participants.