The Effect of a Patient- and Family-Centered Care Curriculum on Pediatrics Residents' Patient-Centeredness

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Abstract

Background Patient- and family-centered care (PFCC) approaches to care are important in enhancing the patient-centeredness of the health care experience, yet little is known about the effectiveness of formal approaches for teaching patient-centeredness in residency.

Intervention We developed and implemented a PFCC curriculum and assessed its impact on residents' self-perceptions of patient-centered behavior and practices.

Methods We used a quasi-experimental, nonrandomized approach with a pretest-posttest design. An experimental group of 24 interns filled out the Patient Practitioner Orientation Scale (PPOS) before residency, and a control group of 18 graduating residents who had not been exposed to a PFCC curriculum also completed the PPOS. After 2 years of residency and exposure to a PFCC curriculum, interns in the experimental group repeated the PPOS. We compared mean total and subscale PPOS scores.

Results There was no difference in baseline total or subscale PPOS scores between the experimental and control group. The mean total PPOS score for the experimental group after exposure to the curriculum was 4.55 ($P = .45$), reflecting no change in patient-centeredness. The 17 female interns in the intervention group were more patient centered (4.8 ± 0.36) than the 6 male interns (4.2 ± 0.38) ($P = .005$), scoring significantly higher (4.6 ± 0.39 versus 4.0 ± 0.38) in the sharing domain ($P = .001$).

Conclusion Interns' exposure to a PFCC curriculum did not result in a change in their perceived patient-centeredness. Most pediatrics residents at our children's hospital perceive themselves as patient and family centered at the start of residency and remain so throughout.

Introduction

The Institute of Medicine's (IOM's) report *Crossing the Quality Chasm*[1] included patient- and family-centered care (PFCC) as 1 of the 6 aims for improvement for the nation's health care system. The report challenged health care organizations to pursue these aims through system redesign, including innovative educational strategies to better prepare the health care workforce to participate in improvement and practice patient- and family-centered care. The American Academy of Pediatrics (AAP)[2] also has emphasized the importance of PFCC, emphasizing an approach that encourages mutually beneficial collaboration among patients, families, and health care professionals.

Despite the recommendations from the IOM and the AAP to increase the emphasis on PFCC and increasing efforts of medical schools to teach communication and professionalism, students may leave medical school more "doctor or disease centered" than when they enter.[3] In contrast, there is a growing body of literature that describes improved outcomes with a patient- and family-centered approach to health care. Specifically, parental presence during procedures,[4,5] parental involvement post procedure,[6] and active involvement of child life specialists during hospitalization[7] all have demonstrated important benefits for patients.

Despite this evidence, there is no common road map for teaching these skills. To address this knowledge gap, the pediatrics residency program and family members on staff at Children's Mercy Hospitals and Clinics in Kansas City, Missouri, designed a PFCC curriculum.[3]

Methods

Setting and Participants

Children's Mercy Hospitals and Clinics is a free-standing children's hospital with a fully accredited pediatrics

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residency program. The study used a nonrandomized control group pretest-posttest quasi-experimental design. The experimental group consisted of the entire group of 24 categorical pediatrics interns beginning residency in 2009, and the control group consisted of all 22 categorical pediatrics residents graduating from residency that same year. Residents could opt out if they chose not to participate in the research study.

Intervention

A PFCC curriculum was developed and implemented in July 2009. It was designed to teach residents the importance of partnering with families in the care of pediatric patients, while learning the behaviors and skills necessary for successful communication and partnership. The curriculum began during the orientation session with a discussion about engaging and collaborating with families, facilitated by members of our Family Advisory Board. At a Match Day lunch toward the end of the intern year, residents were paired with family members of children with medically complex conditions for a future in-home visit. During the second year, residents complete the in-home visit, which includes specific objectives and suggested discussion points to maximize the experience for both residents and families. After the visit, residents participated in an hour-long reflective session led by family members on staff at Children's Mercy Hospital. During the second year there was a formal, structured reflective practice session for residents during their hematology-oncology month, designed to help residents reflect on difficult discussions and situations they may encounter during this rotation. This was followed by a standardized patient encounter on a related topic.

Outcome Measure

The primary outcome measure was the assessment of self-perceived patient-centeredness through the Patient Practitioner Orientation Scale (PPOS). PPOS measures patients' and physicians' attitudes towards their roles in the health care relationship.[8] The tool consists of 18 questions that measure the beliefs of patients and physicians along a 6-point scale ranging from physician or disease centered (score of 1) to patient and family centered (score of 6). The scale measures 2 dimensions, caring and sharing. Caring refers to the extent respondents believe that emotions and interpersonal relationships are an important part of the physician-patient relationship, while sharing refers to the balance of power and information sharing between physicians and patients.[9] The reliability and validity of the scale to assess self-perceived centeredness in patients, medical students, and primary care physicians have been assessed in several studies reported in the literature.[10–12]

What was known

A patient- and family-centered approach to care is important in enhancing quality, but little is known about the effectiveness of formal teaching approaches.

What is new

Exposure to a patient- and family-centered curriculum did not increase pediatrics residents' self-perceived patient-centeredness. Residents showed a high degree of patient-centeredness before and after the intervention.

Limitations

Single-site, single-specialty study limits generalizability; the pretest-posttest design did not guard against external factors that may influence results.

Bottom line

Pediatrics residents perceived themselves as patient centered, with female residents scoring higher on the sharing dimension, and both sexes scoring equally on the caring dimension of patient-centeredness.

The experimental group of first-year residents completed the PPOS in June 2009 before beginning residency. At the same time the third-year graduating class, whose members had not been exposed to a PFCC curriculum, also completed the PPOS. After completing 2 years of residency and most of the curriculum, the experimental group completed a repeated application of the PPOS scale in July 2011. Data were matched and de-identified, and maintained by the residency coordinator who was not involved in data analysis or any other aspect of the research project.

Data Analysis

The differences in mean total PPOS and subscale PPOS scores between interns starting the curriculum (experimental group) and graduating residents (control group) were assessed via 2-tailed *t* test. Difference between total PPOS and subscale PPOS scores for male and female residents also were determined via 2-tailed *t* test. Pre-curriculum and postcurriculum total and subscale PPOS scores for the experimental group also were compared via a paired *t* test. Statistical significance for all tests was determined with a P value $<.05$. Data were analyzed with SAS software (SAS Inc, Cary, NC).

The Institutional Review Board of Children's Mercy Hospitals and Clinics reviewed and approved the study as exempt.

Results

Twenty-four interns (100%) completed the precurriculum PPOS and 23 interns (100%) completed the postcurriculum PPOS. One intern transferred programs after the first year and the data were not included in any of the analyses. The experimental group included 17 women (74%) and 6 men

TABLE **Patient Practitioner Orientation Scale (PPOS) Total and Subscale Scores by Pre and Post curriculum**

	PPOS Scale	Mean	SD	*P* Value
Pre	Total	4.64	0.43	.45
Post	Total	4.55	0.49	
Pre	Caring	4.68	0.42	.80
Post	Caring	4.71	0.48	
Pre	Sharing	4.57	0.49	.13
Post	Sharing	4.38	0.58	

(26%). The control group consisted of 17 of 22 graduating residents (78%) who completed the PPOS. This included 10 women (59%) and 7 men (41%) in the control group.

The mean (±SD) total PPOS score for the experimental group before exposure to the curriculum was 4.6 (±0.43). The range of total PPOS scores was 3.7 to 5.6. Interns scored similarly in the sharing domain (mean of 4.6 [±0.52]) and the caring domain (mean of 4.7 [±0.4]). Female interns (4.8 ± 0.36) were more patient centered than male interns (4.2 ± 0.38) ($P = .005$) and scored significantly higher than the men (4.8 ± 0.39 versus 4.0 ± 0.46) in the sharing domain ($P = .001$). There was no difference in female and male interns in the caring domain ($P = .11$).

The mean (±SD) total PPOS score for the 2009 third-year residents who had not been exposed to the curriculum (control group) was 4.5 (±0.40). There was no difference between mean total PPOS scores for the interns at the start of residency (4.6 ± 0.43) and the graduating resident control group (4.5 ± 0.40) ($P = .23$), including a lack of any differences in caring ($P = .97$) or sharing ($P = .06$) domain scores.

The mean total PPOS score for the experimental group of residents post curriculum was not statistically different from the score before exposure to the curriculum (4.5 [±0.49] versus 4.6 [±0.43]; $P = .45$; TABLE), and there also were no differences in the caring or sharing subscales. Twelve of 23 residents (52%) had a lower PPOS score after the curriculum and 11 of 23 (48%) had a comparable or higher PPOS score (FIGURE). Exposure to the curriculum also did not affect patient-centeredness for male or female participants.

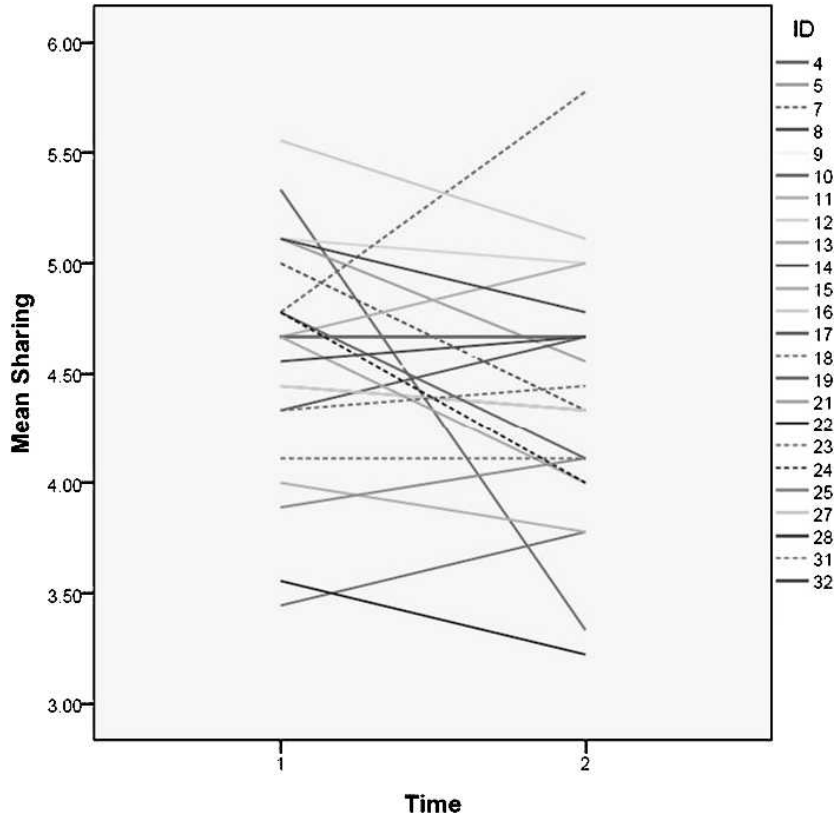

FIGURE **Individual Patient Practitioner Orientation Scale (PPOS) Pre and Post curriculum**

Discussion

Pediatrics residents have a self-perceived patient-centered attitude that is consistently positive throughout training. Female participants' scores suggest they are more patient and family centered than the male participants, a finding consistent with previous literature.[3] There was no difference between men and women in the caring subscale, suggesting male and female residents in our program equally believe that emotions and interpersonal relationships are an important part of the physician-patient relationship. Female participants scored statistically higher, however, in the sharing subscale, suggesting a greater comfort sharing information and power in decision making with families. This difference in patient-centered attitudes may be associated with demonstrated differences in communication between male and female doctors.[3]

While patient-centeredness has not been studied in residency, evidence from medical schools suggests students become less patient centered, especially in the sharing domain, as they progress through medical school.[3,12,13] Research by Tsimtsiou et al[13] suggests that students, struggling to develop confidence in their own clinical skills, may be less comfortable sharing information with patients and families. This was not found in the pediatrics residents in our study. Residents maintained a high level of self-perceived patient-centeredness throughout residency.

Despite being exposed to a curriculum designed to improve patient-centeredness, there was no change in PPOS scores in the experimental group. While one would expect an increase in patient-centeredness as a result of exposure to the curriculum, the lack of a change is not necessarily a negative finding. Reflecting on the deterioration of PPOS scores in medical school, the stability of the PPOS score in pediatrics residents may be a step in the right direction.

It is more likely that the curriculum did not address the specific behaviors that truly influence patient-centeredness by either being too limited in scope (ie, 5 discrete curricular elements spread over 2 years) or not targeted at the behaviors that most contribute to patient-centeredness. In a recent editorial in *Academic Medicine*, Jones et al[14] discussed the difficulty in grasping the Accreditation Council for Graduate Medical Education core competencies and the importance of purposely linking professional activities to competencies to improve both resident education and performance. Haidet et al[12] suggest that curricula aimed at increasing patient- and family-centeredness should include teaching interventions that make explicit the link between high-quality care and patient-centered care, and should be integrated with clinical activity through active role modeling, debriefing both positive and negative clinical encounters, and framing of patient care activities in the context of learning patient-centered behaviors and attitudes.

This study has several limitations. First, it was a single-site study and the results may not be generalizable. However, the difference in patient-centeredness between male and female participants from our small sample replicated previous data, suggesting our results may apply to other institutions. Second, the pretest-posttest design can allow for other factors to influence the results. The residents are exposed to so many variables in the course of their training that it is very hard to isolate the impact of a curriculum alone without a true control group. In addition, the 2 cohorts may have had baseline differences that may have influenced the results. Third, it is possible that the impact of the curriculum on residents' self-perceived patient-centeredness was limited by the relatively high baseline scores in the experimental group. Lastly, using a self-perception survey may not be the best way to measure patient- and family-centeredness in pediatrics residents. Other outcomes measures, such as direct observation of clinical encounters, may be a better approach.

Conclusion

Pediatrics residents in a single program viewed themselves as patient and family centered in their approach throughout residency, with female residents perceiving themselves as more patient and family centered than male residents, especially in their comfort level with sharing information and responsibility with families. There was no change in residents' perceived patient-centeredness after exposure to a PFCC curriculum.

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