Medical Education

Training residents and nurses to work as a patient-centered care team on a medical ward

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ABSTRACT

Objective: To train medical residents and nurses to work together as a patient-centered care (PCC) team on a medical ward and test its feasibility, nurses' learning, and patient outcomes.
Method: Working with administrative leadership, we consolidated residents' patients on one 32-bed ward. Already training residents in an evidence-based patient-centered method, we now trained 5 nurse leaders similarly, and they then trained all staff nurses. A national consultant visited twice. Specific team-building activities for nurses and residents fostered ward interactions. We used a retrospective pre/post/6-month post-design to evaluate nurses' knowledge and self-efficacy of patient-centered skills. Patients were assigned non-randomly to our unit or comparison units from our emergency room; using a post-test only design, the primary endpoint was patient satisfaction.
Results: 28 trained nurses showed improvement in knowledge ($p = 0.02$) and self-efficacy ($p = 0.001$). 81 treatment patients showed no improvement in satisfaction ($p = 0.44$).
Conclusion: Training nurses in patient-centered practices were effective. Unique in this country, we also trained nurses and residents together as a PCC team on a medical ward and showed it was feasible and well accepted.
Practice implications: We provide a template for team training and urge that others explore this important new area and contribute to its further development.

1. Introduction

The Institute of Medicine (IOM) urges that patient-centered care (PCC) replace present disease-focused approaches in order to close medicine's "quality chasm [1]." PCC places patients' needs and concerns foremost [2] and also has led providers to use these skills with one another in an expanded version of PCC sometimes called relationship-centered care [3]. Having a common platform from which to interact maximizes interactions and mutual respect, critical determinants of successful care teams.

Unfortunately, we know that poorly functioning teams are related to decreased patient safety [4–6]: more than 70% of fatal and other serious medical errors can be traced to poor communication among team members [7]. Poorly functioning teams also account for much nurse and physician dissatisfaction, with attendant high job turnover rates [8,9]. Similarly, if medical ward rounds are important to patient care, nurses' input is vastly under-represented [10]. Although studies are few and more rigorous ones are needed [11], current data indicate that training doctors and nurses to work as a team can be effective [12,13]. Difficult impediments to collaboration remain, chiefly human relationships, personalities, and an unfortunate zero sum milieu in which the nurse often loses [14,15]. On the other hand, doctors as well as nurses experience fears of poor performance and inadequacy, underscoring the importance of emotions and the need for teams to address such relational issues as well as clinical issues [15].

Responding to the Accreditation Council for Graduate Medical Education and the Joint Commission for Accreditation of Health Care Organizations recommendations for enhancing teamwork [11,16], we sought, in the training reported here, to teach improved teamwork to both internal medicine residents and nurses on a medical ward. While most teamwork research has been in acute care settings [15], it has been addressed on the medical ward [17].

Table 1
Patient-centered interviewing method.

STEP 1 – setting the stage for the interview
1. Welcome the patient
2. Use the patient's name
3. Introduce self and identify specific role
4. Ensure patient readiness and privacy
5. Remove barriers to communication
6. Ensure comfort and put the patient at ease

STEP 2 – chief complaint/agenda setting
1. Indicate time available
2. Indicate own needs
3. Obtain list of all issues patient wants to discuss; e.g., specific symptoms, requests, expectations, understanding
4. Summarize and finalize the agenda; negotiate specifics if too many agenda items

STEP 3 – opening the HPI
1. Open-ended beginning question
2. 'Non-focusing' open-ended skills (attentive listening): silence, neutral utterances, nonverbal encouragement
3. Obtain additional data from nonverbal sources: nonverbal cues, physical characteristics, autonomic changes, accouterments, and environment

STEP 4 –Continuing the patient-centered HPI
1. *Physical story* – obtain description of the physical symptoms [focusing open-ended skills]
2. *Personal story* – develop the more general personal/psychosocial context of the physical symptoms [focusing open-ended skills]
3. *Emotional story* – develop an emotional focus [emotion-seeking skills]
4. *Empathic responses* – address the emotion(s) [emotion-handling skills: NURS]
5. *Expand story and responses* – expand the story to new chapters (focused open-ended skills, emotion-seeking skills, emotion-handling skills)

STEP 5 – transition to the doctor-centered process
1. Brief summary
2. Check accuracy
3. Indicate that both content and style of inquiry will change if the patient is ready

We have previously described our long-established, one-month (full-time) PCC training program for residents [18,19], available from the authors on request. This paper addresses only the full training for the nurses in PCC and training both nurses and residents to work as a team. We view the latter, new and more difficult, as a work in progress rather than a definitive product. We hypothesized that the nurse learners trained in this program would increase their knowledge and self-efficacy with the basic 5-step patient-centered method we taught them (Table 1). We also explore several other possible impacts of training, including the effect on patients' satisfaction with their relationship to nurses and doctors on the ward and on nurses' and residents' perception of teamwork.

2. Methods

2.1. Program description

2.1.1. Theoretical background

In structuring the training, general system theory [20–22] and its medical derivative, the biopsychosocial (BPS) model [23,24], guided us. The BPS model provides the scientific and humanistic basis for supplementing disease considerations with psychosocial and emotional data. To operationalize the BPS model so that it could be used in a consistent, efficient way with each patient, we taught an evidence-based patient-centered model [2,18,25].

2.1.2. Working with the hospital

We worked closely with the leadership of a 740-bed community hospital to consolidate most residents' patients on one ward to enhance patient care, patient satisfaction, teaching, and interactions with nursing [26]. A recently vacated 32-bed medical unit became the centerpiece of our inpatient service and included a large conference room with the electronic equipment needed for our 33 residents. Since its inception in October of 2008, 50–80% of our patients have been located on the unit and most residency meetings occur here.

2.1.3. Aims

Following IRB approval, which included written consent at the time questionnaires were completed, our goals were to train the nursing leaders on the ward in PCC skills and, in turn, for them to train 35 staff nurses. We also trained residents and the nurses to interact as a team.

2.1.4. PCC skills objectives

Much training focused on the patient-centered method in Table 1 [2,27], supplemented by related approaches [28]. The behaviorally defined 5 steps and 21 substeps are learned in such a way that they are easily deployed by the end of the first teaching session. Subsequent teaching addresses this method, including its selective use depending on a particular patient's problem. Most teaching focuses on the italicized areas of Table 1 in Step 4, being sure that each encounter addresses the patients' physical, personal, and emotional story (i.e., the mind-body connection; the BPS connection), and that the learner elicits and responds to affect, guided by the mnemonic NURS: naming, understanding, respecting, supporting.

Because using PCC skills often identifies patients' previously unrecognized psychosocial and mental health problems, such as depression and substance misuse, we organized a biweekly conference for residents and nurses to introduce them to the clinical skills to manage these problems.

2.1.5. Attitude objectives

Essential in developing skills, we focused on attitude development in three areas: (1) using learner-centered approaches to foster life-long learning and collaborative agenda setting [29–32]; (2) enhancing learner–teacher relationships using the same interactional skills with trainees that we were teaching them to use with patients; e.g., NURS; (3) focusing on personal awareness of one's own emotions in a group setting [33]. As basic PCC skills were mastered, more time was spent on personal awareness, frequently addressing emotional issues that can interfere with successful team work; e.g., feeling humiliated or afraid of failure [15].

Table 2
Training for nurses.

Step 1	Faculty trains nursing leaders	Focus	Time
	Stage 1	PCC model	Two 3-h sessions
		Personal awareness	
	Stage 2	Supervised bedside interactions	4 h
	Stage 3	How to teach other nurses	4 h
Step 2	Nursing leaders train staff nurses		
	Stage 1	PCC model	4 h seminar/group
	Stage 2	Supervised bedside interactions	3–5 1-h sessions/nurse
Step 3	Maintenance training for staff nurses		
	Stage 1	Bedside interactions with feedback from nurse dyads	Weekly
	Stage 2	Bedside interactions with feedback from nursing leadership	Monthly
Step 4[a]	Increase cadre of nursing leaders		
	Stage 1	Train more nursing leaders	
		More training for nursing leaders	
	Stage 2	Leaders help train medical & nursing students & residents	

[a] Projected activity not yet implemented.

2.1.6. Procedure

Summarized in Table 2, faculty conducted two 3-hour seminars for nursing leadership where they learned the basic PCC model via didactics and extensive role playing [34]. Personal awareness also was addressed at this time. An additional 4 h were spent on supervised interactions at the bedside. Finally, learners had a 4-h seminar focused on how they would teach this material to other nurses.

Next, these nursing leaders conducted several 4-h seminars for groups of staff nurses (4–8 participants) to introduce them to the same basic PCC methods, relying primarily on role play. They then worked one-on-one with the nurses for 1 h at a time until the latter had mastered the basic patient-centered model. This required 3–5 additional 1-h sessions per nurse. For maintenance of skills, on a weekly basis, assigned staff nurse dyads critiqued direct observations of one another with a patient; nurse leaders observed the interactions of each nurse with one patient monthly.

2.1.7. Supplemental material

Learners were provided copies of the textbook on which the training was based and its accompanying DVD [2,27].

2.1.8. Consultant

Richard Frankel, PhD (Indiana University), an expert in PCC and team-building, worked with us for two days in the 3rd month of the program and again for two days 6 weeks later. Each visit was followed up in 2 weeks with a videoconference attended by residents and nurses. Using an independent consultant provided "fresh eyes" and feedback about the project.

2.1.9. National meeting

One nurse leader and one staff nurse attended the national meeting of the Academy on Communication in Healthcare (AACH) in Rochester, MN (chris@aachonline.org).

2.2. PCC teaching methods

2.2.1. Didactic

A lecture format was used for introduction to PCC, for an overview of the teaching, and for outlining the interviewing method.

2.2.2. Critiquing interviewing and patient management skills

We critiqued interviewing and interactional skills from role plays and direct observation of patient contacts.

2.2.3. Group work/personal awareness

No formal psychologically oriented group activity or psychotherapy occurred. Rather, we integrated personal awareness work into the skills training [33]. Before and following an interviewing skills exercise, we systematically inquired about the learner's emotions; e.g., apprehension before an interaction; fear of poor performance afterwards. Pacing the teaching with the learner's comfort in addressing personal materials, we conducted personal awareness work for up to 10 min at a time, always focusing on emotions (e.g., feeling intrusive) and their behavioral consequences (e.g., avoiding discussion of death), and, in turn, probing to see whether these issues occurred elsewhere in the learners' professional and personal lives. For example, fear of setting limits leads to inability to close an interview, and the nurse or resident reports similar previous problems with patients and in her/his home life. At the biweekly conference, we also addressed prominent emotions of residents and nurses around issues such as opiate misuse in many ward patients.

2.3. Team building

2.3.1. Close working arrangement of faculty and hospital nursing and medical leaders

As part of arranging the consolidated ward, a planning team of nurses, doctors, and others developed cohesive working relationships during the year of planning. We identified mutual interests, such as improving patient satisfaction and nurse–physician communication, and we were open and clear about our respective needs and came to appreciate the importance of timing, patience, and trust. We continue to meet regularly.

Faculty also developed strong relationships with the nursing leaders on the newly consolidated ward. While interested, they initially were uncertain and uneasy about having large numbers of residents with very sick patients on what previously had been a less intensive care area. Again using interpersonal and negotiating skills and listening to all concerns, we problem-solved, compromised, and gradually resolved the major issues facing the team. A testimony to the nursing leaders' commitment was their ability to successfully train all staff nurses ahead of schedule.

2.3.2. Developing informal and formal ward interactions

To facilitate resident and nurse interactions, we implemented the many activities outlined in Tables 3 and 4. It was not possible to quantify these activities, as they varied by type, by attending physician, and by time of the study. Late in the study some activities were as much as 50% of the time, while early in the study as low as 10%. The following is our overall estimate for examples of some activities: nurses rounded with residents when their patients were discussed – 30%, residents meet with

Table 3
Informal activities to enhance the process of team care.

(1) Official opening of the ward to meet each other.
(2) Prominently display in the nurses' station and conference room pictures of all nurses and residents.
(3) Open the conference room for all meetings.
(4) Ground rules for the process of care.
   (a) Develop common eraser-board for each nurse's patient assignments, nurses' questions, residents' questions, and identification of the on-call resident (junior and senior) and their pager numbers.
   (b) Respond to queries on front of chart within 24 h; on the eraser-board within 4 h.
   (c) Introduce yourself if you do not know each other and indicate your role on the ward team; e.g., I am a float nurse; I am a new resident.
   (d) Use first names.
   (e) Thank those who have helped and demonstrate respect verbally and through body language.
   (f) Ask one another for informal updates when you see them away from patients.
   (g) Make explicit who will do what and when.
(5) Nurses and residents play on ward softball team together.

charge nurse or case manager each day – 45%, morning chart rounds between nurses and residents – 10%, weekend joint rounding – 10%, evening rounds – 20%. Nurses' rounding with residents received the most attention and was structured so that the nurse's patients were seen consecutively, to make it more efficient, nurses would present their material first but participate in the discussion subsequently, including at the bedside. Nurses spent from 3 to 15 min in these activities per patient. Attending and resident feedback was that nurses' input shortened rounds, if anything, nurses often offering key bits of information that solved problems.

2.3.3. Biopsychosocial conference

This biweekly conference occurred during the residents' morning report and included two of the authors (FCD, RCS), the faculty attending, nurse leaders, and a staff nurse involved with the patient. The goals of this conference were to: (a) introduce the clinical skills and guidelines for identifying and managing difficult psychosocial issues arising on the ward; (b) develop personal awareness via discussions of these difficult cases; and (c) give support to team members providing care. Each conference focused on a single topic (e.g., depression and heart failure; opiate tapering and withdrawal) identified by the resident who prepared a referenced hand out and led the discussion. At most meetings, the patient was interviewed in the conference room. At other times, groups interviewed the patient at the bedside and/or role play was used.

2.3.4. Work with attending faculty

Thirteen general medicine attending faculty supervise all of the residents' ward activities. They were very supportive of this plan, made aware of potential problems, and participated in identifying some of the key issues, including feeling great time pressures and the fear that integrating nurses would extend rounds.

Encouraging faculty to be role models and to observe and provide feedback when residents did not interact effectively with nurses occurred at regularly scheduled meetings, and included demonstrations by 3 of the authors (HLF, FCD, and RCS) of expected interactions. Faculty were particularly important

because they became our ongoing monitoring system, along with nurse leaders.

2.4. Teachers

Two of the authors (RCS, FCD) taught the nurse leaders, are fellowship-trained in biopsychosocial medicine, have experience teaching in this area, and have worked together effectively in the past. They met 1–2 times weekly to discuss progress over the course of the month when the teaching occurred, and they met biweekly with nursing leaders during and after training of staff nurses. The nurse leaders were experienced clinically but had minimal formal teaching experience.

2.5. Recruitment

2.5.1. Nurses and residents

The ward's Department Manager (DM) and two Assistant Department Managers (ADM), the residency's academic case manager, and the ward's nursing education specialist volunteered to be trained as nursing leaders; only the DM and ADMs taught staff nurses. All 35 of the latter were assigned to training and 31 agreed to participate in its evaluation (89%). Nursing leaders were all Caucasian and female; staff nurses were primarily Caucasian females, with <10% non-Caucasian and <10% male. Residents averaged 32 years (range 27–44), 60% were male, and 88% were non-Caucasian; 32 residents rotated on the ward during the study. We worked hard to avoid pressuring any subjects to participate, evidenced by several who chose not to.

2.5.2. Patients

One-hundred and sixty patients were sought from our emergency department where patients without doctors ('no docs') are assigned in a pre-specified order to four different services (ours, hospitalist group, private group, family medicine residency). The hospitalist and internal medicine residency groups accept the majority of the 'no doc' patients. This represents a convenience sample rather than approximating randomization. Our inclusion criteria were age >17 years, hospital stay >1 day on the medical

Table 4
Formal activities to enhance the process of care.

(1) Nurses attend morning reports when their patients are presented.
(2) Senior residents meet briefly with the charge nurse and case manager at the outset of each day to identify and discuss any problems.
(3) The resident team and nurses conduct joint chart reviews of patients before rounds; e.g., IV access, Foley catheter need, telemetry need, activity or functional level, skin care problems, medication questions, psychosocial concerns, discharge planning. Residents provide updates on diagnoses, the immediate diagnostic and therapeutic plan, and goals to be met prior to discharge.
(4) Nurses join medical team during ward rounds for their patients, present their ideas and concerns, and participate with the team at the bedside
(5) On-call junior residents conduct chart rounds with night shift nurses in late evening.
(6) Resident attends length of stay conference twice weekly.
(7) Nurses join family conferences, near-miss or root-cause conferences, and express their ideas and concerns.
(8) Give awards for outstanding nursing staff, selected by residents, and for outstanding resident staff, selected by nurses, and present them at residents' graduation.

ward, and ability to communicate in English. Exclusions were psychosis, suicidality, organic mental syndromes, and severe acute medical diseases that precluded participation.

2.6. Measurements

2.6.1. Nurses and residents

To evaluate learning by nurses, we developed a 20-item knowledge questionnaire with a mix of true/false and multiple choice questions (available from authors) and a 30-item self-efficacy questionnaire (Appendix A). Both directly evaluate learning of the basic 5-step patient-centered interview nurses had been taught. In addition, nurses and residents completed an 18-item Team Performance Survey ([35] and personal communication, Paul Haidet). The instruments were administered to nurses before, immediately after, and 6 months after training. The Team Performance Survey was administered to residents at baseline and 6 months after initiation of the project.

2.6.2. Patients

At the time of discharge, patients completed a reliable, validated questionnaire we developed previously to directly evaluate the success of providers in establishing a provider–patient relationship (PPR) using the 5-step patient-centered interviewing method, a 25-item satisfaction with the PPR questionnaire (Appendix B) [18,36]. In addition, at admission, patients completed a scale rating their pain on a 1–10 basis, the 9-item Patient Health Questionnaire (PHQ-9) (for depression) [37], and the mini-mental status evaluation (MMSE) [38]. In those with PHQ-9 scores >4, we evaluated the hospital record for evidence of using antidepressant medications and/or offering mental health consultation. The pain scale and MMSE were obtained again at discharge and we identified score changes during the hospital stay. In addition, we determined length of stay and obtained standard demographic data.

2.7. Statistical evaluation, power, and design

2.7.1. Nurses and residents

Using the 6-month data point for hypothesis-testing, we used a retrospective pre-post design to assess staff nurses' learning (PCC knowledge and self-efficacy) using the Student's t-test. Subjects with incomplete data were excluded from the analysis, and a p-value < 0.05 was considered significant. Differences between performance on the Team Performance Survey for residents and nurses at baseline, after training (nurses only) and 6 months after training were analyzed using single factor analysis of variance (ANOVA) (for nurses) and Student's t-test (for resident physicians).

2.7.2. Patients

Differences between treatment patients and those on other units (controls) were assessed via t-tests for continuous variables (patient satisfaction, pain level, MMSE, LOS) and by Fisher's exact test for categorical variables (mental health treatment); the means and standard deviations for continuous variables and the percentages for categorical variables are provided in the tables. In both cases, p-value < 0.05 defined statistical significance. For the major patient outcome variable, satisfaction with the PPR, we determined beforehand that 160 subjects would detect a moderate effect size of 0.4 (alpha 0.05, one sided; beta 0.20).

3. Results

3.1. Nurses and residents

Three of 31 staff nurse participants did not sign consent. The remaining 28 staff nurses completed the knowledge and self-

Table 5
Patient characteristics.

	Treatment	Control	Significance
Female	50.0%	43.2%	ns
Caucasian	70.9%	82.7%	ns
Married	25.6%	46.9%	$p < 0.01$
College[a]	53.4%	48.1%	ns
Retired	21.7%	50.6%	$p < 0.01$
Unemployed	39.7%	16.9%	$p < 0.01$
Not insured	22.6%	7.8%	$p < 0.02$

[a] At least some college education..

efficacy tests, and 22 completed the Team Performance Survey. Among 32 residents, 20 were included with complete data, while 10 had incomplete data and 2 did not sign consent.

Nurses showed significant improvement in knowledge ($p = 0.02$) and self-efficacy ($p = 0.001$) from baseline to 6 months post-training. There was no significant change for residents ($p = 0.15$) or nurses ($p = 0.28$) on the Team Performance Survey.

3.2. Patients

3.2.1. Recruitment and completion

A total of 253 patients were screened for participation in the study; 51 failed to meet inclusion criteria. Of the remaining 202 patients, 12 refused (recruitment rate = 94.6%). Of the remaining 190 patients, 23 were later excluded because of missing discharge data, leaving 86 patients in the treatment and 81 in the control group who completed the study.

3.2.2. Baseline comparison between groups

As can be seen in Table 5, statistical differences between intervention and control groups at baseline were prominent with the treatment group more likely to be unmarried, not retired, unemployed and uninsured.

3.2.3. Patient outcomes

Table 5 also describes patients' characteristics. As can be seen in Table 6, there were no statistically significant differences for the key outcome variables between the treatment and control groups.

3.3. Formative evaluation

Systematic, ongoing evaluation of the acceptability of the training and evaluation processes indicated much support from the administration, nursing leadership, and the residency program. These assessments were made at regularly scheduled meetings. For the residents and staff nurses, attendings and nursing leaders, respectively, we obtained the information using open-ended inquiry to learn how it was working. Both residents and nurses evinced significant skepticism at the outset but progressively came to embrace it, seeming to improve as they

Table 6
Patient outcomes.

	Treatment	Control	Significance
Satisfaction	4.06 (1.03)	4.17 (0.80)	ns
Length of stay (days)	3.49 (2.58)	3.46 (3.19)	ns
Change in pain score	1.59 (3.45)	1.00 (3.47)	ns
Psychological Tx	25.0%	41.9%	ns

Standard deviations are in parentheses.
Percentages receiving psychological treatment were for patients with PHQ-9 > 4.

got to know one another better. Some reservations persist, but the overall change has been striking. Attesting to its acceptability, all involved wanted to continue the program when funding stopped.

4. Discussion

We have conceptualized, described, and implemented a teaching effort unique in this country: training ward residents and nurses in PCC and, in turn, training them to work together as a team using similar skills with one another. In addition to positive feedback from all involved, we demonstrated that floor nurses taught by trained nursing leaders learned the basic patient-centered model well with just 8 h of training. However, we were unable to demonstrate an objective impact on either patient outcomes, particularly satisfaction with the PPR, or on perception of teamwork by nurses and residents.

A recent study that also localized physicians to one unit found improved communication and familiarity but no meaningful shared understanding of problems between physicians and nurses [39]. Our study goes a step further by showing that also training residents and the nurses in PCC individually and as teams did not have an effect upon perceived team function or patient outcomes.

However, this study has many important limitations. Non-equivalence of intervention and control groups led the former to have a significantly greater number of unemployed, unmarried, uninsured, and unretired subjects, a group one would expect to have more severe disease and greater psychosocial issues. Although this was unavoidable and incorporated into our analysis, future studies can be improved with randomly assigned study groups. Although we carefully monitored residents' and nurses' interactions with patients, we did not document their fidelity to PCC practices so that the possibility exists that they did not effectively deploy the intervention. This is a potential explanation for the lack of findings on both the Team Performance Survey and on the patient satisfaction with the provider–patient relationship questionnaire. Similarly, because our ward nurse leaders had no formal teaching experiences, it is possible this contributed to insufficient learning and impaired subsequent implementation of the intervention. But we believe the strong evidence of learning by staff nurses we demonstrated makes this unlikely. Other limitations include our failure to train attending physicians, failure to train nurses and residents together, and a potential decay in PCC skills of residents trained earlier in their residency.

There are many other possible reasons for failing to demonstrate improved satisfaction with the PPR. These patients had very short hospital stays (many discharged within two days) and typically were very ill, both of which weigh against improving satisfaction [40]. Moreover, some also had challenging psychosocial issues that may have made them dissatisfied with the medical system in general (e.g., refractory somatization) and others had conditions wherein our medical treatment may have created dissatisfaction; e.g., opiate curtailment. Additionally, these patients were studied immediately upon completion of nurses' training but before full team training was underway. All of these features suggest potential limitations that future studies will need to consider.

Our experiences over the last year inform our failure to influence a perception of teamwork between residents and nurses. We observed that teamwork will not begin just by providing the proper milieu (consolidated setting in which both nurses and residents have received patient-centered training and are encouraged to work as a team). Rather, improved teamwork required daily facilitation by ward leaders and faculty. Such longer-term concerted efforts are necessary to break prior, deeply ingrained patterns that have cemented nurses and doctors into separate, parallel work tracks. Progress has been slow, depending on not only the behaviors of the immediate resident and nurse, but also on those of their supervisors. We learned from many discussions that there were negative prior experiences, with faculty as well as residents, in nurse–doctor interactions that must be overcome, often taking multiple corrective interactions over months to achieve a modicum of comfort. Further, nurse and resident administrative structures posed problems; e.g., nurses have other duties that can preclude joining attending rounds; resident morning report interferes with attending nurse sign-off reports. The exciting thing we have observed, though, is that change is possible with ongoing facilitation: interactions have become progressively more frequent and meaningful as the residents and nurses simply get to know – and trust – one another. The caveat is that teaching address affective and relational issues, as we have here [14,15].

Further, we should not expect a ward team to form the way it may where fewer providers are involved and problems are less diverse and more acute; e.g., intensive care unit team, trauma team. Rather, we envision a long-term process wherein residents and nurses become integrated as care teams by ongoing attention to team building. The inherently high turnover rate of residents and nurses on one ward bespeaks the key role of medical and nursing faculty in providing not only ongoing training but also in bridging progress from one rotation to the next and one year to the next.

5. Conclusion

At this time, there is far more research support for training residents and nurses in PCC on an individual basis. We view this as "necessary but not sufficient" [41]. To most improve patient care and safety, we must expand our pedagogical efforts into a still murky but important area – training in relationship-centered team principles. Much more research is required to guide this effort. We propose that longer-term studies of the type reported here will show positive results if training focuses on affective and relational issues. We can take comfort in the fact that others in different, but equally complex situations have been successful using an ongoing emphasis on relationship-centered care over time [42].

6. Practice implications

We invite others to join in this new direction and provide their experiences with our or other templates so that, together, we can jointly develop the most effective teaching for team formation on a medical ward.

Appendix A. Self-efficacy questionnaire

Name: _____ Date: _____

Self-efficacy questionnaire

A. The first set of questions below is related to your attitudes about patient centered interviewing. For each statement below, circle the number that best represents your degree of *confidence* with every patient encounter.

	I am confident that I can:	Strongly disagree	Disagree	Unsure	Agree	Strongly agree
1.	Set the stage for the interview	1	2	3	4	5
2.	Welcome the patient	1	2	3	4	5
3.	Use the patient's name	1	2	3	4	5
4.	Introduce myself by name and identify my specific role	1	2	3	4	5
5.	Ensure the patient's readiness and privacy	1	2	3	4	5
6.	Remove barriers to communication	1	2	3	4	5
7.	Ensure comfort and put the patient at ease	1	2	3	4	5
8.	Set the agenda for the interview	1	2	3	4	5
9.	Indicate the time available for the interview	1	2	3	4	5
10.	Indicate my own needs for the interview	1	2	3	4	5
11.	Obtain a list of all issues the patient wants to discuss		2	3	4	5
12.	Summarize and finalize the agenda	1	2	3	4	5
13.	Open the history of present illness with an open-ended question	1	2	3	4	5
14.	Use non-focusing open-ended skills	1	2	3	4	5
15.	Obtain additional data from nonverbal sources	1	2	3	4	5
16.	Obtain a description of the patient's physical symptoms	1	2	3	4	5
17.	Use focusing open-ended skills to develop a general personal context of the physical symptoms	1	2	3	4	5
18.	Use emotion-seeking skills to develop an emotional focus	1	2	3	4	5
19.	Respond to emotion by naming it	1	2	3	4	5
20.	Respond to emotion by expressing understanding of it	1	2	3	4	5
21.	Respond to emotion by stating respect for it	1	2	3	4	5
22.	Respond to emotion by indicating support of the patient	1	2	3	4	5
23.	Expand the patient's story and responses to develop new chapters of the story	1	2	3	4	5
24.	Transition to the doctor-centered process	1	2	3	4	5
25.	Provide the patient with a brief summary of the interview	1	2	3	4	5
26.	Check the accuracy of the summary	1	2	3	4	5
27.	Indicate to the patient that both the content and style of the inquiry will change if the patient is ready	1	2	3	4	5
28.	Remain patient-centered using open-ended questions for several minutes without interspersing doctor-centered questions	1	2	3	4	5
29.	Elicit the psychological, social, and emotional aspects of the patient's story	1	2	3	4	5
30.	Recognize when my own negative emotional reactions to the patient occur	1	2	3	4	5

Note: the above is the questionnaire administered immediate post-training and 6 months post-training; for the retrospective pre-test administered immediately post-training, the questionnaire instructions read, "Before this training, I was confident that I could:"

Appendix B. Patient satisfaction questionnaire

Satisfaction with the provider–patient relationship (SQ-1) – nurse/doctor.

Please indicate how much you agree or disagree with each statement regarding your visit with this nurse/doctor	Strongly disagree	Somewhat disagree	Undecided	Somewhat agree	Strongly agree
1. I told my nurse/doctor everything that was on my mind	1	2	3	4	5
2. I was able to tell my nurse/doctor what was bothering me	1	2	3	4	5
3. I felt understood by my nurse/doctor	1	2	3	4	5
4. My nurse/doctor did not make me feel rushed	1	2	3	4	5
5. I had confidence in my nurse/doctor's abilities	1	2	3	4	5
6. My nurse/doctor made me feel comfortable enough to tell everything that was bothering me	1	2	3	4	5
7. My nurse/doctor made it easy to understand what, if anything, was wrong with me	1	2	3	4	5
8. My nurse/doctor gave me undivided attention	1	2	3	4	5
9. I got to ask my nurse/doctor all the questions I wanted	1	2	3	4	5
10. My nurse/doctor spent the right amount of time with me	1	2	3	4	5
11. I was pleased with my visits with my nurse/doctor	1	2	3	4	5
12. My nurse/doctor always seemed to know what he/she was doing	1	2	3	4	5
13. I have a good deal of confidence in my nurse/doctor	1	2	3	4	5
14. My nurse/doctor really cared about me as a person	1	2	3	4	5
15. My nurse/doctor never acted like I did not have any feelings	1	2	3	4	5
16. My nurse/doctor treated me with a great deal of respect	1	2	3	4	5
17. My nurse/doctor never "talked down" to me	1	2	3	4	5
18. My nurse/doctor was kind and considerate of my feelings	1	2	3	4	5
19. My nurse/doctor tried to make me feel relaxed	1	2	3	4	5
20. My nurse/doctor relieved my worries about medical conditions	1	2	3	4	5
21. My nurse/doctor made it easy for me to ask questions	1	2	3	4	5
22. My nurse/doctor listened to me closely	1	2	3	4	5
23. I trust my nurse/doctor	1	2	3	4	5
24. My nurse/doctor spent enough time with me	1	2	3	4	5
25. Overall, I am satisfied with my nurse/doctor	1	2	3	4	5

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