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REVIEWS

Behaviorally Defined Patient-Centered Communication—A Narrative Review of the Literature

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BACKGROUND: Touted by some as reflecting a better medical model and cited by the influential IOM report in 2000 as one of the six domains of quality care, patient-centered medicine has yet to fully establish its scientific attributes or to become mainstream. One proposed reason is failure to behaviorally define what the term 'patient-centered' actually means.

OBJECTIVES: (1) To identify patient-centered articles among all reported randomized controlled trials (RCT); (2) to identify those with specific behaviorally defined interventions; (3) to identify commonalities among the behavioral definitions; and (4) to evaluate the relationship of the well-defined RCTs to patient outcomes.

DATA SOURCES: Medline from April 2010 to 1975.

ELIGIBILITY CRITERIA, PARTICIPANTS, AND INTERVENTIONS: RCTs having any specific, behaviorally defined patient-centered skill(s) in an intervention with some patient outcome involving real adult patients and providers in real clinical situations.

APPRAISAL AND SYNTHESIS METHODS: Critical appraisal via narrative review.

RESULTS: The prevalence of any mention of patient-centeredness among 327,219 RCTs was 0.50% (1,475 studies), from which we identified only 13 studies (0.90%) where there were behaviorally-defined patient-centered skills in an intervention. Although there were too few studies to make clinical recommendations, we identified common features of the behavioral definitions used: all went well beyond identifying individual skills. Rather, skills were grouped, prioritized, and sequenced by virtually all, often describing a stepwise patient-centered approach to, variously, gather data, address emotions, or inform and motivate.

LIMITATIONS: The inherent subjectivity of our method for identifying behaviorally-defined studies could under- or over-represent truly replicable such studies considerably. Also, studies were few and very heterogeneous with interventions of widely differing intensity and foci.

CONCLUSIONS AND IMPLICATIONS: RCTs identified as patient-centered were rare, and <1% of these were behaviorally defined and, therefore, possibly replicable. There were many common behavioral definitions in the studies reported, and these can guide us in identifying agreed-upon patient-centered interventions, the immediate next-step in advancing the field.

KEY WORDS: patient-centered medicine; behavioral definitions; psychosocial context.
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INTRODUCTION

The Institute of Medicine (IOM) laments modern medicine's isolated focus on disease, ignoring the psychological and social aspects of patients' illnesses. The IOM averred that this "quality chasm" be closed.[1–3] The patient-centered communication (PCC) needed to achieve this closure occurs when the provider facilitates the patient's perspective and the psychosocial context of their illness and also shares power and responsibility.[4]

Many have blamed the "medical establishment" for creating the chasm by not including more psychosocial material in our student and resident curricula. Puzzling, though, there is considerable evidence that the establishment supports patient-centeredness; e.g., most schools teach interviewing and have patient-centered principles as part of their mission statement, often referencing the biopsychosocial model; residency governing boards and organizations also espouse these principles; and testing bodies evaluate our success in teaching patient-centered medicine. An alternative consideration, we propose, is that establishment educators may not know what to do next and still be consistent with their guiding principle of evidence-based medicine and medical education.

Perhaps sharing some responsibility for the chasm, the field of patient-centered and psychosocial medicine itself has been encouraged by those inside and outside the discipline to develop greater scientific rigor.[5–10] In fairness, this new field has evolved rapidly, and its successes suggest an upward trajectory of progress. The biopsychosocial model (BPS) was articulated by Engel only in the late 1970s,[11,12] followed shortly by general descriptions of patient-centered approaches by McWhinney,[13] followed in turn by wide-scale promulgation of patient-centered practices by what are now called the American Academy on Communication in Healthcare,[14] the European Association for

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Communication in Healthcare,[15] and the Institute for Healthcare Communication[16]—as well as many other groups including several primary care organizations. Considerable research success also has followed in areas such as a systems approach to medicine,[11,12,17] identifying the functions of the interview,[18–20] pinpointing the shortcomings of isolated disease-oriented approaches,[21] demonstrating the key components of the provider-patient interaction,[22] and beginning to show some impact on health outcomes.[22,23] Many experts in the field, though, remain restive and are pushing for further outcomes-based research.[4,6,9]

The above successes have exposed the next problem to be solved and, we propose, the new direction for the field. Specific definitions of patient-centered medicine and explicit directions for practice, many warn, are lacking,[4,5,7,8,24–28] impeding both research and teaching[10,29,30] and resulting in variable and sometimes contradictory recommendations for educating learners.[5,7,8,26] There currently is no accepted model/method of PCC for teaching or research on PCC.[31–34] We are warned that we cannot simply say we teach "patient-centered skills."[27] Our students need to know exactly what to say, with behaviorally defined PCC skills broken down into teachable components.[7] This approach does not create the automatons a few fear but, research shows, it produces flexible, skilled students and providers.[7,35,36] Lack of definition of PCC fosters the field's reliance on anecdotal reports, opinion pieces, position articles, consensus conferences, and exploratory/descriptive work,[6,32,37] which, in turn, encourage educators' and students' perceptions of communication skills training as "soft" and of limited value.[38,39]

Most scholars agree that, while data support some utility of PCC,[5,7,9,10,23,40,41] the quality of studies does not allow firm conclusions relating PCC to patient outcomes.[5–10] Indeed, the higher the quality of the study, the less convincing the data tend to be.[42] While rigorous noninterventional studies of provider-patient interactions have been conducted and can inform the more stringent behavioral definitions of PCC we are urged to make,[31–34] only the RCT-based patient-centered behaviors we seek to synthesize here as our primary objective can provide the evidence-based definition the establishment seeks.

Responding to requests for a behavioral definition of PCC in a replicable model/method[35,36,43–45] and for evidence-based models,[32] we identified a basic PCC method to operationalize the BPS model via literature review, consulting with others, and our own experiences.[35,36] Our work in defining and studying this model, included in this review, piqued our curiosity about other replicable, behaviorally defined models and led to this search for such PCC methods; our model, though, was not used to define PCC criteria for entry into study.

METHODS

Overview

Our analysis is best classified as a narrative review with its qualitative emphasis and acknowledged potential for bias.[46] The basic theory of change model we sought to inform can be summarized as: a patient-centered approach identifies patients' biological (disease), psychological (personal), and social (environmental) dimensions, thus operationalizing Engel's biopsychosocial model.[11,12] Compared with a biomedically focused, disease-oriented model, the patient-centered approach integrates relevant biological and psychosocial data about the patient, better establishing a more broadly focused provider-patient relationship and communication. In turn, this leads to improved patient satisfaction, adherence, understanding, and, in some cases, health outcomes.[44]

Our goals were to: (1) conduct a literature review of article titles or abstracts with any mention of RCT methodology; (2) identify from the title or abstract of these RCTs any studies using the terms 'doctor-patient relationship' and/or 'patient-centered.' The latter did not become a MESH heading until 1995, but doctor-patient relationship has been used since 1965, so we used this as a proxy to capture patient-centeredness from 1975 to 1995; (3) conduct a full review of abstracts of the identified studies to further evaluate their qualifications as patient- centered; (4) review full articles of abstracts we classified as patient-centered to identify those with any behaviorally defined skill(s) in the interventions; (5) analyze the identified articles for the details of their replicable, behaviorally defined practices to inform our search for common patterns or definitions; and (6) evaluate a possible relationship to patient outcomes.

Search Strategy

The MEDLINE database was searched during the second week of April 2010 back to 1975 (when abstracts first appeared) using the PubMed interface. The searches were conducted by one of the authors (JC) who is a professional librarian and is skilled and experienced in professional searches. When performing the search, the official medical subject heading (MeSH) term "professional-patient-relations" was allowed to explode, a MEDLINE MeSH feature that automatically included all "patient-relations" terms with the following specific professionals: physicians, nurses, dentists, and researchers. These same terms were also searched as title phrases and included with the MeSH batch. These combined results were pooled together (using "OR") with the results of a search using the MeSH term "patient-centered-care" and the text words "patient centered" and the alternative spelling "patient centred." The combined results were limited to "randomized controlled trials" by using the publication type limit option as well as searching for the limit concept in the title field using the full phrase or the abbreviation "rct." The search was also limited to those articles published in English. In addition, we searched our own files, reviewed published reviews with related goals, and consulted with experts for any potential additional articles. We also searched all Cochrane Systematic Reviews available for additional articles we may have missed. Because of cost in this unfunded study, we did not search EMBASE.

Selection Criteria

We wanted to find those studies that most objectively described the patient-centered process in behavioral terms, so we restricted our review to RCTs, where we expected the most carefully defined interventions. We also restricted our evaluation to patient-centered practices by the patient's primary health care provider (major caretaker, usually but not always the primary care provider) because we believed the closest and most enduring relationship would provide the best evidence.

(1) Inclusion criteria

- (a) RCT with randomization of patients and/or providers where an intervention had some patient-centered or provider-patient relationship component addressed by a primary provider (major caretaker) to a patient in person and where some patient outcome was evaluated, whether related to patient-centeredness or not. Teaching interventions designed to improve patient-centered care were included only if some patient outcome was evaluated, whether or not training outcomes were recorded.
- (b) The intervention was sufficiently described to be replicable: the skill(s) used in the patient-centered intervention was itself described in explicit behavioral terms.
- (c) Published in English before April 2010.

(2) Exclusions:

- (a) Study design: RCT studies with teaching outcomes only, pilot RCT studies of any type, studies from prior RCT databases, reviews, meta-analyses, and other mentions of a RCT that did not meet inclusion criteria.
- (b) Provider: non-primary caretaker providers, although a major caretaker such as an acupuncturist or nurse was not an exclusion; multiple providers or groups of providers; psychotherapy.
- (c) Patients: simulated patients; patients younger than 18 years.
- (d) Patient-centered interventions that were: restricted to nonverbal behaviors or general descriptions of an 'alliance,' Internet-based, restricted to handouts/decision aids/written material/electronic material, not involving a real interaction (e.g., observed taped interaction of another), telephone-based, directive (e.g., to a specific technique such as reattribution), only general efforts to help patient, or manualized/guided treatments.

Procedure

(1) The abstracts were divided in approximately equal proportions, and each was reviewed by two of three authors (MG, FCD, RCS) for determination of inclusion or exclusion. Final determinations were made by consensus.

(2) Two of three authors also rated each of the 13 RCTs selected for study. To prevent any conflicts of interest, one of the authors (RCS) did not evaluate studies in which he had participated.

Data Abstraction

Based on the literature[47] and our experience with Cochrane reviews, we outline in Text Box the criteria we used. Data were extracted from these criteria to form the seven categories in the summary table (available online): study reference, year, and location; setting; participants; training and its impact; intervention, its intensity, and controls; methods and their quality; and measures and patient outcomes. The heterogeneity of the studies precluded pooling of data and overall effect size calculations.

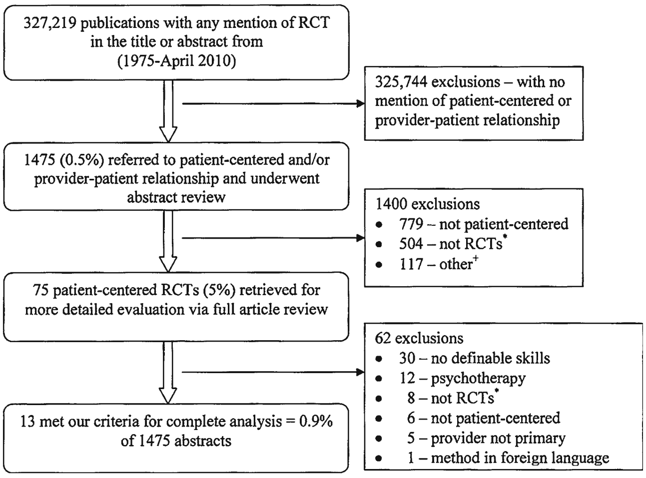
Criteria Used in Data Extraction

1. Location of study
2. Practice type and number of centers
3. Provider type, inclusion/exclusion criteria, numbers of providers, and provider recruitment rate
4. IRB approval
5. Sponsor of study
6. Overall study duration
7. Summary of trial design/methods
8. Randomization type (provider or patient) and method
9. Primary aims of study (education vs. treatment)
10. Number of patients and patient recruitment rate
11. Patient age, gender, culture, education, and employment status
12. Patient diagnoses and inclusion/exclusion criteria
13. Blinding of data gatherers, providers, and patients
14. Training procedure, structure, duration, objectives, and method
15. Training by whom and who was trained
16. Training outcomes (knowledge, attitude, skills, personal awareness) and measures and test characteristics
17. Training summative and formative outcome
18. Patient intervention type (drug, mental, physical, educational, multidimensional)
19. Intervention primary endpoint, hypothesis, intention to treat, and pre-hoc power calculation
20. Patient-centered intervention details in behavioral terms and evaluation of replicability
21. Intensity of patient-centered intervention: number of and duration of visits
22. Patient-centered intervention primary or secondary focus
23. Other interventions (e.g., medications, exercise)
24. Patient outcomes (satisfaction, adherence, health status), effect sizes, percent variance explained, post-hoc analyses
25. Patient-centered contribution to outcomes, mediator/moderator/subgroup analyses
25\. Author recommendation

In constructing the summary table (online), we sought to provide the details to support what we judged to be replicable studies. We paid particular attention to recording the specific PCC behaviors/skills and the details of how they were deployed, including their timing, prioritization, and sequencing as well as any guiding steps and substeps that were used to organize the skills. We also identified how they were used over time. Also, to highlight the potentially most useful studies for informing a relationship of patient-centered practices to health outcomes, we defined the following criteria post-hoc. Studies with any positive outcome were so designated, and the others were called negative studies. We then evaluated positive studies for adequate generalizability, which we defined as at least 30% recruitment rates for providers in cluster randomized studies and at least 50% recruitment rates when patients were the focus of randomization. We evaluated negative studies for sufficient power, and for either a positive training impact or demonstrated fidelity to the intervention. In the absence of these criteria, a negative study could be due to insufficient numbers of subjects or failure to deploy the intervention.

RESULTS

Summarized in Figure 1, we identified 327,219 publications with any mention of RCT in the title or abstract from 1975 to April 2010. Of these, 1,475 (0.5%) referred to patient-centered and/or provider-patient relationship. From review of these abstracts, we identified 75 articles (5%) for full article review and identified 13 (0.9%) meeting our criteria for analysis in this review. To maximize our results, we also searched all 33 Cochrane Systematic Reviews, 25 of which did not address patient-centered material by review of their titles and abstracts; of the remaining 8 reviews, we found no articles not already identified. We did not exclude studies rated as negative.



*review paper, letter to editor, passing mention of RCT, pilot study with RCT design, journal title, methods for RCTs, study of subset of RCT, editorial, secondary analysis, report only of methodology, reanalyzed data

+psychotherapy/counseling, no patient outcomes, nonverbal only, not primary provider, patients were simulated, study via videotaping only, telemedicine, decision aids

Figure 1. Selection of publications for review.

The summary table (online) summarizes the key features of the study, which we now synthesize and integrate. Nearly all studies recorded some funding, and they occurred in health centers and HMOs, private settings, and university settings. Most studies had from 20–60 providers; recruitment rates were presented in the majority of studies and varied from 7% to 100%, most falling at the extremes of this range. Providers usually were physicians, mostly primary care, but with some physician assistants, nurse practitioners, and others. Subjects were characteristically general medical patients, although many had psychosocial problems; e.g., pain management, alcohol and tobacco cessation, and medically unexplained symptoms. Recruitment rates were generally >50%. All but one study included training, the majority of which took 10 or fewer hours, typically over one to two workshop sessions. Outcomes of training were measured in less than one-half of the studies, and most showed a positive impact of training. Most interventions involved only one visit and most controls were usual care.

There was a very wide range of behaviorally defined interventions, but common features were noted. Toward generally expressed goals of achieving improved communication and provider-patient relationships, trust, and positive regard, some well-defined behavioral features were using open-ended skills, eliciting and responding to emotion, expressing support and willingness to help, exploring patient understanding and explanation of their problem, asking what the patient would like to have happen, motivating and encouraging a positive approach, giving specifics of recommended behavioral change, linking treatment to the patient's needs and level of understanding, advising but acknowledging the patient's choice, and accepting the patient's choice.

All studies used these individual skills and also aggregated them in a multidimensional approach, grouping related skills together for a given purpose of the intervention (e.g., tobacco cessation); some further specified sequences of skills. In turn, to better achieve the aims of the intervention, many identified multiple such skill sets, more complex interventions identifying them as steps where they then indicated how to sequence and prioritize the steps at one visit and over multiple visits. Such steps were not skills per se and, instead, identified general goals within an overall patient-centered intervention. For example, the first step might focus on an individual patient-centered goal of a multidimensional intervention (e.g., the patient's agenda), while another step focused on another goal (e.g., the patient's emotion), and another focused on a third goal (e.g., stopping alcohol use). The more complex interventions outlined the amount of time for each step and some identified high or low priority steps. Parts or all of this process of using a step-wise model to learn a complex skill were present in many of the studies.

In assessing the methods and quality of the studies, most involved randomization of providers/practices (rather than patients), nearly half with details of the randomization method provided, and most recorded blinding of outcome assessors; blinding of others was rarely mentioned. Unit of analysis error usually was not reported, intention to treat evaluations occurred in about half, and power calculations for patient outcomes were provided in the majority of studies.

With fewer studies than expected, evaluation of a relationship between patient-centeredness and outcomes was difficult. There were six studies with any positive patient outcome and seven were negative. In applying our post-hoc criteria, we found that only four positive studies and one negative study were sufficiently rigorous to inform a relationship of patient-centered practices to health outcomes. In the eight rejected studies, nonrepresentative study samples, stemming from low recruitment rates, were problematic in positive studies. Additionally, negative studies were plagued by low power or lack of evidence that the intervention could have been effectively deployed. In the last column of of the summary table (online), we note our summary of the post-hoc outcome evaluations. The patient outcomes studied varied considerably: pain reduction; evaluation of the provider's patient-centered characteristics; satisfaction, adherence, and confidence in care; alcohol and cigarette reduction; antibiotic use; reduction in mental health problems.

DISCUSSION AND CONCLUSION

Trying to understand why patient-centeredness might play such a small role in outcomes-based research, we focused on the lack of explicit behavioral definitions of what is meant by patient-centeredness.[5,7,8,26] Among the small fraction of studies mentioning the doctor-patient relationship or being patient-centered, only 13 (0.9%) could be classified as behaviorally defined. This makes it difficult to design replicable patient-centered research interventions—or replicable teaching methods—and may account for the dearth of RCTs incorporating patient-centered practices.

We believe the significant story here is identifying a common process among the replicable studies we evaluated, one that can perhaps guide the field in its next steps. All defined specific behavioral skills to be deployed with patients; e.g., use open-ended inquiry and inquire about emotions. But, to a greater or lesser extent, all went well beyond describing individual skills. Skills were grouped, prioritized, and sequenced by virtually all, and many provided stepwise guidance. For the more complex interventions, specific steps and their subset skills were identified, and the steps were similarly sequenced and prioritized. While not prescriptive, steps provided signposts for bases to be touched along the way of a complex PCC interaction that a new learner or researcher would want to incorporate. Sometimes noted was an indication of when to transition to the more disease-based part of the interaction—and some provided longitudinal guidelines for use of PCC over time.

In stepwise approaches, an analogy is learning the physical examination where, for example, one learns the 'vital signs' step (with subset skills of measuring blood pressure, pulse, respiration, and weight); then proceeds, starting at the top, to the 'eyes' step (with subset skills of pupillary reflexes, vision, conjunctiva, funduscopic, etc.); then to the 'ears' step (and its multiple subset skills); and so on through the rest of the exam. While PCC skills are far more complex than physical examination skills, the comparison can help understand what our studies were doing.

Our studies meet the recommendations of many educators that behaviorally defined models be employed to teach any complex skill or set of skills.[24,34,41,48–50] We highlight also that the PCC interventions in this study concerned the fundamental functions of the interview,[18–20] which were deployed as two models: Model 1—data-gathering and emotion-handling and/or Model 2—informing and motivating patients.

We acknowledge serious limitations in this review: the potential for subjectivity in the inclusion of studies we believed to be behaviorally defined and replicable is a limitation that could lead to under- or over-identification of replicable interventions. We invite others to submit to us or to the Journal examples they believe are sufficiently behaviorally defined to be replicable—and to object to those we have included if they are not sufficiently defined behaviorally. Developing such a bank of examples could provide further guidance for future research and teaching. Some conclusions also are limited by the wide diversity and heterogeneity of studies in both content and intensity of their interventions. We also recognize that the small number of studies raises the possibility of publication bias. Further, we considered only RCTs because we reasoned that they would have the most stringently defined interventions, but that assumption may be incorrect.[51] Finally, we read only a fraction of the quarter of a million articles considered and could well have missed patient-centered material that was not identified by our screening procedure. We also did not screen for possibly related terms like relationship-centered care or collaborative care.

The clinical implications of this review are minimal because of the paucity of clinical trial data. Clinicians should still continue being patient-centered based upon strong humanistic and moral reasons, strong theoretical backing, and the field's impressive indirect evidence that being patient-centered is effective.

The pedagogic and research implications, on the other hand, are profound. Our findings show that we have yet to develop large-scale empirical studies based on agreed-upon definitions that would answer some of the most fundamental questions about patient-centeredness and its impact on processes and outcomes of care and on teaching.

The studies we reviewed can provide guidance: they represent examples of the well-described behaviorally defined skills and sets of skills that, many conclude, must be further developed as the critical next-step in advancing the field. We recommend a specific next-step: the field agree upon two basic patient-centered models: Model 1 for data-gathering and emotion-handling; Model 2 for informing and motivating patients. These represent the basic functions of the interview.[18–20] Model 1 will be involved as part of virtually all interactions and all treatment interventions. Model 2 is more specific to situations where informing and motivating the patient are additionally required and where sharing decisions is key. The components of the Model 1 always are integrated with Model 2. Examples of generalizable, evidence-based models from our study exist: Model 1[43] and Model 2.[43,52–54] The field is urged to adopt these, as a starting point, or to produce other evidence-based alternatives.

By successfully addressing this logical next step, we can extend our already remarkable progress and more fully meet the field's humanistic, moral, and theoretical potential. This also will provide compelling data for evidence-based educators and scholars of the "establishment" by giving them the information needed to further integrate patient-centeredness into modern medicine—taking a long step towards closing the quality chasm.

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