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ORIGINAL RESEARCH & CONTRIBUTIONS

Relationship between Participation in Patient- and Family-Centered Care Training and Communication Adaptability among Medical Students: Changing Hearts, Changing Minds

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ABSTRACT

Background: Patient- and family-centered care (PFCC) training is an important component of many medical school curricula in the US.

Purpose: To determine if an existing quantitative measure of communication adaptability can be used to determine skills acquired by medical students after PFCC training.

Methods: A census was conducted of 43 third-year medical students at the University of New Mexico School of Medicine, Albuquerque, NM. Students participated in the Families as Faculty program of Parents Reaching Out during their pediatric rotation. A pretest and posttest of Duran's 1983 Communicative Adaptability Scale was performed.

Results: A one-way analysis of variance was conducted and revealed that there was statistical significance for the factor called appropriate disclosure ($p = 0.04$). When mean plot was conducted, there was a positive correlation between pretest and posttests in social experience, wit, and social confirmation. There was a negative correlation for articulation and social composure, which was not significant.

Conclusion: The Communicative Adaptability Scale was an effective way to evaluate communication skills that students acquire from PFCC training. An increase in appropriate disclosure is an important gain because it means students have become more sensitive to the level of intimacy that the other person is seeking and the student is willing to offer more information. Information sharing is one of the core concepts of PFCC. Finally, the negative correlation for articulation and social composure indicate that Families as Faculty may increase anxiety for medical students, so this is an area of the education that may need to be revisited.

INTRODUCTION

This study seeks to determine if a standardized measurement of communicative adaptability can be used to evaluate skills taught to medical students after patient- and family-centered care (PFCC) training. PFCC care ensures the health and well-being of children and their families through a respectful professional-family partnership. It honors the strengths, cultures, traditions, and expertise that everyone brings to this relationship. According to the US Maternal and Child Health Bureau Division of Services for Children with Special Health Needs, family-centered care is the standard of practice that results in high-quality services.[1]

The University of New Mexico in Albuquerque, NM, uses the services of these two programs: Families as Faculty (FAF), which is a division of Parents Reaching Out, a statewide nonprofit interested in advocacy for individuals with disabilities, and the New Mexico Leadership Education in Neurodevelopmental and Related Disabilities, located at the university's Center for Development and Disability. Families that have a child with a disability welcome a medical student from the University of New Mexico into their home for an informal visit, in which the family members talk openly about their collective experience with various practitioners and medical systems. The goal is that medical students gain insight into how families function and how they feel about health care, which leads to the acquisition of communication skills that deliver greater expressions of respect and dignity, information sharing, participation, and collaboration.[2]

Despite several attempts by other universities to study PFCC training, there has been little success in articulating what students are learning or how they are being professionally transformed. Because PFCC training is delivered through the mode of verbal and nonverbal communication from health care workers, PFCC education would influence how students communicate. This study seeks to determine if an existing construct, the Communicative Adaptability Scale (CAS), is an effective tool to evaluate whether students acquire the ability to communicate more effectively because of PFCC training.

LITERATURE REVIEW

The purpose of this literature review is to build the theoretical groundwork for evaluating what effect PFCC education has on the communication adaptability that medical students use with patients when they become physicians. This study is an effort to corroborate the expectations of these programs or to produce recommended modifications to the programs or future studies. As knowledge of the concepts of PFCC grow in popularity among hospital administrators, there continues to be very little study about the effectiveness of educational programs on this topic. There has been limited success in capturing any data about PFCC education and the impact it

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has on professional-family communication. Cegala and Broz[3] posit that of the physician training research that has been conducted, "Less than 30% of the studies … had a design adequate for assessing the effects of training interventions … ." If PFCC training is not working in the manner that is expected, it may be necessary to modify education programs or to abandon initiatives altogether.

In exploring this question, it is important to look at a study that has examined the population of college students for relationships between communication adaptability and intercultural apprehension. Duran[4] defines communication adaptability as "the ability to perceive socio-interpersonal relationships and adapt one's interaction goals and behaviors accordingly." Intercultural apprehension is defined as follows: "One's level of fear or anxiety associated with interacting with people of different cultures and ethnic and/or racial groups."[5]

Long and Anarbaeva[6] used the CAS, which has a high interitem reliability ($\alpha = 0.948$), and the Personal Report of Intercultural Communication Apprehension, which also has a high interitem reliability (Cronbach $\alpha = 0.941$).[7] The questionnaire was completed by 124 graduate and undergraduate students between the ages of 18 and 45 years. A strong relationship between the 2 variables was revealed. Long and Anarbaeva concluded: "As communicative adaptability increased, intercultural communication apprehension decreased." This study showed that a clear relationship exists between communication adaptability and intercultural apprehension.

Next, intercultural communication must be linked to physician-patient relationships. Manderson and Allotey[8] defined intercultural or cross-cultural communication as the "conveying of information and the response to the information in an interaction between members from different cultures." They proposed that "In the clinical interaction, this occurs between individuals from a culture of health professionals and individuals who fall into the category of 'patient' or 'sick client.'" Manderson and Allotey suggested that the greatest deficit of the prevailing participatory decision-making model[8,9] is that it lacks an education component for the physician. The participatory decision-making model supposes that the clinician might employ variations of education for the patient but does not factor the demand for a physician to be educated by a patient with a different cultural background and belief system. "These influences affect the development of a sense of the other's competence, the practitioner's sense of the patient's ability to comply with treatment, and the practitioner's ability to deliver effective treatment."[8]

In a study designed to monitor the long-term reproductive health issues of African and Middle Eastern refugees in Australia, researchers studied 150 women by using quantitative instruments, focus groups, and interviews. They wrote, "Twenty percent specifically raised issues of communication difficulties with the health services, which included the lack of availability of interpreters, the practitioner giving them information that they perceived to be inappropriate, and an inability of doctors to 'hear what they were being told.'"[10] Despite the women being from diverse ethnic, economic, and religious backgrounds, there was a "strong perception of discrimination, miscommunication and poor quality service provision within health and welfare agencies."

Hamilton[11] continued the evaluation of the participatory decision-making model of physician-patient interaction. This model is taught in most Western universities and assumes that patients "both linguistically and culturally are equipped to engage in a discussion with their doctor about diagnosis and treatment, working together to develop a treatment management plan." As was discussed by Manderson and Allotey, patients represent their own culture, which might not benefit from this traditional model.[8] Hamilton proposed that effective communication by practitioners would require "… multiple models to accommodate cultural and other differences in their patients."[11]

Franck and Callery[12] conducted an extensive, critical literature review of all PFCC literature in an attempt to find operational definitions, themes, constructs, and empirical indicators. The authors found inconsistency in definition of terms and in the practical application of PFCC throughout various systems. The largest deficit cited was that "health professionals' judgments about the credibility of mothers' reports sometimes led them to dismiss important assessments." Franck and Callery were unable to find any evidence that education in PFCC concepts has led to any acquisition of skills and suggested that the construct of partnership "should lead to the concept of shared decision-making and subconcept of participation in decision-making."

Another study looked at cultural competency, intercultural communication, and family-centered care even more specifically by examining the experience of professionals working with children with special health care needs and their parents.[13] The professionals studied were participants in the Virginia Leadership Education in Neurodevelopment and Related Disabilities program. Participants completed the program between 1996 and 2006 and had been working in their discipline for at least 1 year. The Measure of Processes of Care for Service Providers was used.[14] The device contained 27 questions on a Likert-style scale that represented 4 factors of family-centered care: 1) showing interpersonal sensitivity, 2) providing general information, 3) communicating specific information about the child, and 4) treating people respectfully. Researchers also included a qualitative question: "What have been the greatest barriers to family-centered care in your occupation?"

Thirty-three graduates of the Virginia Leadership Education in Neurodevelopment and Related Disabilities program replied to the survey, resulting in the identification of five major qualitative themes: 1) institutional culture, 2) absence of a care coordinator, 3) insufficient training in intercultural/interpersonal communication skills, 4) policy factors, and 5) family factors. Quantitative results showed that "interdisciplinary professionals were providing care consistent with the principles of PFCC in the areas of treating people respectfully, communicating specific information to families, and showing interpersonal sensitivity." The study recognized the very small population of respondents and suggested that only those who were actively engaged in PFCC practices responded. Lotze

et al[13] also recognized that no data from practitioners existed before they attended in-depth PFCC training.

Finally, Johnson et al[15] addressed the effectiveness of family-centered care education of medical students at the University of Vermont College of Medicine, Burlington, VT. That program was the template for the FAF program, which Parents Reaching Out and the University of New Mexico School of Medicine have used since 1997. When the University of Vermont medical students completed a visit with their family faculty, they were asked to complete and submit a paper on "what they learned from the family and how that might influence their practice in the future." Three reviewers completed a pilot study that consisted of 45 papers collected from July 2001 to June 2002 in order to establish a set of themes. Then, a fourth, independent reviewer was given the task of reviewing 58 papers that were completed between July 2002 and June 2003 using the categories provided by the pilot study. An early theme that was found concerned the issues the families had with physicians; this theme was broken into 14 categories—all consisting of communication failures. The top 2 most frequent themes were collaboration with families and listening. The authors proposed that an evaluation of the application of communication skills resulting from this program would be an interesting study.

Collectively these studies indicate a need for establishing measurements for the skill acquisitions that may result from PFCC training. Although the CAS has been used in very limited studies, the strong relationship it showed to intercultural apprehension[7] makes it a desirable device for evaluating PFCC training.

The hypothesis of the current research is that PFCC training will result in increased communicative adaptability by medical students.

METHODS

After an extensive literature review, I concluded that there was a need to establish measurements for the skill acquisitions that may result from PFCC training for medical students. The CAS has been used in very limited studies, but it has a high reliability and has been used in university students by Long and Anarbaeva,[7] making it a strong device for measuring PFCC education programs. Although there are several newer, valid instruments for physicians who practice medicine, there has been little work looking directly at medical school education in PFCC or communication training and skills.

A census was conducted of 71 medical students in their third year at the University of New Mexico School of Medicine beginning in August 2011 through August 2012. There was a 100% voluntary participation rate. Students participated in Parents Reaching Out's FAF program during their pediatric rotation. A pretest was administered, in paper form, to medical students during their orientation into the FAF training at the University of New Mexico Hospital, Albuquerque, NM. The pretest used the CAS, which has a high interitem reliability ($\alpha = 0.948$). The participants were asked to rate themselves with 30 Likert-style statements, with answers from 1 to 5, with 1 being "least likely" and 5 being "most likely." The numbers were then entered into a chart that sorted the scores into 6 categories: social experience (the ability to take skills learned from previous encounters to improve future social exchanges and enjoy new and challenging social interactions); wit (skillful, intellectual humor); social composure (a speaker who appears to be calm and composed); articulation (an ability to speak clearly and to choose words appropriately); social confirmation (the ability to appropriately gauge what another person needs from an interaction); and appropriate disclosure (an ability to divulge or withhold appropriate amounts of personal information). Students were not provided with a space for any identifying information or demographic information for this study.

After completion of the FAF seminar, the medical students were given the same survey. The posttest was administered, in paper form, at the end of the debriefing session at Parents Reaching Out. Again, subjects were not provided space for any demographic information such as sex, race, or age.

Table 1. Impact of medical students' training in patient- and family-centered care on factors of Communicative Adaptability Scale

Factor	df	F ratio	p value[a]
Social experience	1, 84	1.60	0.21
Wit	1, 84	1.48	0.23
Social composure	1, 84	0.01	0.91
Articulation	1, 84	0	0.96
Social confirmation	1, 84	1.89	0.64
Appropriate disclosure	1, 84	4.39	0.04

[a] One-way between-groups analysis of variance, with significance < 0.05.
df = degrees of freedom.

RESULTS

A one-way between-groups analysis of variance was conducted to explore the impact of PFCC training on medical students as measured by the CAS. Questionnaires were divided into pretest and posttests, and means were compared on the 6 factors: social experience, wit, social composure, articulation, social confirmation, and appropriate disclosure. There was statistical significance at the $p < 0.04$ for appropriate disclosure shown in Table 1.

A mean plot was conducted on each of the six factors, which revealed a positive correlation between pretest and posttests for each factor except for social composure and articulation, which illustrated negative slopes (not significant).

DISCUSSION

The CAS questionnaire is a moderately effective way to evaluate communication skills that students acquire from PFCC training. An increase in appropriate disclosure is an important gain because it means students have likely become more sensitive to the level of intimacy that the other person is seeking and the student is willing to offer more information. Information sharing is one of the core concepts of PFCC, so gains in this factor are important.

One possibility is that students learn the importance of articulating their own values about patients and families aloud. During the FAF presentation, the facilitator displayed a value statement that said, "We believe *all* families care deeply about their children" and continued to discuss the importance of articulating, to families, that physicians share these values. The values expressed by PFCC seem to be commonsense, but patients and families may not believe that physicians hold these ideas.

Conversely, FAF may increase anxiety for medical students. Although not statistically significant, the mean plots did show a negative shift of skills relating to comfort with communicating and the ability to express ideas clearly. This area of the education may need to be revisited. One possible explanation for the rise in anxiety levels about communicating could stem from a new understanding that, to be successful, the students will have to become more intimate with some patients who desire interactions that are more intimate. The medical school curriculum does not necessarily provide instruction on ways to communicate with diverse populations of patients and families.

Study Limitations

The population size of this study was very small because the University of New Mexico only admits 60 to 75 students per year to the School of Medicine, so there is very little opportunity to increase the study population unless other universities that use FAF programs participate. At such a small size, it is difficult to assess outcomes of FAF training, on 6 factors, accurately. It is possible that a larger study could reveal more statistical significance between the pretest and posttest. Also, because this is a census of all medical students at the University of New Mexico's School of Medicine in their third year and pediatric rotation, this information cannot be generalized to any other population. However, as a stepping-stone to more robust, substantial studies into medical school education, this study provides an important contribution to the medical literature.

The construction of this specific PFCC training may also be a factor in the outcome of this study. Although the speakers at the one-hour FAF orientation were almost always the same, the host families where students went were diverse in socioeconomic, racial, religious, and ethnic backgrounds. Future studies may need to conduct research into the type of messages that are being delivered via the host families. Perhaps the messages students are receiving are negative or hostile toward physicians, and that accounts for the negative tendency of posttest scores on the articulation and social composure elements. Evaluating the messages of host families may allow future researchers to control and test different styles of messaging or content during family visits to determine whether family stories have an impact on student experience.

Possible confounding that may have occurred is additional PFCC training that students received from attending physicians and other residents during their pediatric rotation. Further study would be beneficial into the other types of PFCC training the students are receiving during this rotation or other rotations.

It is possible that students are receiving negative guidance from other staff that suggests communicating with families is not a high priority and that they will be penalized for spending too much time chatting with patients. Despite the possibility of contrary messages, this study documents that students are experiencing alterations in the way they perceive and adapt to what the other person needs from a communication interaction, which is a strong showing for a training program that is designed to improve how physicians and patients work together.

The values expressed by PFCC seem to be commonsense, but patients and families may not believe that physicians hold these ideas.

CONCLUSION

Future studies may seek to link CAS scores with other measures, such as patient satisfaction scores or safety data. It is important to understand that this study was not intended to study physicians who are already practicing, but it may prove useful to link CAS scores with future performance of physicians once they have set up their own practice.

Finally, the ultimate goal of this study was to link existing, highly reliable communication research measures to health care research. In the past few decades, physicians have begun to see the benefit of employing communication scholars in research that involves interaction and messaging. This notion is not to say that physicians are not capable of successful research involving communication, but that their work can only be strengthened by interdisciplinary collaboration with scholars who have the ability to provide new insight into interactions and relational dynamics. ❖

Disclosure Statement

The author(s) have no conflicts of interest to disclose.

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The Move to Touch

A practitioner of experience does not seize the patient's forearm with his hand as soon as he comes, but first sits down and with a cheerful countenance asks how the patient finds himself; and if the patient has any fear, he calms him with entertaining talk, and only after that moves his hand to touch the patient.

— *De Medicina,* Aulus Aurelius Cornelius Celsus, c 25 BC – c 50 AD, Roman encyclopaedist