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Family medicine resident sociocultural education using health equity

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Abstract

Background: The milestone project across multiple medical specialties calls for resident attention to sociocultural factors that affect health outcomes. Despite the long-standing reality of disparate health outcomes, there are few well-described approaches for teaching such topics to medical resident physicians.

Objectives: This case study reflects a quality improvement process aimed at establishing a meaningful sociocultural curriculum for our family medicine residents.

Methods: The Family Medicine Residency at New Hanover Regional Medical Center is a 6-6-6 community-based program with previous limited formal sociocultural training. In 2017, programming related to cultural diversity was mixed into resident educational time over a single four-week period. Qualitative feedback from that effort helped guide the development of a more robust and intentional longitudinal year-long health equity curricular approach in 2018, based on didactics and experiential learning. Self-reported quantitative data on resident knowledge and ability were reviewed to evaluate that curriculum.

Results: 18 of 18 residents (100%) were exposed yearly to sociocultural education over two academic years (2017-2019). Qualitative feedback in year one suggested mixed uptake of the topics. Data from the updated year two longitudinal approach revealed significant improvements in resident knowledge about, and ability to apply, health equity topics.

Conclusion: Our case study suggests that a longitudinal curriculum with opportunities for concept application to health equity can impact residents' sociocultural knowledge and skills. The success at our program also holds promise for other small community-based programs that may be short on time and/or resources.

Abbreviations: QI: Quality improvement; PDSA: Plan-do-study-act; NHRMC: New Hanover Regional Medical Center

Introduction

Racial and other health disparities in the United States have been well described by an early 1985 Department of Health and Human Services paper [1], a 2002 Institute of Medicine report [2], and then again by a 2010 American College of Physicians update [3]. Despite the resulting push to train medical professionals in cultural competency, health disparities remain pervasive [4]. Not surprisingly, a few studies suggest that resident knowledge of healthcare disparities does not improve without intentional educational opportunities [5-7].

In addition to the lack of a clear template for training medical residents how to recognize and navigate sociocultural factors [8], residencies may also report time and financial barriers to such curriculum implementation [9]. Still, the Accreditation Council for Graduate Medical Education lists training on sociocultural factors in several specialty Milestone Projects. Three of our family medicine residents stepped forward to voice their desire to remedy the lack of attention and respect for sociocultural diversity in our educational and practice environment. We thus commenced with a quality improvement (QI) process to create a meaningful sociocultural curriculum for our family medicine residency.

Methods

Our family medicine residency at New Hanover Regional Medical Center (NHRMC) is a 6-6-6 community-based program located in Wilmington NC. Prior to 2017, our program offered no formal sociocultural education in diversity or health equity, beyond that of the psychosocial model explored with behavioral medicine faculty. Plan-do-study-act (PDSA) cycles were used to guide our QI work over a period of two academic years (2017-2019) and were carried out by three faculty and three self-identified residents. Initial input for year 1 education was to embed sociocultural education during a four-week resident conference series block. Following this block, faculty met again with the three residents who had collected subjective feedback from their peers. That qualitative feedback was used to develop a more robust and intentional longitudinal year-long curricular approach in year 2, the delivery of which was supported by grant funding from the local area health education center.

Self-reported resident scores were collected before and after year 2 of the QI process, to evaluate that longitudinal curriculum. Differences in the paired before and after data were evaluated with two-sided Wilcoxon Signed-Rank tests for each question to determine if there were changes correlated with the curriculum; analyses were performed in SAS 9.4 (SAS Institute, Cary, NC). This quantitative data relied on Likert-style scoring of knowledge, ability, and attitudes toward sociocultural and health equity topics. These questions were intended to capture valuation of curricular content that was planned and were not

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validated measurement tools. As review of the initial scores suggested that some residents had rated their baseline health equity knowledge and ability higher than expected, we added a measure to the same set of questions asked upon completion of year 2 ("how much, if any, did __ improve as a result of the curriculum") to for more accurately capture improvement resulting from the curriculum.

Prior to completion of year 2 in the QI process, another PDSA cycle was used to adjust the curriculum for a future year 3 (2019-2020), when no external funding is available. As the subject of QI evaluation in this case study was an educational curriculum, the activities were deemed to be QI in accordance with the NHRMC Research Department checklist of QI versus Research; approval from the Institutional Review Board was therefore not necessary.

Results

18 of 18 (100%) family medicine residents were exposed to at least a portion (not totality) of the sociocultural training in both years of the QI process.

PDSA for Year 1

Three cultural diversity-related lectures and one film discussion about racism were scheduled throughout a four-week period of resident educational conference series devoted to personal and professional development in April 2017.

PDSA for Year 2

Qualitative feedback from year 1's short-term training efforts suggested mixed uptake and appreciation of the topics by the residents, including even indifference or defensiveness in some. This PDSA generated recommendations for a longer more intentional curriculum and to seek a facilitator for classroom didactics who was external to our program, who could create a neutral and safe space for residents to work through challenging topics. The above-mentioned grant helped secure this facilitator, as well as 0.05 faculty full-time equivalent to oversee completion of the resident assignments. The year 2 curriculum was developed to purposefully pivot around health equity as an application to family medicine, and was carried out August 2018 through May 2019 with the following structure:

Table 1. Health equity knowledge and ability before and after year 2 curriculum

	Pre-Education Survey (n = 18) Mean [range]	Post-Education Survey (n = 18) Mean [range]	P-value	Reported Improvement (Average)*
Comfort Defining				
Culture	3.1 [2 – 4]	3.6 [3 – 4]	P= 0.008 S = 18	77.2%
Cultural Competency	2.9 [2 – 4]	3.6 [3 – 4]	P = 0.002 S = 27.5	74.2%
Cultural Humility	2.7 [1 – 4]	3.6 [3 – 4]	P = 0.001 S = 33	80.0%
Implicit Bias	2.9 [1 – 4]	3.7 [2 – 4]	P = 0.003 S = 39.5	76.7%
Health Disparities	3.1 [2 – 4]	3.8 [3 – 4]	P = 0.012 S = 24.5	78.9%
Health Equity	2.7 [1 – 4]	3.8 [3 – 4]	P < 0.001 S = 45.5	85.6%
Comfort Index[A]	2.9 [2 – 4]	3.7 [2.8 – 4]	P < 0.001 S = 74.5	78.8%
Confidence in …				
Knowledge of demographic shifts in US population	2.4 [1 – 4]	2.9 [2 – 4]	P = 0.018 S = 30	60.6%
Ability to list examples of racial/ethnic health disparities	2.9 [2 – 4]	3.7 [2 – 4]	P < 0.001 S = 39	78.3%
Ability to recognize my own biases	3.2 [2 – 4]	3.7 [3 – 4]	P = 0.008 S = 18	71.9%
Ability to work with patients who look/speak differently than me	3.4 [2 – 4]	3.7 [3 – 4]	P = 0.070 S = 13.5	70.8%
Ability to attend to and recognize limited health literacy	3.1 [2 – 4]	3.7 [3 – 4]	P = 0.016 S = 33.5	65.0%
Ability to elicit health beliefs in my patients	2.8 [1 – 4]	3.3 [2 – 4]	P = 0.063 S = 16.5	61.7%
Ability to work with health literacy concerns	2.7 [1 – 4]	3.3 [2 – 4]	P = 0.018 S = 23	65.0%
Identify community assets and needs	2.6 [1 – 4]	3.2 [2 – 4]	P = 0.002 S = 27.5	68.9%
Ability to describe advocacy methods for health equity	2.2 [1 – 4]	3.2 [2 – 4]	P = 0.001 S = 47.5	62.8%
Ability to personally address health equity in my practice	2.3 [1 – 4]	3.3 [1 – 4]	P < 0.001 S = 55	68.9%
Confidence Index [A]	2.8 [2 – 3.7]	3.4 [2.4 – 4]	P < 0.001 S = 73.5	67.4%

P-values of 0.05 and less were considered statistically significant and all tests were two sided. Wilcoxon Signed Rank statistic *S* for change in score = 0 is displayed for reference. The scores were presented as 1 = Not at all, 2 = Neutral, 3 = Somewhat, 4 = Very

[A] Comfort Index and Confidence are equally weighted averages of all related items for each respondent.

*Reported Improvement (Average) is the percentage of improvement for each item as a result of the curriculum, as per the response on the Post-Education survey. The index improvement is an average of the other reported improvement scores.

Table 2. Health equity agreement statements before and after year 2 curriculum

Statement	Pre-Education Survey (n = 18) Mean [range]	Post-Education Survey (n = 18) Mean [range]	P-value
Culture is an important aspect in healthcare provider-patient interaction	4.5 [3 – 5]	4.9 [3 – 5]	**P = 0.031 S = 10.5**
Physician bias affects patient care and health outcomes	4.5 [1 – 5]	4.7 [2 – 5]	P = 0.250 S = 3
Racism affects health care and health outcomes	4.5 [3 – 5]	4.7 [1 - 5]	P = 0.531 S = 4.5
Residency training should provide dedicated training on culture and health equity	4.3 [2 – 5]	4.6 [3 – 5]	P = 0.125 S = 5
Physicians should have ongoing CME requirements to address cultural effectiveness	4.3 [2 – 5]	4.5 [2 – 5]	P = 0.531 S = 4.5
Equity Statement Composite [c]	4.4 [2.8 – 5]	4.7 [2.2 – 5]	**P = 0.039 S = 17**

P-values of 0.05 and less were considered statistically significant and all tests were two sided. Wilcoxon Signed Rank statistic *S* for change in score = 0 is displayed for reference.
The scores were presented as 1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, 5 = strongly agree

1) One two-hour classroom session per quarter, with an overarching theme of cultural humility (focusing on types of racism, implicit bias, racial/cultural identity development, and tools for change); these were in-depth sessions led by an experienced facilitator in diversity training.

2) Exploration of sociocultural value inherent in differences with peers, through family tree activity and Balint groups.

3) Enhancement of clinical opportunities to work with specific vulnerable populations. Upon completing these patient care activities, residents submitted focused and personal written reflections on elements across the socioecological framework to review implicit bias, interpersonal communication, sociocultural factors and other determinants that impact health outcomes, and population disparities.

Data from Year 2

Tables 1 and 2 include baseline data for mean scores on resident knowledge, ability, and agreement statements for the year 2 curriculum. Resident attendance at each of the classroom sessions ranged from 14 (77.8%) to 16 (89%) out of 18, and the mean value given to all classroom sessions was 3.75 out of 4 (1 = not very valuable and 4 = very valuable). Resident completion of various reflection assignments was highly variable. Although there was minimal statistical significance in change in agreement statements (Table 2) as a result of the year 2 curriculum, nearly all the health equity knowledge and ability items assessed (Table 1) were improved with statistical significance.

PDSA for Year 3

Residents reported seeing notable changes in peer behavior and comments during patient care and resident recruiting season contexts, though not as uniformly noticed in program faculty. We looked ahead to a future year 3 (2019-2020) and drafted a plan for longitudinal integration of practice-based clinical learning activities into current resident rotations (with faculty supervision thus shared). We also began exploring with NHRMC as our sponsoring institution how to continue and expand classroom sessions in year 3.

Discussion

Our QI efforts demonstrate the feasibility of developing a meaningful sociocultural curriculum for family medicine residents in a relatively short time, and we expect this to serve as a foundation to continue building our physician training activities in health equity. We found success in a longitudinal training inclusive of safe spaces for residents to explore challenging health equity topics, and of experience-based learning layered onto current rotations (rather than trying to add new ones). Although our experience was limited to a single small family medicine program, using non-validated measurement tools, this concept still holds promise for other specialties or programs who perceive time or resources as barriers.

The impact on resident education could certainly be strengthened by more visible faculty participation in health equity, which we hope to achieve with future iterations of our curriculum. Moving forward, we also anticipate interest from NHRMC in further exploring whether resident training on sociocultural factors actually translate into patient-related outcomes, a concept which has been questioned by some large reviews [10,11].

Conclusion

Our QI work on resident sociocultural education supports a longitudinal mixed approach with classroom and practice-based learning experiences, by yielding a 67.4 - 78.8% index improvement across resident self-rated health equity knowledge and ability. It also seems noteworthy that health equity is an applicable lens through which to reach our family medicine residents with sociocultural education.

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