CLINICAL PRACTICE

Improving cultural competency in advanced practice providers at an academic medical center

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ABSTRACT

Racial health disparities and healthcare provider bias are concerning problems. Cultural competency training (CCT) is effective to address this bias, resulting in improved patient outcomes. This project aimed to increase cultural competency among advanced practice providers (APPs) who completed CCT. The Process of Cultural Competence in the Delivery of Healthcare Services model and its primary constructs of cultural awareness, skill, knowledge, encounters, and desire guided this work, along with other evidence. Eighteen APPs completed the training and tests, demonstrating statistically significant score increases in overall cultural competency ($p < .001$), cultural awareness ($p = .030$), cultural skill ($p = .017$), cultural knowledge ($p = .002$), and cultural encounter ($p < .001$). An increased cultural desire was not statistically significant ($p = .120$). Evidence reviewed demonstrates how this work can guide future quality improvement efforts to implement evidence-based CCT professional development for all healthcare workers.

Key Words: Cultural competence, Transcultural healthcare, Healthcare disparities, Healthcare equity, Cultural competence and healthcare organizations

1. INTRODUCTION

Seminal research published by the Institute of Medicine's 'Unequal Treatment' in 2003 concluded that healthcare provider (HCP) bias can contribute to health disparities and inequities.[1] Health equity and healthcare delivery disparities have increasingly gained attention over the last several years as the COVID-19 pandemic unfolded.[2, 3] Provider bias is likely one of many driving factors for structural racism and racial health disparities/inequities in the United States (US) today.[3, 4] Cultural competency training (CCT) has gained a reputation as an effective intervention that fosters cross-cultural communication, reduces health disparities, and pro-motes higher quality and equitable patient-centered care.[5–8] CCT focuses on increasing diversity awareness and can help improve intercultural communication.[9] A review of the available knowledge on these topics follows a description of the local problem.

1.1 Problem description: Local opportunity for improvement

The need for CCT is not only national, but is also of local importance for an academic medical center. There are several reasons for this. Approximately 30% of the population surrounding the medical center is considered to be minority.[10]

Moreover, the region has experienced racial tensions in the last several years. Thus, the need for CCT that addresses racial inequities and bias was particularly salient. The health system desires to promote diversity, equity, and inclusion for HCPs and patients. This quality improvement (QI) project expanded on the academic medical center's current diversity and CCT with an HCP focus to improve HCP CCT post-training. The following review of the evidence outlines what is needed to align with best practices and further illuminates the complexities of the problem and related concepts.

1.2 Available knowledge

1.2.1 *Racial health disparities*

After the 2003 IOM report exposed health disparities in minority communities, other researchers have confirmed that these disparities continue to exist today.[1, 5] Disparities are documented for a vast range of specific conditions (e.g., myocardial infarctions) and populations (e.g., pediatrics), consistently detailing persistent disparities for minority populations.[11, 12] Disparities are found in outcomes for minority persons in various healthcare settings, ranging from primary care and mental health to trauma care.[13, 14]

Potential causes of these disparities are socioeconomic status (SES) or differences in other Social Determinants of Health (SDOH), including: education, social and community context, health/health care, and neighborhood/built environment.[15] Yet, SES and SDOH fail to explain the continued disproportionate outcomes and systemically different health experiences for minority Americans, who are not socioeconomically disadvantaged. Therefore, it can be concluded that considerations beyond SES and other SDOH factors are relevant to outcomes for all minority Americans.

The problem became apparent during COVID-19 when outcomes for minority populations were worse than for those who are White. Additionally, inequities in treatment were documented. Multiple studies document higher COVID-19 rates and higher mortality from COVID-19.[16, 17] The Centers for Disease Control and Prevention (CDC) reported disparities in receiving medication for COVID-19 treatment by race/ethnicity with Black, Hispanic, and "other" races along with Hispanic patients receiving monoclonal antibodies less often than White patients.[3] These authors concluded that equitable use of effective medications could reduce differences in severe COVID-19 outcomes in the Black and Hispanic communities. Solutions are needed.

1.2.2 *Cultural competency training*

Research supports implementing CCT programs for healthcare providers and workers as an effective method for improving patient health outcomes and reducing healthcare

disparities.[18] For example, a hybrid trial/intervention using culturally competent care to improve living donor kidney transplants (LDKT) significantly increased the LDKT rates for Hispanic patients.[19] Moreover, there is evidence that educational training improves cultural competency. McElfish et al.,[20] used a mixed-methods evaluation approach to evaluate a CCT program they developed. This evaluation used participatory action methods within the Marshallese and Hispanic communities. The intervention was done incorporating a variety of professionals, including physicians, nurses, pharmacists, health educators, administrators, and staff. In this study, researchers collected quantitative and quantitative evaluation data after each training session and six months after training completion. Participants reported improved levels in knowledge (91.2%), competence (86.6%), and performance (87.2%) as a result of the CCT.[20] Qualitative results revealed that the organizations in this community made policy and environmental changes.[20] These findings are important because this large-scale study shows that an intervention can cause actual changes to the system and not just perceived improved competence.

Similarly, LaPham[21] used a quasi-experimental pre-/post-project approach to study the impact of an in-person, evidence-based workshop. Participants included physicians, nurses, and nurse practitioners from three student health centers. This study resulted in mean total Inventory for Assessing the Process of Cultural Competence Among Healthcare Professionals Revised (IAPCC-R) scores rising from 70.84 to 78.21 ($p < .001$) for all participants, as well as a practically significant (mean increase of 7.37) change in pre-/post-test scores, which is an important increase in cultural competence.[21] More specifically, there were noted increases in cultural competency constructs such as awareness, skill, knowledge, encounters, and desire. Groups of interprofessional health providers may experience similar gains as these student groups.

There is evidence to guide such training. A systematic literature review of educational interventions to increase nurses' cultural competence found six relevant studies between 2000 and 2018. The reviewers concluded that teaching interventions varied in quality and content but largely resulted in a self-perceived increase in cultural competence.[22] The same reviewers summarized the educational interventions as occurring in-person and/or online, ranging from one to 17 hours. Although there is some variation in the quality and content of published interventions, CCT was found to improve cultural competency. In addition to evidence, there is theoretical support for this quality improvement (QI) project.

1.3 Rationale

1.3.1 *Theoretical model*

The Process of Cultural Competence in the Delivery of Healthcare Services model emphasizes cultural competence as an ongoing process where the healthcare workers strive to work within the patient context.[23] The primary constructs of the model, developed by Dr. Josepha Campinha-Bacote, are cultural awareness, cultural skill, cultural knowledge, cultural encounters, and cultural desire. This model ensures that all five constructs are addressed to represent cultural competence.[23] This model applies to healthcare workers in all practice arenas, ranging from administration and research to the acute care bedside, and is used as a framework for healthcare organizations to provide culturally conscious care.[5] Thus, this model was well suited to inform the methods of this project to meet the specific aims of this work. The one-hour CCT training described below was developed based on the National Center of Cultural Competence curriculum and the five constructs of cultural competency delineated in the model along with other evidence.

2. METHODS

2.1 Context

This QI project was implemented as a part of the Advanced Practice Provider (APP) fellowship lecture series at an academic medical center. It included nurse practitioners and physician assistants. It is estimated that there are over 500 APPs in the academic medical center, all of whom were offered the training. Due to the potentially sensitive nature of the results, no demographic information was collected in order to protect participant privacy.

2.2 Intervention

2.2.1 *Recruitment*

Following Institutional Review Board approval, APPs were notified by email of the training and separately recruited into the study. Potential participants were sent an email that described the study containing a link to a secure and private sign-up form. When the participant added their name to possibly join the study, the PI sent a follow-up email with instructions, reminders for scheduled training, and a second secure link to the consent and IAPCC-R pre-test. Participants entered a confidential four-digit pin to link their pre/post-tests confidentially.

2.2.2 *Training*

The PI and team developed the one-hour CCT based on the five constructs of cultural competency delineated in 'The Process of Cultural Competemility in the Delivery of Healthcare Service' described above and curricula from the National Center of Cultural Competence Training.[5] The PI delivered

the CCT Program consisting of a one-hour professional development workshop with the following outline.

Part 1 - introduce program objectives

Part 2 - explain pertinent definitions

Part 3 - summarize why cultural competency training is needed

Part 4 - relate health care provider cultural competency to patient outcomes

Part 5 - describe cultural competency and its constructs

Part 6 - compare interventions to tackle implicit bias.

The lecture objectives aligned with the list above. One objective was to explain pertinent definitions. The terms defined included implicit bias, health disparities, health inequities, and defined culture and cultural competence. The need for CCT was explained from a global and local context. This focused on CCT's benefits and described evidence of how HCP bias can negatively affect patient outcomes. Each construct of CCT was introduced along with tools to improve work in that construct. Finally, the training compared interventions to tackle implicit bias and resources for further training. Recommendations included: first, recognize racial bias exists and may affect patient outcomes. Second, there is a need for continuous education, reflection, re-assessment, and readjustment. There were silent reflections throughout the presentation to allow participants to think about their responses to different scenarios or areas of improvement. To maximize the control over the conversation and to protect the safety of participants, the content was delivered without audience verbal participation, only silent reflections.

2.2.3 *Post-test*

After the training, an email was sent with a third secure link to all study participants. Participants had one week to complete the post-assessment IAPCC-R following the training. A reminder email to complete the post-test was sent immediately after the training and again two days before the post-test due date. Participants entered their four-digit pin to link their pre/post-tests confidentially.

The theoretical concept 'The Process of Cultural Competence in the Delivery of Healthcare Services model' was utilized for self-determination of cultural competency.[5] HCPs need to recognize areas of opportunity for improvement as part of ongoing improvement. Thus, per the guiding theory, individual providers who elected to were privately sent their pre-and post-IAPCC-R scores at the end of the study.

2.3 IAPCC-R

The IAPCC-R has been previously described as testing the five significant constructs of cultural desire: awareness, knowledge, skill, encounters, and overall cultural compe-

tence.[24] The IAPCC-R test uses a 4-point Likert scale with response categories that range from strongly agree to not involved. A score ranging from 25-50 is culturally incompetent; 51-74 is culturally aware; 75-90 is culturally competent; 91-100 is rated culturally proficient.[5] The average completion time for the test is 10-15 minutes. Reliability scores ranged from a Cronbach's alpha of 0.72-0.90.[24] Permission to use the IAPCC-R tool was obtained from the author.

2.4 Analysis
After data were collected, the pre-test and post-test data were uploaded to Intellectus Statistics[25] and analyzed using paired t-tests. Data were assessed for skewness, kurtosis, and missing data.

3. RESULTS
Approximately 500 possible participants at the medical center met the inclusion criteria. A total of 31 people attended the training. A total of 18 registrants completed the pre-test,

attended the training, and accurately completed the post-test (58% of people who attended the lecture). This sample's Cronbach's alpha coefficient was .84. All normality assumptions were met unless specified.

3.1 Cultural competence total score
The total pre-test scores had a mean of 70.72, and the post-test mean was 76.94. Overall, the scores for cultural competency increased by 6.22 points after attending the CCT lecture. The result specifics are in Table 1.

A two-tailed paired samples t-test was conducted to examine whether the mean difference of the pre/post-test was significantly different, the null hypothesis being that the pre and post-test scores were equal. The result of the two-tailed paired samples t-test was significant ($p < .001$), indicating the null hypothesis can be rejected. The pre-test mean was significantly lower than the post-test mean. The results are presented in Table 2.

Table 1. Summary statistics table total and by construct

Variable	M	SD	n	SE_M	Min	Max	Skewness	Kurtosis
Total Pre-test	70.72	7.17	18	1.69	58	83	0.15	-1.01
Total post-test	76.94	7.89	18	1.86	64	88	-0.21	-1.27
Cultural Awareness Pre-test	15.00	1.85	18	0.44	11	18	-0.46	-0.12
Cultural Awareness Post-test	15.94	1.95	18	0.46	13	19	0.18	-0.97
Cultural Skill Pre-test	12.94	2.29	18	0.54	10	18	0.89	-0.23
Cultural Skill Post-test	14.56	2.04	18	0.48	11	17	-0.36	-1.06
Cultural Knowledge Pre-test	11.67	1.81	18	0.43	8	16	0.51	1.09
Cultural Knowledge Post-test	13.33	2.30	18	0.54	9	17	-0.03	-0.96
Cultural Encounter Pre-test	13.17	1.58	18	0.37	9	15	-0.92	0.75
Cultural Encounters Post-test	14.67	2.17	18	0.51	12	18	0.16	-1.40
Cultural Desire Pre-test	17.94	1.76	18	0.42	15	20	-0.24	-1.23
Cultural Desire Post-test	18.44	1.72	18	0.41	15	20	-0.86	-0.43

Note. '-' indicates the statistic is undefined due to constant data or an insufficient sample size.

Table 2. Two-tailed Paired samples t-test, pre-and post-test differences total, and by construct

Variable	Pre-test Mean (SD)	Post-test Mean (SD)	t value	p value	Cohen's d
Total	70.72 (7.17)	76.94 (7.89)	-4.20	< .001	0.99
Cultural Awareness	15.00 (1.85)	15.94 (1.95)	-2.36	.030	0.56
Cultural Skill	12.94 (2.29)	14.56 (2.04)	-2.64	.017	0.62
Cultural Knowledge	11.67 (1.81)	13.33 (2.30)	-3.64	.002	0.86
Cultural Encounter	13.17 (1.58)	14.67 (2.17)	-4.12	< .001	0.97
Cultural Desire^	17.94 (1.76)	18.44 (1.72)	-1.64	.120	0.39

Note. N = 18. Degrees of Freedom for the t-statistic = 17. D represents Cohen's d. ^ two-tailed Wilcoxon signed rank and related descriptive statistics

3.2 Cultural competence scores by construct
Next, the mean pre and post-test scores were calculated for each framework construct. The results are in Table 1. Al-

though the increase varied across constructs, mean scores for all constructs increased post-test compared to the pre-test.

A two-tailed paired samples *t*-test examined the mean difference for all constructs that met normality assumptions (see Table 2). The results were statistically significant for cultural awareness (*p* = .030), cultural skill (*p* = .017), cultural knowledge (*p* = .002), and cultural encounter (*p* < .001). Data from the construct of cultural desire violated the assumption of normality, so a two-tailed Wilcoxon signed rank test was conducted, and the results were not significant (*p* = .119).

4. DISCUSSION

The pre-test average score was 70.72, while the post-test score average increased to 76.94. According to evidence, a score ranging from 25-50 is culturally incompetent; 51-74 is culturally aware; 75-90 is culturally competent; 91-100 is rated culturally proficient.[5] Thus, as a group, the participants moved from being culturally aware to being culturally competent, demonstrating a practically important and statistically significant change at the group level. Based on conventional criteria, the effect size (Cohen's d) of .99 shows a large effect.[26] This finding is consistent with prior evidence that CCT increases cultural competence.[20–22]

There were important variations in the individual growth of group members. According to the pre-test results, 67% (n = 12) of the APPs were culturally aware, and 33% (n = 6) were culturally competent as designated by the ranges listed above.[5] After the intervention, 39% (n = 7) of the APPs were culturally aware, and 61% (n = 11) of the APPs were culturally competent. Thus, 33% (n = 6) of participants increased from being culturally aware to culturally competent. None of the participants were culturally incompetent nor culturally proficient in both the pre-test and post-test groups.

The scores of cultural desire increased by 0.5 points and failed to demonstrate statistically significant change. A possible explanation may be the already high desire to improve cultural competence at baseline. Cultural desire had the highest scores for pre and post-test results of all the competency constructs. This raises several interesting questions for future studies that align with other evidence. These results are similar to results from a similar study that implemented CCT for HCPs.[27] In Chau's study, there were similar results, such as statistically significant increases in total test scores (*p* = .034) and for cultural knowledge (*p* = .010), skill (*p* = .013), and awareness (*p* = .034). Both the current and Chau's showed cultural desire did not have significant score changes. Chau concluded that participants already had high levels of cultural desire before the training and continued to have a strong desire post-lecture.[27] The current study also supports this idea, given that participants had a pre-test cultural desire level of 17.94. Together, these studies may indicate that persons who attend CCT or participate in CCT studies have

a high level of cultural desire, an idea considered further in the following limitations and strengths. There were also similar results in the study by Saffee,[28] which reported in the pre-test analysis that more participants were culturally aware than culturally competent. Post-intervention analysis shows that more participants were culturally competent than aware. Study results, however, did not demonstrate statistical significance in pre-test and post-test IAPCC-R scores.

Like the current study, Saffee[28] showed cultural knowledge to have the lowest scores of all constructs. Other authors also reported relatively low scores on the construct of cultural knowledge.[29, 30] The cultural knowledge construct focused on understanding cultural practices and ethnopharmacy. It can be concluded that participants in these studies indicate a lack of cultural knowledge. Future studies can focus on better understanding and specifically affecting the cultural knowledge construct.

4.1 Limitations

The small sample size was a limitation of this study, and the cost of the instrument limited participant recruitment, due to limited funding. A small sample size increases the risk of type II error or failing to reject a false null hypothesis, which was not the case for the primary aim of this study. Nevertheless, the small sample size still limited the QI inferences that can be drawn from the findings because there is potential response bias and the group completing the study may not represent all APPs in the institution or APPs who attended the training.

It is unclear whether the study population had a higher cultural desire than the APP population at this institution and APPs in general. However, this researcher and others have noted that participants seem to have unusually high cultural desire competency scores because scores for this construct are higher than the other constructs. This may be a limitation of the current QI work and future studies. However, the questions it raises can be used to strengthen future work. More research is needed to understand a larger group's cultural desire. Questions raised by this QI project findings include: How might nurse leaders leverage a group with a high cultural desire to cause institutional change? Alternatively, how might QI efforts better reach and understand those with lower cultural desire? This area is ripe for further study.

Participant drop-out was a challenge. There were 32 respondents who initially registered for the study. Some initial registrants did not complete the consent or study questionnaires, and others did not attend the CCT lecture; therefore, they were not eligible to participate in the study. Unfortunately, several participants attended the lecture but either did

not complete it or incorrectly completed the post-test such that it could not be linked to the pre-test. A total of 18 total participants (56% of initially registered) correctly registered, consented to participate in the study, attended the lecture, and completed the pre/post-test. The drop-out rate may be unrelated to the study. For example, the APPs might be busy in their practice setting and/or experiencing research fatigue since this academic medical center environment has many requests to participate in research. However, there is a risk of response bias that limits the applicability of the findings. Future QI efforts may involve non-paired testing of participants. However, pairing in this QI project was essential to notify the individual of their results which was a project strength, allowing participants to grow personally even further post-training. This connected well with the model's assertions that cultural competency growth is a continual process. Moreover, all participants elected to receive their results, indicating its importance. The balance between retaining participants and the strength of reporting results to the individuals should be evaluated in future efforts.

Acknowledging these limitations, meaningful inferences can be drawn from this work that will strengthen future similar projects within this health system and beyond. The instrument used to measure change is reliable. This found a Cronbach's alpha coefficient of .84, which is similar to other studies using the IAPCC-R that have an average reliability coefficient Cronbach alpha of .81.[31] The CCT created for this study was based on theory and research evidence and reviewed by experts in the field. Despite a small sample size, statistical significance and practically important changes were seen post-training. This QI work raises important questions for future research and improvement efforts.

4.2 Implications for professional nursing development

The findings of this study support other evidence indicating that education and interventions aimed at healthcare providers may benefit cultural competency growth. Thus, CCT is recommended for healthcare workers. This study did not include a post-intervention content evaluation, and an evaluation of training content is recommended for future studies. The 'Process of Cultural Competence and Delivery of Healthcare Services model' and related resources provided a strong structure for this work. These resources (summarized in the methods section) are recommended for future studies and QI work.

The data on this study shows a level of culturally aware APPs who have a high cultural desire to learn more and show great promise when given the tools to effect change. Future studies involving cultural competency assessment, intervention, and post-intervention evaluation should include resources for learning in each construct of the 'Process of Cultural Competence in the Delivery of Healthcare Services model', as this study did.[23] The participant group was small and potentially more eager to learn about cultural competence than non-participants. Future studies could seek out participants at various levels in their desire for cultural competence growth. The IAPCC-R tool could enable such a study.[24]

This study did not evaluate cultural competency over time. Future studies should evaluate cultural competency development over time. CCT might also be delivered longitudinally to better align with the model. A way to do this would be to have a training series. Alpers and Hanssen[32] recommend a formal education followed by regular in-service education in the workplace because competency is necessary to provide healthcare services to ethnic minorities.[33]

Based on the study findings, this researcher calls for more education and interventions aimed at healthcare workers so they may fairly serve their patient population. Institutions aiming to improve provider cultural competency and subsequent patient outcomes should consider implementing similar training. Training following the reported format may be particularly relevant for institutions like the implementation site where racial issues are part of the cultural competency concern. Leaders can implement these study findings by:

- Implementing evidence-based CCT as professional development in their practice settings
- Studying individualizing professional development training to the results of the specific constructs of CCT
- Studying CCT effects over time

Conclusion Implicit bias and racial health disparities are continued problems in healthcare. There is growing evidence that this implicit bias can cause patient outcomes to differ negatively for minority patients. Cultural competency is one continuing education strategy used to combat these issues to address racial health disparities. This needs to be addressed because, by 2060, the minority population is projected to rise to 56% of the total population.[34] Groups identifying as biracial or multi-racial are projected to triple, and nurse leaders need to ensure they support and effectively care for minority populations more than ever.[35] When HCPs provide culturally competent care, this supports patient outcomes and health equity and is important in reducing racial health disparities. Although the participants in this project were all APPs, all healthcare workers can use this CCT training. Lack of cultural awareness can decrease the number of individuals from minority communities seeking healthcare services, contributing to health disparity. A first step in combating racial health disparities is recognizing that racial bias exists. Then, and only then, can healthcare workers recognize that

this bias may affect day-to-day medical decision-making and patient interactions.

CONFLICTS OF INTEREST DISCLOSURE

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

INFORMED CONSENT

Obtained.

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DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to privacy or ethical restrictions.

DATA SHARING STATEMENT

No additional data are available.

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