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of Diverse Students for Careers in the Health Professions

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All manuscripts should conform to the *Publication Manual of the American Psychological Association* (6th ed.) with respect to format, style, grammar, punctuation, mechanics, and citation. They should be prepared for blind review. Authors are asked to submit an electronic version of manuscripts in Microsoft Word or ASCII text. Manuscripts may be submitted via email to oonsomu@gmail.com, or via mail to:

Elijah Onsomu, PhD, MPH, MS Managing Editor
Journal of Best Practices in Health Professions Diversity
School of Health Sciences
241 F.L. Atkins Building
Winston-Salem State University
601 S. Martin Luther King Jr. Drive
Winston-Salem, NC 27110

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Health Professionals of the Future: Change Begets Change

The Tuskegee Experiment—a cruel and unethical medical study conducted from 1932 to 1972 on nearly 400 African American men, the racist forced sterilization practices of the Eugenics Board of North Carolina from 1933 to 1977, and other stories of healthcare inequalities passed on from generation to generation have resulted in a catastrophic distrust of healthcare providers throughout minority communities.
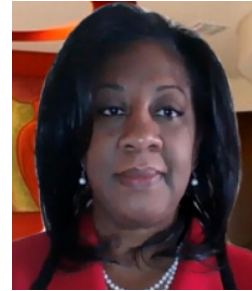
Despite many efforts to break down the negative connotations, mistrust is more pronounced than ever as evidenced by the widespread hesitancy to take the vaccine to prevent coronavirus. African Americans' previous experiences are exacerbated by the lack of African American and other minority providers in healthcare environments.

Consequently, healthcare system employers must work in concert with academic health science departments to increase diversity in the healthcare workforce. Strategies to attract a diverse workforce are numerous, but intentional efforts to retain these invaluable individual resources must follow on. Billions of dollars are spent annually on diversity education programs; institutions sometimes use multiday workshops to enhance employees and leaders' knowledge, skills, and attitude. When front-line leaders are immersed in training with a diversity, equity, and inclusion (DEI) framework, they are better prepared to engage their team members and become cultural change agents. This collaborative, interprofessional practice helps to build a culturally competent healthcare system.

Irrespective of strategy used, concerted efforts to embrace diversity, equity, and inclusion in the workplace have increased recruitment and retention of underrepresented health professionals. Providers of care who mirror the community will earn trust, increasing the likelihood that those in need will reach out for preventative as well as acute care services.

Efforts to maintain a continuous pipeline of diverse healthcare professionals in nursing and allied health programs are also essential to combating health inequities.

Academic settings for healthcare professionals must establish priorities to increase the enrollment of diverse student populations and be intentional in creating an inclusive learning environment to help to retain those students. One approach to promote diversity in health education uses open-space technology to engage participants in dialogue with a community of diverse learners, sharing their experiences and building their knowledge.

Being intentional in integrating the principles of DEI and documenting healthcare disparities and the social determinants of health in the curriculum will improve learning outcomes related to diversity concepts and result in program completers who enter the workforce with a health-equity mindset. Such initiatives in higher education enhance the pipeline to increase the percentage of underrepresented people of color who have the competencies needed to make a difference in the healthcare workforce.

In summary, fear and mistrust are common barriers to seeking and receiving healthcare for many African Americans and Latinx in underserved communities. This barrier must be broken in order to eliminate healthcare disparities and improve health outcomes for all. Employers and higher education health science program leaders can no longer treat their employees and students monolithically. Valuing diversity and being inclusive will help to ensure adequate representation of black and brown faces in the healthcare workforce. Only then can we build trust relationships between the community and healthcare professionals and eliminate health inequities.

Leslee Battle, EdD

Leslee Battle

Guest Editor

Funding as a Vital Component of Workforce Development

How important is funding in the field of workforce development? I would venture to say it is the gas that fuels every idea, initiative, and educational program. The economic and sociopolitical theologies that dominate governmental policies and perspectives certainly affect our efforts. Matherlee (2004) does a great job describing "The Role of Public Financing in Improving Diversity in the Health Professions." This book chapter will soon reach its decade mark. How have we utilized these resources to our advantage, and do the challenges outlined in this article remain? While some progress has been made, centralizing access to funding for agencies that can have the most impact remains intermittent.

Funding provided for workforce development comes from both public and private sources. Both can have a profound impact on program development and implementation. For underrepresented minorities, programs focused on scholarships, professional development, and academic support continue to be hallmarks of best practices. The National Institutes of Health and the Health Resources and Services Administration (HRSA) have led efforts to providing resources and developing a database to access available public sources of funding. However, the intricacies of deadlines and reviews while navigating d the politics of institutional awards are rarely discussed. How are we ensuring that equitable practices are maintained, and how do we, as leaders in the field, advocate for institutions that have shown the most promise in preparing the next generation of diverse clinicians, public health specialists, and healthcare educators? Transparency and improved clarity of available resources are flagged in Matherlee's review. The lack of centralization, coordination, and collaboration among public funding entities involved in initiatives that directly or indirectly affect underrepresented minorities has a chilling effect on opportunities for individuals interested in, training for, or entering medical, dental, nursing, psychology, and other health careers" (Matherlee, 2004).

When reviewing private sources of funding, networks and associations with key stakeholders can lead to focused and sustained access to resources. In the last two years, corporate entities have exponentially increased their efforts to recognize the value of certain institutions and to train students underrepresented in the biomedical sciences and numerous healthcare fields. In 2016, *Diverse Issues in Higher Education* highlighted that these sources of funding were becoming more available to Historically Black Colleges and Universities (HBCUs): "The leadership of these corporations is realizing that HBCUs are key resources in diversifying the STEM playing field" (Thompson & Taylor, 2016). Similarly, Cheng (2021) notes that since the awakening of the Black

Lives Matter movement, more companies, large and small, are more committed to hiring and providing financial support for HBCU students. If companies are committed, they can be an excellent source of funding for workforce development initiatives. However, colleges and universities need well-staffed institutional advancement offices that effectively leverage these opportunities. They also should ensure equitable benefits for both the institution and the corporation. Leveraging sustained funding, regardless of corporate standing, administrative changes, and company mission can be a challenge, but can be achieved.

This issue of the *Journal of Best Practices in Health Professions Diversity* highlights many examples of excellence in healthcare workforce development. I can only wonder what the outcome of each initiative described would be if more funding were available. Let us continue to voice our concerns, share information widely about funding sources, and advocate for more resources from both public agencies and private corporations.

Rosalind Gregory-Bass, MD, MS

NAMME President

Diversifying Healthcare Fields by Enhancing Pipeline Initiatives

Anika Daniels-Osaze[1], EdD, MA, MPH; Mary Valmont[2], PhD; Hector Gonzalez[3]

Author Affiliations: [1]Diversity Education and Research, College of Medicine, SUNY Downstate Health Sciences University, Brooklyn, New York; [2]Arthur Ashe Institute for Urban Health (AAIUH) Brooklyn, New York

Corresponding Author: Anika Daniels-Osaze1, Diversity Education and Research, College of Medicine, SUNY Downstate Health Sciences University, 450 Clarkson Avenue, MSC 1186, Brooklyn, NY, 11203 (*anika.daniels-osaze@downstate.edu*)

ABSTRACT

Diversifying the healthcare workforce can reduce health disparities, yet African American and Latinx providers are underrepresented in almost every field. Barriers begin as early as elementary school. With little exposure to, and preparation in, science, some students lose interest. To address the chronic shortage of underrepresented populations in the healthcare workforce, the Office of Diversity Education and Research at SUNY Downstate and the Arthur Ashe Institute for Urban Health (AAIUH) provide a pipeline program that engages disadvantaged middle and high school students in STEM activities. Enhancing their resources can increase their preparation for entry into the health professions, ultimately reducing health disparities.

Keywords: ▪ Health Professions ▪ High School Students ▪ Pipeline Programs ▪ STEM ▪ Underrepresented Students

INTRODUCTION

Public Health Significance

Healthcare disparities and inequities reflect the "unfair and avoidable differences" in health out-comes within and between groups (Pomeranz & Horvath, 2017). Disparities refer to differences in access, services, and resources, while inequities refer to the prejudicial manner in which they are provided. Although healthcare disparities tend to affect specific groups, the impact can affect everyone. As we have seen during the Covid-19 epidemic, those who receive a lower quality of healthcare and have less access to a vaccine become infected and die at higher rates. The infection spreads rampantly in communities of color, low-income communities, and immigrant communities (Kantamneni, 2020) but is not contained there—it circulates far beyond. Lack of access to resources for underrepresented populations impairs the health and healthcare of all communities.

Although gender, sexual orientation, age, spiritual affiliation, ability, and veteran affiliation can also affect healthcare, this paper focuses on the disparate inclusion of people of African descent and Latino heritage in medicine. Since the dawn of colonialism and enslavement, they have been subjected to negative messages about themselves and their history to the extent that some have attempted to avoid learning about and embracing history altogether. Race and ethnicity are social constructs that have an impact, not just on self-esteem, but on race esteem. They are influenced by self-perception and societal messages (Baciu, et al., 2017). These messages pervade the educational system and popular media. Without race esteem, self-esteem is challenging; the two are intrinsically tied. A prominent author, attorney, and Ghanaian chief, Nana Kwa D. Whitaker (personal communication, August 5, 2006) frequently recites a proverb to explain the conundrum:

> What you do for yourself depends on what you think of yourself.
> What you think of yourself depends on what you know of yourself.
> And what you know of yourself depends on what you have been told.

While studies have shown that African Americans tend to have higher self-esteem than other groups (Lige et al., 2016) not much is known about the impact of race esteem. We do know that US society is distorted by negative perceptions of African American and Latino populations (Okeke-Adeyanju et al., 2014). These negative messages often contribute to healthcare disparities.

Healthcare disparity is manifest in many ways. For example, African American patients are re-ferred to specialists less often than white patients (Groman & Ginsberg, 2004). African American and Latino patients receive less preventive care, such as mammograms and influenza vaccines, and are rarely offered expensive or advanced technological treatments for critical diseases and injuries (Groman & Ginsberg, 2004). African American patients are less likely to be offered cardiovascular

procedures, kidney and bone-marrow transplants, and orthopedic procedures than their white counterparts. They receive less rigorous prostate cancer and HIV treatments and are less likely to be admitted to the hospital for chest pain or prescribed medications for treatment of depression than white patients (Grollman, 2014).

These disparities can be resolved, if the right measures are taken. Part of the solution is diversifying the field of healthcare (Glazer et al., 2018). Studies have shown that healthcare providers from underrepresented backgrounds are more likely to practice in underserved communities, where the patients look like they do (AAMC, 2019; Valentine et al., 2016) and to provide culturally competent care (HRSA, 2006). Patient satisfaction increases, and health outcomes improve due to the positive rapport between patient and provider (Cooper & Powe, 2004). Improved access to quality healthcare improves the overall public health of underserved communities and helps to reduce health disparities (CDC, 2019).

Review of the Literature

Achieving Health Equity. To reduce healthcare disparities and achieve health equity, we must understand the role social determinants play. Health equity is achieved when all people, regardless of background or personal resources, are provided optimal care (Dragan et al., 2015). Social determinants of health and quality-of-life risks and outcomes are the conditions under which people live, learn, work, play, and/ or worship and are influenced by financial stability, educational advantage, institutional racism, and/ or discrimination (Dragan et al., 2015; Dunker & Benjamin, 2020). According to the 2018 New York City Community Health Profiles, 16-28% of residents over 25 years old in north and central Brooklyn have less than a high school education. In these communities, a third of residents live 100% below the federal poverty line (FPL); unemployment rates are as high as 16%; and up to 18% are uninsured (HRSA, 2020). Over 90% are of African descent or Latino heritage, and 51% are immigrants.

Table 1: Social determinants of health in north and central communities in Brooklyn compared to NYC, 2018 (HRSA, 2020).

	Brownsville	*Bedford Stuyvesant*	*East NY*	*Crown Heights*	*NYC*
Income below FPL	37%	23%	30%	21%	21%
Unemployment	16%	13%	10%	9%	11%
High school education	28%	21%	23%	16%	20%
No health insurance	18%	11%	7%	12%	12%

Table 2: Incidence of health conditions in north and central Brooklyn compared to NYC, 2018 (HRSA, 2020).

	Brownsville	Bedford Stuyvesant	East Flatbush	Crown Heights	NYC
Obesity	41%	29%	34%	26%	24%
Diabetes	13%	13%	15%	13%	11%
Hypertension	33%	34%	36%	33%	28%
New HIV cases/100,000	67.4%	55.1%	35.6%	44.3%	24%
Infant mortality/1,000	4.9%	5.7%	7.1%	5.4%	4.4%

Policy can impair healthcare. Over the past 30 years, discriminatory practices in New York City have redistributed resources from hospitals serving communities of color to more affluent white communities. Hospital rates were deregulated; regional health planning agencies were closed; and Indigent Care Pool funds drained from poor to wealthier neighborhoods (Martiniano et al., 2018). Look at the distribution of federal Covid-19 funding: the formula was based on Medicare payment history, which disproportionately favors wealthier over poorer neighborhoods (Martiniano et al., 2018). The reduction of healthcare disparities will require, not only the creation of equitable health policy, but appropriate implementation.

As Table 2 shows, communities in north and central Brooklyn have higher rates of obesity, diabetes, hypertension, new HIV cases, and infant mortality than New York City as a whole, reflecting the poor health of communities with high numbers of people of African descent and Latino heritage.

According to environmental and health data reported on the official website of the City of New York (NYC.gov), the rates of adult and child ER visits due to asthma in north and central Brooklyn are much higher than those reported for all of New York City (Martiniano et al., 2018). Table 3 demonstrates that the incidence of ER visits due to asthma is exacerbated by the outdoor air quality in these neighborhoods, which are predominantly inhabited by people of African descent and Latino heritage (Martiniano et al., 2018).

North and central Brooklyn have disproportionate health needs compared to the rest of New York City and are designated Health Professional Shortage Areas (HPSAs) because they lack sufficient primary medical care to meet them (HRSA, 2020). In 2017, Brooklyn had 94 primary care physicians per 100,000 residents compared to 253.7 in Manhattan. In the Need for Care survey, a community based participatory research (CBPR) approach conducted by the Brooklyn Perinatal Network used to capture residents' perspectives on their health care needs (85% of respondents

Table 3: Environmental health hazards (Martiniano et al., 2018).

	Bedford Stuyvesant-Crown Heights	*East Flatbush-Flatbush*	*NYC*
Asthma-related ER visits of children aged 5 to 17 years old per 10,000 (2016)	373.4	261.5	215.3
Asthma-related ER visits among adults aged 18 years and older per 10,000 (2016)	209.2	123.7	99.1
Asthma ER visits of children under 18 attributable to outdoor air quality per 100,000: Ozone (O3) (2015-2016)	173.9	119.3	101.9
Asthma ER visits of adults over 18 attributable to outdoor air quality per 100,000: Ozone (O3) (2015-2016)	100.2	62.8	48.3

said receiving care in the neighborhood where they live would be most convenient for them, but less than 40% had all of their visits in their neighborhoods (HRSA, 2020).

   Pipeline Programs. According to the Association of American Medical Colleges (AAMC), health equity can be advanced through pipeline initiatives that develop a diverse physician workforce (Bergeisson & Cantor, 1999; Smith et al., 2009). Pipeline programs provide resources that can prepare underrepresented and disadvantaged students at different educational levels for entry into healthcare fields and assist them in becoming more competitive during the application process. Services range from standardized test preparation, clinical shadowing opportunities, research placements, advanced science courses, pre-health advisement, mentoring, professional workshops, and informational seminars. These programs attempt to address "opportunity gaps" for underrepresented and disadvantaged students (Smith et al., 2009), and data show that they increase the likelihood of their enrollment in health professional schools (Bergeisson & Cantor, 1999; Cantor, 1998). Increased exposure to health-relevant science can confirm interest and contribute to informed decisionmaking and recruitment, while better preparation facilitates enrollment and retention.

   Teaching cultural competence can also reduce healthcare disparities (McElfish et al., 2017). Cultural competence is the ability of providers and organizations to meet the language, social, and cultural needs of patients (AAHC, 2015; Betancourt et al., 2002; Koh et al., 2011; PCORI, 2013). However, most pipeline programs focus on academic preparedness. Historical data show

that many African American and Latinx high school students do not have the rigorous science background necessary to succeed in pre-health majors (Bergeisson & Cantor, 1999; Cantor, 1998), although other factors play a role. This paper reports on high-achieving African American and Latinx students from high schools in Kings County, Brooklyn, who have an interest in STEM careers but need access, exposure, and proper advisement.

METHODS

The Arthur Ashe Institute for Urban Health (AAIUH) is a community-based public health organization founded in 1992 and housed on the campus of SUNY Downstate Health Sciences University. Its mission is to create a more diverse and inclusive healthcare workforce through culturally relevant programming, community-based participatory research, and health professions education. In 1994, it developed the Heath Science Academy (HSA). This three-year pipeline program provides academic enrichment and exposure to over 180 10th-12th grade students attending 12 partner high schools. It includes a non-cognitive skills component that assists students in preparing for health careers, primarily in medicine. HSA students are co-enrolled in the Health Careers Opportunity Program (HCOP), sponsored by the US Human Resources and Services Administration (HRSA), and participate in the HCOP College Preparatory Initiative (HCPI) during the summer. This federal grant is administered by the SUNY Downstate College of Medicine Office of Diversity Education and Research.

Students in the HSA primarily attend high schools in north and central Brooklyn, where healthcare workforce diversity does not match that of the population served. As mentioned, over 90% of residents in these communities are of African descent or Latinx heritage, and 51% are immigrants.

During Spring 2020, HSA sophomores, juniors, and seniors participated in a bi-weekly professional development workshop series geared toward preparing them for the college application process and internship, research, and financial aid opportunities. These workshops offered tangible skills to help them succeed in high school and college, increasing their chances of majoring in STEM and entering a health professions field. Topics included transitioning to the college environment, developing a research project, preparing a strong STEM application, mastering financial literacy, and striving for cultural competence in the health professions.

At the end of each session, students were asked to complete surveys assessing their overall satisfaction with the session; helpfulness of content for college preparation; readiness to transition to college; willingness to attend future workshops; and willingness to recommend the program to others. From the 108 respondents, 122 responses were recorded based on aggregate data. The data is based on responses to survey questions regarding more than one workshop which led to multiple responses.

Table 4: Demographics of the Health Science Academy (HSA) n=181

Study Characteristics			
Gender	Male	39	21.55%
	Female	142	78.45%
Race	Black	147	81.22%
	White	12	6.63%
	Asian	16	8.84%
	Other[1]	6	3.31%
Ethnicity	Hispanic/Latinx	15	8.29%
	Non-Hispanic/Latinx	166	91.71%
Student's Place of Birth	United States of America	189	82.32%
	Caribbean	18	9.94%
	Other Region	14	7.73%
Citizenship	US citizens	155	85.64%
	Non-US citizens[2]	26	14.36%
Parent's Primary Language	English	113	62.43%
	French/Creole	25	13.81%
	Other Language	43	23.76%
Parent's Place of Birth	United States of America	45	24.86%
	Caribbean	96	53.04%
	Other Region	40	22.10%

1. Other includes American Indian/Alaska Native and persons who identified their race as Hispanic.

2. Non-US citizens includes permanent residents.

RESULTS

When asked if the content presented during the program was helpful in preparing for college, 60.66% responded that it was very helpful, and another 37.70% that it was helpful. Out of the total 122 responses, 98.36% agreed the content was helpful.

When asked if the content presented made the participants more prepared to transition to college, 44.26% agreed it was helpful, and another 45.08% agreed it was somewhat helpful. Out of the total 122 responses, 89.34% stated that participants felt more prepared.
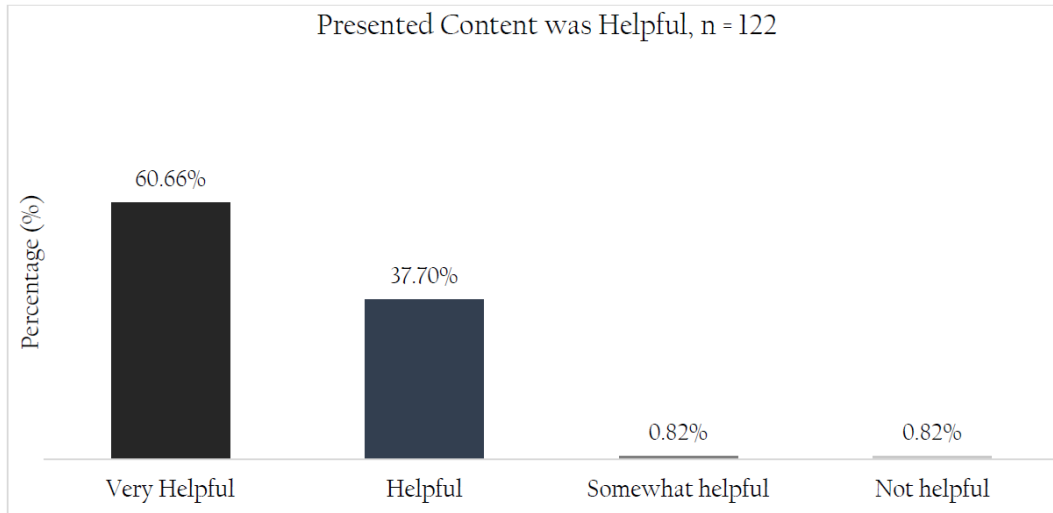
Figure 1: How helpful was the content covered in preparation for college?
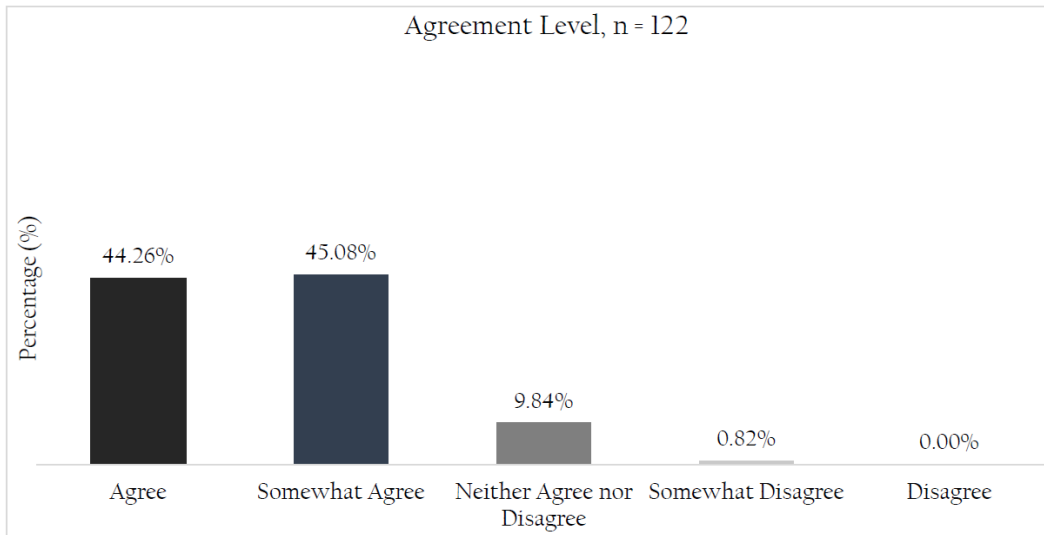
Figure 2: Because of what I learned in this workshop, I am more ready to transition to college.

Figure 3: What is your overall satisfaction with the College Preparatory Workshop?
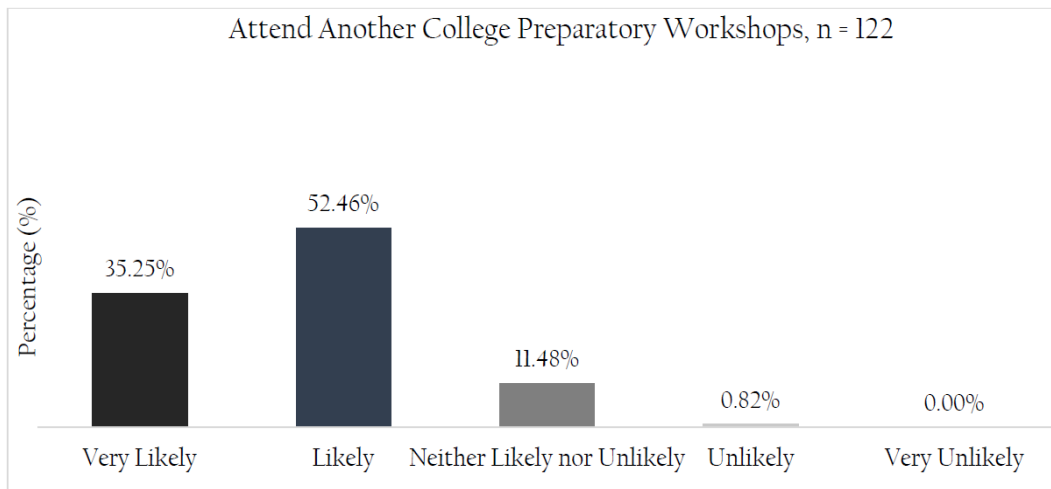
Figure 4: How likely are you to attend another College Preparatory Workshop?

Figure 5: Would you recommend this workshop to others?

When asked how satisfied the participants were overall, 56.56% felt very satisfied, and another 37.70% felt the program was helpful. Out of the total 122 responses, 94.26% expressed satisfaction.

When asked if they would attend another college preparatory workshop, 35.25% said it was very likely, and another 52.46% said it was likely. Of the total 122 responses, 87.71% expressed willingness to attend future workshops.

When asked if participants would recommend these workshops to others, 100% said yes, which demonstrates the program's effectiveness.

DISCUSSION

The goal of this study was to provide workshops to underrepresented students participating in a pipeline program designed to prepare them for careers in the health professions. Results show that participants benefitted from the additional resources, and most will use them to pursue healthcare careers.

These findings are consistent with the current literature. Pipeline programs are critical for

increasing the number of underrepresented students who are prepared to enter college and pursue STEM and healthcare careers (Smith et al., 2009). As diversity in the health professions increases, health equity will advance (AAHC, 2015).

Strengths and Limitations

The strengths of this study include the robust set of resources and articles related to the topic and the availability of data from the AAIUH program tied to survey evaluations. The strong relationship between the AAIUH and STEM program management, supported by the Office of Diversity and Research, allows continued tracking of students who participate in pipeline programs.

Study limitations include the period of interaction, which was only 4 months, preventing the gathering of extensive data on the participants' future academic and professional success. A longitudinal study of at least 4-5 years would be necessary to gather career data. Since HSA participants are already high achievers who are highly motivated to enter the health professions, program effectiveness should be tested with less motivated participants of lower academic standing.

Implications for Future Research

Recommendations for future studies include tracking the current participants to determine if they select STEM majors in college, graduate, apply to health professions schools, and eventually enter health professions; and studying underrepresented students who do not have the same academic background in STEM subjects but are still interested in STEM and health careers to determine if the workshops help them to advance. Investigators might also compare the success rate of entry into a health professions field between those who attending the professional development workshops and those who did not attend the workshops.

REFERENCES

Association of Academic Health Centers (AAHC). (2015). *Academic health centers and the social determinants of health: Challenges & barriers, responses & solutions*. http://wherehealthbegins.org/pdf/AAHC-SDOH-Report-Final.pdf

Association of American Medical Colleges (AAMC). (2016, November). *Policy priorities to improve the nation's health from America's medical schools and teaching hospitals*. https://www.aamc.org/system/files/c/2/472838-policy-priorities-improve-nations-health.pdf

Association of American Medical Colleges (AAMC). (2019). *Diversity in the physician workforce: Facts & figures 2019*. https://www.aamc.org/data-reports/workforce/report/diversity-medicine-facts-and-figures-2019

Baciu, A., Negussie, Y., Geller, A., & Weinstein, J. N. (Eds.). (2017, January). *Communities in ac-tion: Pathways to health equity*. National Academies Press. www.ncbi.nlm.nih.gov/books/NBK425848

Bergeisson, L., & Cantor, J. C. (1999). The minority medical education program. In S. L. Isaacs & J. Knickman (Eds.), *To improve health and health care 2000: The Robert Wood Johnson Foun-dation anthology*. JosseyBass.

Betancourt, J. R., Green, A. R., & Carrillo, J. E. (2002). *Cultural competence in health care: Emerging frameworks and practical approaches*. New York: Commonwealth Fund. https://www.commonwealthfund.org/publications/fund-reports/2002/oct/cultural-competence-health-care-emerging-frameworks-and

Cantor, J. C. (1998). Effect of an intensive educational program for minority college students and recent graduates on the probability of acceptance to medical school. *JAMA, 280*(9), 772. https://doi.org/10.1001/jama.280.9.772

Centers for Disease Control and Prevention (CDC). (2019, December 19). *NCHHSTP [National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention] social determinants of health: Frequently asked questions*. https://www.cdc.gov/nchhstp/socialdeterminants/faq.html

Cooper, L. A., & Powe, N. R. (2004). *Disparities in patient experiences, health care processes, and outcomes: The role of patient-provider racial, ethnic, and language concordance*. Commonwealth Fund. http://resource.nlm.nih.gov/101669869

Cowan Pitre, C., & Pitre, P. (2009). Increasing underrepresented high school students' college transitions and achievements: TRIO educational opportunity programs. *NASSP Bulletin, 93*(2), 96-110. https://doi.org/10.1177/0192636509340691

D. Whittaker (personal communication, August 5, 2006)

Dragan, K. L., King, L., Hinterland, K., & Gwynn, R. C. (2015). *2015 New York City community health profiles atlas*. https://www1.nyc.gov/site/doh/data/data-publications/profiles.page#bk

Dunker, A., & Benjamin, E. R. (2020). *How structural inequalities in New York's health care system exacerbate healthcare disparities during the COVID-19 pandemic: A call for equitable reform*.Com-munity Service Society. https://smhttp-ssl-58547.nexcesscdn.net/nycss/images/uploads/pubs/Covid_Healthcare_V1.pdf

Glazer, G., Tobias, B., & Mentzel, T. (2018). Increasing healthcare workforce diversity: Urban universities as catalysts for change. *Journal of Professional Nursing, 34*(4), 239-244. https://doi.org/10.1016/j.profnurs.2017.11.009

Grollman, E. A. (2014). Multiple disadvantaged statuses and health: The role of multiple forms of discrimination. *Journal of Health and Social Behavior, 55*(1), 3-19. https://doi.org/10.1177/0022146514521215

Groman, R., & Ginsberg, J. (2004). Racial and ethnic disparities in health care: A position paper of the American College of Physicians. *Annals of Internal Medicine, 141*(3), 226-232. https://doi.org/10.7326/0003-4819-141-3-200408030-00015

Health Resources and Services Administration (HRSA) (2006). *The rationale for diversity in the health professions: A review of the evidence*. https://docplayer.net/255577-The-rationale-for-diversity-in-the-health-professions-a-review-of-the-evidence.html

Health Resources and Services Administration (HRSA). (2020). *Designated health professional shortage areas statistics*. https://data.hrsa.gov/topics/health-workforce/shortage-areas

Kantamneni, N. (2020). The impact of the COVID-19 pandemic on marginalized populations in the United States: A research agenda. *Journal of Vocational Behavior, 119*, 103439. https://doi.org/10.1016/j.jvb.2020.103439

Koh, H.K., Graham, G., & Glied, S. A. (2011). Reducing racial and ethnic disparities: The action plan from the Department of Health and Human Services. *Health Affairs; 30*(10), 1822-1818. https://doi.org/10.1377/hlthaff.2011.0673

Lige, Q. M., Peteet, B. J., & Brown, C. M. (2016). Racial identity, self-esteem, and the impostor phenomenon among African American college students. *Journal of Black Psychology, 43*(4), 345 – 357. https://doi.org/10.1177/0095798416648787

Martiniano, R., Krohmal, R., Boyd, L., Liu, Y., Harun, N., Harasta, E., Wang, S., & Moore, J. (2018, March). *The health care workforce in New York: Trends in the supply of and demand for health workers*. http://nyachnyc.org/wp-content/uploads/2018/04/CHWS-The-HC-Workforce-in-NY-2018.pdf

McElfish, P. A., Moore, R., Buron, B., Hudson, J., Long, C. R., Purvis, R. S., Schultz, T. K., Rowland, B., & Warmack, T. S. (2017). Integrating interprofessional education and cultural competency training to address healthcare disparities. *Teaching and Learning in Medicine, 30*(2), 213-222. https://doi.org/10.1080/10401334.2017.1365717

Okeke-Adeyanju, N., Taylor, L. C., Craig, A. B., Smith, R. E., Thomas, A., Boyle, A. E., & DeRosier, M. E. (2014). Celebrating the strengths of black youth: Increasing self-esteem and implications for prevention. *Journal of Primary Prevention, 35*(5), 357-369. https://doi.org/10.1007/s10935-014-0356-1

Patient-Centered Outcomes Research Institute (PCORI). Board of Governors. (2013). *Strategic plan. Washington, DC: Patient-Centered Outcomes Research Institute*. https://www.pcori.org/sites/default/files/PCORI-Strategic-Plan.pdf

Pomeranz, H., & Horvath, T. (2017). Promoting diversity to eliminate healthcare disparities. *Journal of Physician Assistant Education*, *28*(Supplement 1), S43-S48 https://doi.org/10.1097/jpa.0000000000000155

Smith, S. G., Nsiah-Kumi, P. A., Jones, P. R., & Pamies, R. J. (2009). Pipeline programs in the health professions. Part 1: Preserving diversity and reducing healthcare disparities. *Journal of the National Medical Association, 101*(9), 836-851. https://doi.org/10.1016/s0027-9684(15)31030-0

Valentine, P., Wynn, J., & McLean, D. (2016). Improving diversity in the health professions. *North Carolina Medical Journal, 77*(2), 137-140. https://doi.org/10.18043/ncm.77.2.137

Impact of Diversity and Inclusion Education on Team Member Engagement

David Henao[1], MD, MBA; Chere Gregory[1], MD, MHS; Yvonne Dixon[1], MSN, MHA, RN

Author Affiliations: [1]Novant Health, 2085 Frontis Plaza Blvd., Winston-Salem, North Carolina

Corresponding Author: David Henao, Novant Health, 2085 Frontis Plaza Blvd., 2nd Floor, Winston-Salem, NC 27103 (*dhenao@novanthealth.org*)

ABSTRACT

US organizations spend an estimated $8 billion a year on diversity education as part of their strategic initiatives. During the last 40 years, the paradigm of diversity and inclusion (D&I) has turned 180 degrees, from assuring compliance with federal government regulations to understanding D&I is linked to business success. Novant Health, an 18-hospital system with 36,000 employees, ensures that both patients and team members are cared for, and work in spaces that fully embrace and honor their individuality. Education helps the system embed D&I into its culture. Novant Health compared its two-day diversity education program for leaders to its one-day session for employees. Results and observations are summarized here.

Keywords: ▪ Diversity ▪ Education ▪ Engagement ▪ Inclusion

INTRODUCTION

US organizations spend an estimated $8 billion a year on diversity education (McKinsey, 2017), now a common part of their strategic initiatives. Shifting demographics mean organizations must find effective, culturally appropriate ways to meet the needs of clients and employees. By 2050, half of the US population will be of non-European origin (Day, 1996), and about 4.5% currently identify as lesbian, gay, bisexual, transgender/transsexual, or queer/questioning (Newport, 2018).

Novant Health (NH), an 18-hospital system with 36,000 employees, is committed to diversity and inclusion (D&I) education for both leaders and employees.

D&I educational strategies address perceptual filters, including prejudice, stereotyping, bias in hiring practices, employee well-being, and team-member satisfaction. Distinct programs aim to "facilitate positive inter-group interactions, reducing prejudice and discrimination, and enhancing the skills, knowledge, and motivation of people to interact with diverse others" (Pendry et al., 2007).

The evidence of positive impact is far from conclusive (Anand & Winters, 2008; Mor Barak et al., 2016). Some researchers argue that diversity education by itself cannot accomplish much (Bendick et al., 2001). Others have demonstrated its beneficial effects on learning outcomes (Kulik & Roberson, 2008). However, few have explored the conditions under which diversity education is most beneficial (Kalinoski et al., 2012), possibly because it addresses the way individuals subjectively view the world (Hanover & Cellar, 1998; Law, 1998). Diversity education tends to be more emotionally charged than other types of training (Alderfer, 1992; Paluck, 2006) because participants already have well-formed opinions.

Despite the lack of clear positive outcomes, diversity education has exploded in the corporate world over the last forty years. After an initial emphasis on compliance with federal rules, the paradigm turned 180 degrees to awareness of its role in business competitiveness (Thomas, 1990). The focus became heightening awareness of groups' different needs. The term *inclusion*, intentionally viewing human differences as strengths, gained popularity as a necessary extension of the concept of diversity.

Many leaders expect a high return on investment for this education, but organizations rarely conduct in-depth evaluations of their interventions (Hite & McDonald, 2006; Perry et al., 2009). Most use self-reported surveys, theorizing that changes in knowledge lead to changes in behavior. However, many observe no change in the work environment (Anand & Winters, 2008).

Several systematic reviews of the impact of diversity education programs examine different types of outcomes and show methodological problems in measuring them (Wang & Wilcox, 2006). One review cited evidence of enhanced productivity, employee performance, customer satisfaction, financial performance (Alhejji et al., 2016; Ely, 2004), and organizational commitment (Tsui et al., 1992).

Another review (Kalinoski et al., 2012) concluded that diversity education is likely to have slightly to moderately beneficial effects on affective-, cognitive-, and skill-based outcomes. Another suggested that while diversity education can have an impact on organizations, program form, content, and effectiveness can be questionable; for example, a stand-alone approach using one method of instruction focused on specific groups (Bezrukova et al., 2016). The lack of formal follow-up is a problem (Bendick et al., 2001). Except for some continuing education through emails and internal posts, employees are usually left on their own to internalize what they learn.

Diversitylnc (https://www.diversityinc.com/) compared companies deemed to have the best diversity education programs (mandatory, held for at least one day, and tied to business strategy) to other companies. Results showed a positive correlation between the best companies and retention of people of color, but not retention of women (Frankel, 2007). Citigroup has a diversity index on its employee opinion survey that measures the extent to which employees feel included and their perceptions about senior management (Anand & Winters, 2008). Scores for diversity questions have increased more than those for other topics, which Citigroup attributes, in part, to its ongoing educational commitment. Deloitte reported that it also uses the employee engagement survey to measure the effectiveness of its D&I education; 13 questions address support for diversity and consistently rate it highly (Anand & Winters, 2008).

The Novant Health strategy for diversity, inclusion, and equity is multi-prong with numerous components. One goal is to ensure Novant Health leadership demonstrates a commitment to a diverse and inclusive culture. Another goal is to increase understanding, awareness, and skill in diversity, inclusion, and equity within all levels of Novant Health. Workshops are part of Novant Health's strategic plan to embed diversity and inclusion into the organization's culture. The board of trustees and executive team endorsed and championed education through diversity and inclusion workshops. Novant Health tracks changes over time, asking employees a series of questions that assess their level of engagement with the organization in a biannual survey.

METHODS

Goals

The study's primary goal was to assess the impact of D&I workshops on team member engagement scores. The secondary goal was to assess whether the impact differed based on the length of the education and team member location and role. We hypothesized that facilities and service lines with the highest proportion of team members attending the workshops would have higher engagement scores.

Participants

The sample included 21,417 employees who completed the 2019 Team Member Engagement Survey, identifying the 5,702 who attended D&I workshops between July 2016 and December 2019. Of those, 3,885 (68%) attended during their first year with Novant Health, and the remainder enrolled after one year as requested by their leaders and as a work requirement. Out of 5,702 attendees, 1,057 were leaders (managers and above).

Workshops

In 2012, Novant Health hired an external organization to design our D&I education and to produce workshop guides and audiovisual material. The workshops were offered to 1) new team members and 2) team members who had not attended D&I workshops since the new curriculum was developed. Although the workshops are not mandatory, leaders are expected to make sure new employees complete the program.

The employees' curriculum provides the knowledge and skills to enable them to work effectively with all customers, internal and external. The workshop raises awareness of D&I as critical business priorities; the employees' role in creating a respectful workplace; and how attitudes and behaviors affect customers and colleagues. Leader education provides knowledge about managing diverse teams, creating an inclusive workplace, and serving diverse customers to enhance relationships, productivity, commitment, quality, and profit.

Employee workshops consisted of one, eight-hour, in-person experience with two co-facilitators, who presented six modules including interactive and visual learning followed by a self-assessment and call to action for commitment. All participants were required to stay for at least 80% of the class to receive credit. When team members were promoted to leadership roles, they were expected to enroll in the leaders' workshop. Again, this two eight-hour workshop with two co-facilitators consisted of seven modules of individual, group, and visual learning activities that included a self-assessment checklist for ongoing review of performance and commitment.

For both courses, topics included developing a broad awareness of D&I; understanding oneself and others; addressing diversity-related situations; creating an inclusive workplace; choosing behaviors that value D&I; setting the stage for change; and leading others through change.

Data Collection

The human resources department (HR) retains data on participation, and the Office of Voice of the Customer holds engagement scores. The study was approved by the institutional review board of Novant Health Forsyth Medical Center, and a waiver of consent was granted. The study used de-identified data, and no personal information was revealed.

Exclusions

Only hospitals in the Winston-Salem and Charlotte, NC, markets were included. Virginia hospitals and hospitals opened since 2018 were excluded from the analysis.

Statistical Analysis

The primary variables were proportion of team members and leaders who attended the D&I workshop, its location, and their service line. To determine proportion, the numerator is the number of team members and leaders who attended the workshop between July 2016 and December 2019. The denominator is the total number of new team members (employed less than two years) at that location. The primary outcome of interest was team member engagement score by location and service line for the six questions the executive board defined as drivers of D&I. All analyses were conducted using RegressIt, an Excel add-in for linear regression and multivariate data analysis, and R Project for Statistical Computing, version 3.6.3. A p-value of <0.05 was considered statistically significant. R-squared values are provided as well. Univariate regression analysis was performed to confirm the association between workshop attendance and team member engagement scores.

RESULTS

Acute Facilities

Hospitals with a higher proportion of employee workshop attendance had significantly higher scores on two team member engagement survey questions: 1) whether the organization demonstrates a commitment to D&I ($p = 0.03$); and 2) whether their ideas and suggestions were seriously considered ($p = 0.02$). Scores were not significantly higher yet trended positive on questions about valuing team members' backgrounds ($p = 0.06$), leaders' commitment to D&I ($p = 0.06$), sense of belonging ($p = 0.06$), and involvement in decisions that affect their work (0.06). For the two-day leader workshops, p values were below 0.02 for all six questions (see Table 1).

Service Lines

Service lines (e.g., orthopedics, neurology, family medicine, etc.) with higher proportions of employees and leaders attending workshops did not attain higher engagement scores. For all six questions, $p > 0.50$, and R-squared values were close to 0 (see Table 2). To look further for any potential relationship between D&I workshops and engagement scores, we assessed community medicine, which includes family medicine, internal medicine, and pediatrics, employs thousands, more than any other line, and has hundreds of clinics. Again, although we found no correlation between attendance and engagement scores, we observed that those clinics with the highest proportion of attendees tended to not have low engagement scores (see Fig. 1).

Table 1: Statistical Significance and Impact of Diversity Workshops on Engagement Scores of Acute Facility Team Members

Press Ganey Question	Team Members		Leaders	
	p-value	R^2	*p-value*	R^2
This organization values team members from different backgrounds	0.056	0.35	0.013	0.52
The person I report to demonstrates a commitment to D&I	0.058	0.34	0.009	0.55
NH demonstrates a commitment to D&I	0.028	0.43	0.011	0.53
My ideas and suggestions are seriously considered	0.02	0.47	0.011	0.53
I feel I belong in this organization	0.063	0.33	0.005	0.60
I am involved in decisions that affect my work	0.052	0.36	0.003	0.65

Questions related to D&I included in Press Ganey team member engagement survey sent to all Novant Health employees once a year

Questions were delivered by Press Ganey

P-values ≤ 0.05 are significant

Table 2: Statistical Significance and Impact of Diversity Workshops on Team Member Engagement Scores by Service Line

Press Ganey Question	Team Members		Leaders	
	p-value	R^2	*p-value*	R^2
This organization values team members from different backgrounds	0.86	0.00	0.53	0.04
The person I report to demonstrates a commitment to D&I	0.72	0.01	0.51	0.04
NH demonstrates a commitment to D&I	0.84	0.00	0.82	0.01
My ideas and suggestions are seriously considered	0.74	0.01	0.28	0.10
I feel I belong in this organization	0.89	0.00	0.55	0.03
I am involved in decisions that affect my work	0.66	0.02	0.55	0.03

Questions related to D&I included in Press Ganey team member engagement survey sent to all Novant Health employees once a year

Questions were delivered by Press Ganey

P-values ≤ 0.05 are significant
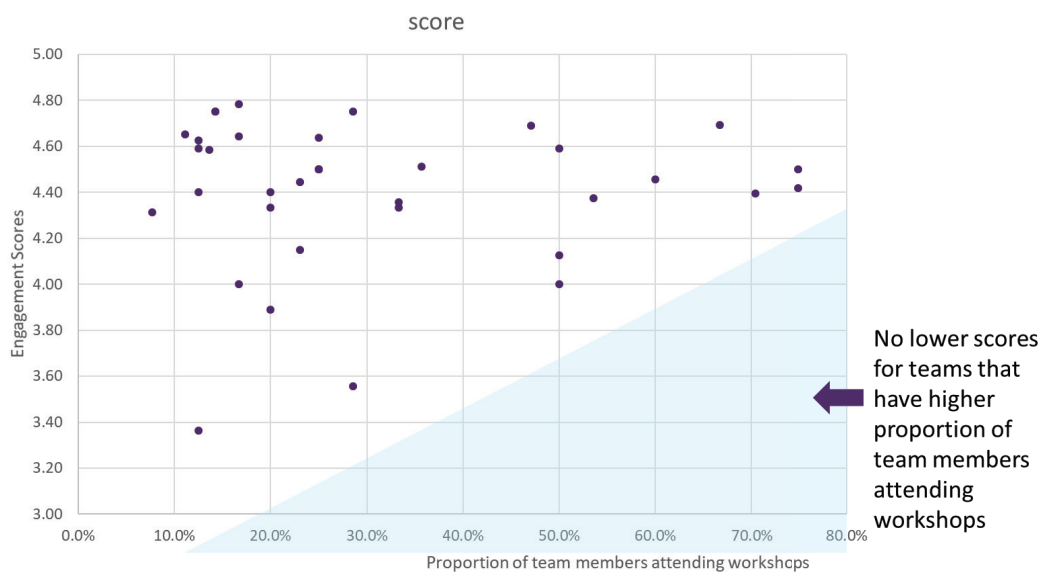
Figure 1: Engagement Scores for D&I Workshop Participants in Community Medicine

DISCUSSION

High team member engagement scores are linked to customer satisfaction (Harter, 2002). Research in both the public and private sectors has consistently shown that greater engagement improves organizational performance and outcomes, including revenue and revenue growth (Lavigna & Basso, 2020; Kompaso & Sridevi, 2010).

Citigroup found that employee perception of "feeling included in the organization" may correlate to ongoing D&I education. Deloitte used employee engagement surveys to measure the effectiveness of its D&I education (Anand & Winters, 2008). The expected outcome of this study was an association between engagement scores and workshop participation rate.

The study reported here revealed significantly higher engagement scores at hospitals where more team members attended the D&I workshops. Results may be due to these team members sharing their new knowledge and skills with others in the workplace, or hospital leaders with more D&I competency may have higher engagement scores and encourage more of their employees to attend workshops. In other words, high attendance and engagement scores may both reflect hospital leadership's commitment to D&I.

Note that leaders' attendance more closely aligned with engagement scores (p <0.01 for all

six questions) than nonleaders'. Several theories were considered. Are two-day workshops better? Would workshops for nonleaders have produced similar results if they had lasted two days?

Alternatively, should the focus be on leaders? D&I education raises engagement scores. More engaged leaders are likely to participate in D&I education and have more engaged teams. However, if so, correlations for both leaders and nonleaders should be similar and would indicate that the workshops are a good tool for educating leaders in D&I and ensuring they share newly gained skills and knowledge, thus improving team member engagement. Is educating leaders rather than team members a better investment? Even when the executive team is fully committed, employees working under a less-than-committed manager are far less likely to feel welcomed and included—and far more likely to leave (Taplett, Garcia-Alonso, Krentz, & Poulsen, 2020). In short, getting front-line leaders to support D&I should be a strategic imperative and a focus of every organization's D&I strategy. Leaders must model D&I behaviors and implement best practices rather than ignore or undermine them.

Service-line education failed to show statistically significant relationships between workshop attendance and engagement scores for both leaders and nonleaders. Attendance and increased D&I knowledge did not raise engagement scores. This finding is interesting. Service-line employees are not located in the same facility, as hospital employees are, but instead are spread out in clinics and offices across our markets. They may consider clinic administrators their most immediate role models and seldom encounter service-line leadership.

In a hospital, the president and other leaders are usually much more visible in staff meetings or through rounding. Hospitals tend to have one culture across different departments, while service lines may have different cultures, depending on location. Therefore, D&I education may be more effective in engaging employees at centralized locations sharing a distinct culture.

Finally, although we found no relationship between workshop attendance and engagement for leaders and employees of specific internal and family medicine practices, those with the highest proportions of attendees had no engagement scores below 4.2 (see Fig. 1), and those with the lowest had scores below 4.0. The absence of a linear relationship between these two variables does not exclude the possibility of a link between workshops and employee engagement. Further research should examine clinic start dates; whether the practice joined Novant Health or was an in-house start-up; and the workshop attendance of regional managers.

Implications for Practice

US organizations spend about $8 billion a year on diversity education, according to a 2017 McKinsey report. Factors assessing return on investment include engagement scores, customer satisfaction, and revenue growth. Novant Health results may not represent all organizations and industries. Its D&I workshops are designed for the healthcare industry and its culture and resulted in improved engagement scores. More engaged teams often correlate with patient satisfaction and

higher revenues. More research is needed to identify the effects of this education on customer satisfaction and other organizational goals. For companies with team members distributed across sectors, D&I education may not raise their engagement scores. However, this study may not have captured an additional value. Further research is recommended.

Perhaps the most important implication is that D&I education should focus primarily on front-line leaders. Dollars spent educating them will bring more team engagement overall. Leaders can drive culture change by example, expanding D&I awareness, knowledge, and skills throughout the organization.

Workshop duration may also be a factor. In this study, leader workshops lasted two days, while the employee curriculum was designed for one day. A few companies have been criticized in the news recently for closing their doors for a few hours to provide D&I education to all employees (Gurchiek, 2018). Many experts have said such efforts are not enough (Agovino, 2020). The results of this study show that organizations like Novant Health, committed to investment in D&I education, increase engagement, patient satisfaction, and revenues over those that expend fewer resources, at least at centralized locations that share a culture.

REFERENCES

Agovino, T. (2020). 'We're talking about racism. We never talked about this before.' *HR Magazine, 65(3),* 32-43.

Alderfer, C. P. (1992). Changing race relations embedded in organizations: Report on a long-term project with the XYZ corporation. In S. E. Jackson (Ed.), *Diversity in the workplace: Human resource initiatives* (pp. 138–166). Guilford Press.

Alhejji, H., Garavan, T., Carbery, R., O'Brien, F., & McGuire, D. (2015). Diversity training programme outcomes: A systematic review. *Human Resource Development Quarterly, 27*(1), 95–149. https://doi.org/10.1002/hrdq.21221

Anand, R., & Winters, M. F. (2008). A retrospective view of corporate diversity training from 1964 to the present. *Academy of Management Learning & Education, 7*(3), 356–372. https://doi.org/10.5465/AMLE.2008.34251673

Bendick, M., Egan, M. L., & Lofhjelm, S. (2001). Workplace diversity training: From anti-discriminatory compliance to organizational development. *Human Resource Planning, 24*(2), 10–25.

Bezrukova, K., Spell, C. S., Perry, J. L., & Jehn, K. A. (2016). A meta-analytical integration of over 40 years of research on diversity training evaluation. *Psychological Bulletin, 142*(11), 1227–1274. https://doi.org/10.1037/bul0000067

Day, J. C. (1996). Current Population Reports: *Population projections of the United States by age,*

sex, race and Hispanic origin: 1995 to 2050. Washington, DC: US Bureau of the Census, P25–1130. https://census.gov/prod/1/pop/p25-1130/p251130.pdf

Ely, R. J. (2004). A field study of group diversity, participation in diversity education programs, and performance. *Journal of Organizational Behavior, 25*(6), 755–780. https://doi.org/10.1002/job.268

Frankel, B. (2007). Diversity training: Why you need it, how to do it right. *DiversityInc, 6*, 45–46.

Gurchiek, K. (2018, April 19). *Experts weigh in on Starbucks' racial-bias training.* SHRM. https://www.shrm.org/resourcesandtools/hr-topics/behavioral-competencies/global-and-cultural-effectiveness/pages/experts-weigh-in-on-starbucks-racial-bias-training.aspx

Hanover, J. M. B., & Cellar, D. F. (1998). Environmental factors and the effectiveness of workforce diversity training. *Human Resource Development Quarterly, 9*(2), 105–124. https://doi.org/10.1002/hrdq.3920090203

Harter, J. K., Schmidt, F. L., & Hayes, T. L. (2002). Business-unit-level relationship between employee satisfaction, employee engagement, and business outcomes: A meta-analysis. *Journal of Applied Psychology, 87*(2), 268–279. https://doi.org/10.1037/0021-9010.87.2.268

Hite, L. M., & McDonald, K. S. (2006). Diversity training pitfalls and possibilities: An exploration of small and mid-size U.S. organizations. *Human Resource Development International, 9*(3), 365–377. https://doi.org/10.1080/13678860600893565

Kalinoski, Z., Steele-Johnson, D., Peyton, E., Leas, K., Steinke, J., & Bowling, N. (2012). A meta-analytic evaluation of diversity training outcomes. *Journal of Organizational Behavior, 34*(8), 1076-1104. https://doi.org/10.1002/job.1839

Kompaso, S., & Sridevi, S. M. (2010). Employee engagement: The key to improving performance. *International Journal of Business and Management. 5*(12). 89-96. https://doi.org/10.5539/ijbm.v5n12p89

Kulik, C. T., & Roberson, L. (2008). Common goals and golden opportunities: Evaluations of diversity education in academic and organizational settings. *Academy of Management Learning and Education, 7*(3), 309–331. https://doi.org/10.5465/amle.2008.34251670

Lavigna, B., & Basso, P. (2020). Employee engagement: Why it matters (Part 1). https://assets-global.website-files.com/6027035e7f0406c257f4cee6/60708fb5da0f995f2663f07d_P%26P%20June%202020%20Employee%20Engagement%20Part%201.pdf

Law, D. Y. (1998). An evaluation of a cultural diversity training program. Dissertation Abstracts International: Section B: The Sciences and Engineering, 59(5-B), 2468.

McKinsey & Company (2017, April 7). *Focusing on what works for workplace diversity.* https://www.mckinsey.com/featured-insights/gender-equality/focusing-on-what-works-for-workplace-diversity#

Mor Barak, M. E., Lizano, E. L., Kim, A., Duan, L., Rhee, M-K., Hsiao, H-Y., & Brimhall,

K. C. (2016). The promise of diversity management for climate of inclusion: A state-of
-the-art review and meta-analysis. *Human Service Organizations: Management, Leadership &
Governance, 40:4*, 305–333. https://doi.org/10.1080/23303131.2016.1138915 Newport,
F. (2018, May 22). *In U.S., estimate of LGBT population rises to 4.5%.* Gallup. https://news
.gallup.com/poll/234863/estimate-lgbt-population-rises.aspx/

Paluck, E. L. (2006). Diversity training and intergroup contact: A call to action research. *Journal
of Social Issues, 62*, 577–595. https://doi.org/10.1111/j.1540-4560.2006.00474.x

Pendry, L. F., Driscoll, D. M., & Field, C. T. (2007). Diversity training: Putting theory into prac-
tice. *Journal of Occupational and Organizational Psychology, 80*(1), 27–50. https://doi.org
/10.1348/096317906X118397

Perry, E. L., Kulik, C. T., & Field, M. P. (2009). Sexual harassment training: Recommendations
to address gaps between the practitioner and research literatures. *Human Resource Manage-
ment, 48*(5), 817–837. https://doi.org/10.1002/hrm.20316

Taplett, F. B, Garcia-Alonso, J., Krentz, M., & Poulsen, M. B. (2020, March 5). *It's frontline lead-
ers who make or break progress on diversity.* Boston Consulting Group. https://www.bcg.com
/publications/2020/frontline-leaders-make-break-progress-diversity/.

Thomas, R. R., Jr. (1990). From affirmative action to affirming diversity. *Harvard Business Review,
68*(2), 107–117.

Tsui, A. S., Egan, T. D., & O'Reilly, C. A., III. (1992). Being different: Relational demography
and organizational attachment. *Administrative Science Quarterly, 37*(4), 549–579. https://doi
.org/10.2307/2393472

Wang, G. G., & Wilcox, D. (2006). Training evaluation: Knowing more than is practiced.
Advances in Developing Human Resources, 8(4), 528–539. https://doi.org/10.1177
/1523422306293007

Open Space Technology: A Novel Strategy to Build an Inclusive Environment and Attract a More Diverse Workforce

Catherine R. Hoyt[1], PhD, OTD, OTR/L; Ashley J. Housten[2], OTD, MSCI, OTR/L; Kelly M. Harris[1,2], PhD, CCC-SLP; Mario Millsap[1], MSOT, OTR/L, MSOT; Adam C. Pearson[1,3], OTD, OTR/L; Steven D. Taff[1,4,5], PhD, OTR/L, FNAP, FAOTA; Lisa Tabor Connor[1,6], PhD, MSOT, OTR/L

Author Affiliations: [1]Program in Occupational Therapy, [2]Department of Surgery, [4]Department of Medicine, [5]Teaching Scholars Program, [6]Department of Neurology, Washington University School of Medicine, St. Louis, Missouri; [3]Peter & Paul Community Services, St. Louis, Missouri

Corresponding Author: Catherine R. Hoyt, Program in Occupational Therapy, 4444 Forest Park Avenue, St. Louis, MO, 63108 (*hoytcr@wustl.edu*)

ABSTRACT

Health educators are well positioned to address inequities in healthcare access and delivery. This paper describes the process and initial outcomes of one approach to designing inclusive, welcoming, and accessible learning environments. Open Space Technology (OST) is a participant-driven, rather than organizer-driven, meeting format to explore a specific problem. Here, 54 participants, representing faculty, staff, students, and community-based organizations affiliated with a graduate professional program in rehabilitation, gathered to discuss diversity, equity, and inclusion (DEI). Participants determined the agenda by identifying concerns related to DEI. The concepts were consolidated, and participants voted to select ten for discussion. Following consensus coding, three targets for improvement emerged: recruitment, workplace climate, and structural support systems.

Keywords: ▪ Diversity ▪ Equity ▪ Higher Education ▪ Inclusion ▪ Occupational Therapy

INTRODUCTION

The COVID-19 pandemic has magnified the deadly impact of health disparities on the most vulnerable. At the same time, the killing of George Floyd, Ahmaud Arbery, Breonna Taylor, Atatiana Jefferson, Stephon Clark, Botham Jean, Philando Castile, Alton Sterling, and countless others has exposed the many ways in which US systems and institutions have failed to address diversity, equity, and inclusion (DEI). While not exempt, academic health education programs are well positioned to address many facets of social injustice. Health educators have a unique opportunity to follow thoughtful reflection and research with action to achieve change.

Studies confirm that low-income and minority populations do not have equal access to high-quality healthcare (Betancourt & Maina, 2004; Weaver et al., 2010). Moreover, most providers do not incorporate cultural norms relevant to the socially disadvantaged, exacerbating the effects of low health literacy and sense of estrangement that contribute to disparities (Baker, 2006; Berkman et al., 2011; Sentell & Halpin, 2006). To provide the most effective care, healthcare providers must understand an individual's multifaceted healthcare needs and concerns and effectively communicate the relevant information. Unfortunately, fields that lack a diverse workforce find achieving these goals especially challenging.

Every year, approximately 78,000 graduate students pursue degrees in the rehabilitation professions—occupational therapy (OT), physical therapy (PT), and speech-language pathology (SLP; CAPCSD & ASHA, 2019; Chana, 2020; Harvison, 2018). Practitioners in these fields serve a client base that is representative of the diversity of the US population. In urban areas, the most vulnerable are generally overrepresented. However, only around one in seven rehabilitation professionals identifies as non-White (OT, 17%; PT, 11.5%; SLP, 8%) (APTA, 2017; Harvison, 2018; Rodriguez, 2016). Among self-identified minority OT practitioners, only 5% identify as Black or African American, far below the representation of Blacks in the national population (~ 13%; US Census Bureau, 2019). Building a diverse rehabilitation workforce proficient in cultural humility is critical to ensuring patient access to quality healthcare and reducing health disparities.

The OT field has recognized the need to, and benefits of, increasing workforce diversity. However, we have few evidence-based approaches to guide program investment and initiatives (Taff & Blash, 2017). The need is urgent, as COVID-19 hampers higher education methodologies and preparation of the future healthcare workforce. Many workplaces have implemented mandatory DEI training, but it is often delivered in a discrete, passive session that has not been proven successful for sustained change (Combs, 2002; Hite, 2006).

One new approach is Open Space Technology (OST; Owen, 1998; 2008). In contrast to traditional trainings, OST offers a program-centered approach to identify problems, priorities, and potential solutions through ongoing community dialogue, much like a participatory action

research framework. The purposes of this study were: (1) to engage healthcare educators in identifying ways to embody an inclusive, collaborative environment that celebrates diversity and directly addresses inequities (Cox, 2002; Howard, 2012); and (2) to determine the impact of OST on achieving these aims.

METHODS

The Washington University School of Medicine Institutional Review Board approved an anonymous, pre/post, cohort study. Participants attended a day-long workshop (7 hours). One week before and one month after, they were sent an email with a link to a survey, which they could anonymously complete using Research Electronic Data Capture Tools (REDCap; Harris et al., 2009).

Participants

Faculty, staff, students, and community members affiliated with a graduate professional program in rehabilitation were invited to attend a day-long workshop to identify where DEI concepts could be more actively addressed within allied health and to strategize about solutions. Participation was voluntary. All invitees were sent a link to the survey 1 week before and 1 day and 1 month after attending the workshop and asked to complete it anonymously. To ensure the breadth and diversity of the discussions during the OST meeting, our aim was to recruit a minimum of 20 participants.

Open Space Technology

To achieve greater diversity in health education, the needs of all involved, including students, staff, faculty, leadership, community partners, and alumni, must be considered. OST is a participant-driven approach that has demonstrated effectiveness in increasing community engagement (Cox, 2002; Howard, 2012). The OST approach allows an unlimited number of community members to share their perspectives. It focuses the conversation on developing meaningful solutions to significant, complex problems (Owen, 1998) based on a few main rules. First, whoever comes is the right group of people (Euchner, 2014). Second, the participants set the agenda as an essential community-building activity that promotes engagement. Third, depending on the topic, workshops can be designed to produce various outcomes: observations, next steps, opportunities for continued engagement, and solution approaches (Owen, 2008). OST has been described as ideal for addressing challenging problems, such as DEI, that do not have an obvious solution and require input from all sectors of an organization (Owen, 1998; 2008).

Measures

The cultural competence assessment instrument (CCAI) measures cultural awareness/ knowledge, cultural skills, and organizational support, here, from rehabilitation professionals. It consists of 24 items that are scored using a 4-point Likert-type scale. In our analysis, a score of 1 indicates strongly agree and 4 indicates strongly disagree. The CCAI's psychometric properties have been validated (Suarez-Balcazar et al., 2011). We changed the term *clients* to *coworkers* for this study.

Analysis

All suggested discussion items were recorded. Two trained individuals (CH, AH) used consensus coding to qualitatively analyze the notes on the 10 that were selected, and all authors reviewed the themes and strategies identified. Sociodemographic data were described using summary statistics. Responses on knowledge of, and comfort with, DEI were statistically summarized for the pre and post surveys and compared using paired *t*-tests. Because the CCAI was used to look at group-level perspectives, responses were summarized using a Wilcoxon rank-sum test. All analysis was completed using R version 3.5.3 (2019).

RESULTS

Participants

In January 2020, 279 individuals working in, or affiliated with, a midwestern OT program were invited to participate in a voluntary, 7-hour workshop focused on DEI. Of those, 74 planned to attend, and 54 participated. Participants included faculty, staff, students, administrators, and community partners. They were emailed a link to anonymously complete a survey using REDCap one week prior to and one month following the OST workshop (Harris et al., 2009). A total of 43 responded to the first survey and 20 to the second. As outlined in Table 1, most of the 43 people who completed the baseline survey were midcareer, with a mean age of 42 years (SD = 12). Nearly half of respondents reported identifying as a minority; 40% were nonwhite; 7% were Hispanic/ Latinx; and 18% were not heterosexual. The majority were women (86%) and current program employees (78%) with a graduate degree (57%). Most participants reported previous experience with DEI training (93%) but had not engaged in educating others in DEI (71%).

Open Space Technology

In the first stage of the workshop, an external, trained facilitator presented the context, concepts, and definitions related to DEI to provide a basic understanding and common language. Next, all

Table 1: Participant Characteristics

Characteristic	Pretest (N=43) N (%)	Posttest (N=20) N (%)
Age, years (mean, *SD*)	42 *(12)*	47 *(11)*
Identify as a minority		
Yes	21(49)	6 (30)
No	21 (49)	12 (60)
Unsure	1 (2)	2 (10)
Gender Identity		
Female	38 (86)	17 (85)
Male	6 (14)	3 (15)
Sexual Orientation		
Heterosexual	36 (82)	15 (75)
Lesbian, gay, or homosexual	4 (9)	2 (10)
Bisexual	2 (5)	1 (5)
Something else	1 (2)	2 (10)
Don't know	1 (2)	0
Racial Identity		
White/Caucasian	29 (67)	15 (75)
Asian	4 (9)	2 (10)
Black/African American	4 (9)	1 (5)
American Indian/Alaskan Native	1 (2)	0
More than one	3 (7)	2 (10)
Unknown	2 (5)	0
Hispanic or Latinx	3 (7)	0
Current Employee		
Yes	40 (91)	20 (100)
Program Affiliation		
Employee	35 (78)	18 (90)
Alumni	5 (11)	2 (10)

(continued)

Table 1: Participant Characteristics (*continued*)

	Pretest (N=43)	*Posttest (N=20)*
Characteristic	*N (%)*	*N (%)*
Student	3 (7)	1 (5)
Community Organizer	2 (4)	0
Past Employee	1 (2)	2 (10)
Other	3 (7)	0
Education Level		
Graduate Degree	25 (57)	15 (75)
College	15 (33)	4 (20)
Some College/Associates	4 (9)	1 (5)
High School/GED	0	0
Less than High School	1 (2)	0

participants, regardless of role (faculty, staff, student, or community organization member), were invited to propose topics related to DEI in this program. Once all suggestions were shared, program leadership consolidated the topics that overlapped, and participants voted for the ones that represented the top 10 priorities to ensure enough time for discussion (see Fig. 1). Five were discussed in a morning session, and five in the afternoon following a shared lunch. Participants who proposed the selected topics facilitated the relevant session. Between 6-13 participants (mean = 10) discussed each topic. The overarching topic guided discussion, but no specific guidelines or agendas were set. Participants contributed at will, and a note-taker selected for each session recorded key elements, takeaways, and action items. These notes were compiled for subsequent review, analysis, and strategic planning.

Two trained individuals (CH, AH) used a consensus coding approach to qualitatively analyze the notes on each topic, and all authors reviewed the results. A summary of topics was compiled and documented on a shared drive for all participants to revisit. Despite the breadth of topics that arose in the large group, themes and strategies identified by the smaller groups overlapped substantially (see Fig. 2).

Pre/Post Assessment

Participants were asked to complete a CCAI before and after the meeting to gauge their perceived cultural humility (Suarez-Balcazar et al., 2011). A total of 39 completed it at baseline, and 20 at fol-

Topics (N=29)	Remaining Topics (n=19)
	• Defining diversity
	• Building accountability around inclusion
	• Discussion of implicit bias
	• Implicit bias in community based work
	• Clinical interactions with clients and supporting students
Morning Session (n=5)	• Faculty belonging
• Class system between faculty and staff	• Inclusion during events
• Student mental health	• Recruiting diverse faculty
• Exploration of how policies impact minority students	• Admission policy and procedures
• DE&I in educational curriculum	• Creating a sense of belonging for minority students
• Create a sense of belonging in program	• Tuition barrier for low income students
	• Coursework
Afternoon Session (n=5)	• Community outreach
• Recruitment (students/faculty/staff)	• Protectionism for specific community partners
• Retention of students of color	• Community partnerships that honor DE&I
• Recruiting African Americans into research careers	• Extending support to our alums
• Achieving equity with limited resources	• Generational equity: show that we care about climate change
• Support students with learning disabilities	• Discussion of difficult topics: reproductive health, gun violence
	• National organization accountability

Figure 1: Participant Identified Topics Related to DEI in Higher Education
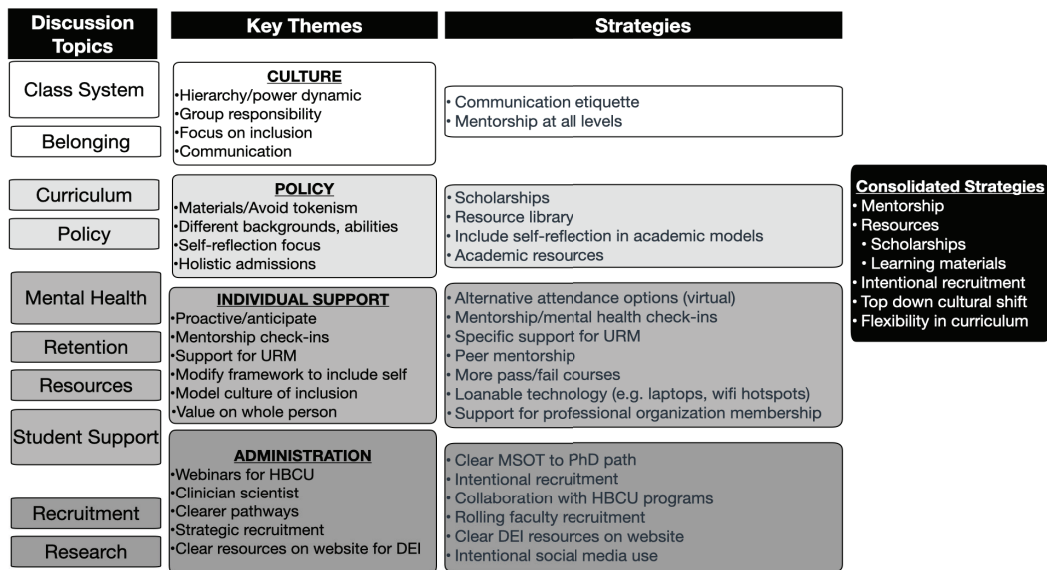
Figure 2: Summary of Topics and Discussion Themes and Strategies

Table 2: Cultural Competence Assessment Instrument Items Showing Significant Change

Item	Pre-OST n=43 n (%)	Post-OST n=20 n (%)
My organization does not provide ongoing training related to cultural competence	18 (47)	3 (15)
It is difficult to practice skills related to cultural competence	13 (33)	1 (5)
I do not feel I have skills to provide services to minority clients	3 (8)	0 (0)
I examine my own biases related to race and culture that may influence my behavior	25 (89)	20 (100)

Note: significant is defined as p < 0.05.

low up. Based on the Wilcoxon rank-sum test, four items showed a statistically significant change between iterations (p < .05; see Table 2).

DISCUSSION

Based on our analysis, the OST approach was successful for several reasons. While not all students, faculty, and personnel could attend, the meeting created a level of trust and confidence among participants that facilitated productive discussions. Dedicating a full day to DEI fostered difficult conversations and revealed priorities for planning DEI initiatives in this program. Senior faculty reviewed the themes identified by the small group topic discussions, and they directly informed the strategic plan for this OT department and exposed the need to develop an accountability committee composed of individuals internal and external to the program and university.

Despite the challenges of measuring whether, how, and how much DEI initiatives improve the educational climate, several outcome variables were identified. Evidence indicates that recruitment and retention efforts improve with a positive work environment (Kundu & Lata, 2017), and commitment from leadership is essential. Future steps will identify metrics to evaluate the DEI initiatives as part of a strategic plan and solutions to the inevitable obstacles to long-term success. Evaluating the inclusivity of an environment is inherently subjective, and constant feedback and discussion will be needed to ensure community members feel connected and engaged. Recurring OST workshops are necessary to maintain momentum, incorporate new voices, identify emerging concerns, and make progress in neglected areas.

Healthcare providers, especially in rehabilitation, are insufficiently diverse and there is an opportunity to expand faculty understanding of diversity. While this study was completed pre-

COVID, it adds to the national dialogue on equity and the importance of representation among healthcare providers in all disciplines. As health educators generally, and OTs specifically, we can support meaningful engagement with our communities and help them to experience the highest quality of life. Equity is central to this charge. Healthcare educators are expected to create and maintain safe spaces for students, colleagues, and clients and to ensure an inclusive environment where no one remains on the sidelines. To our knowledge, this OST workshop is the first of its kind in healthcare education. The OST approach allows institutions to dynamically assess their progress in enacting positive changes to address DEI through ongoing sessions.

A high proportion of participants self-identified as a minority based on race, ethnicity, disability, or gender identity, a clear indicator that the program is right to be concerned about DEI. Self-selection indicates a baseline awareness and prioritization of DEI initiatives, but those who were not in the room are still important stakeholders whose buy-in is essential for the long-term viability and sustainability of DEI initiatives. Future studies should consider strategies to engage more participants. While the OST workshop described here was face-to-face, the approach could be translated to a virtual environment, possibly facilitating the participation of people who cannot travel to the target destination.

Institutional change to address systemic racism requires sustained commitment. OST is one way to broach these complex discussions. Its client-centered approach can provide an opportunity to dive deeply into questions, develop interventions, and track outcomes.

The needs assessment reported here using the OST framework is only an initial step. Careful strategic planning to design and implement institutional, departmental, and program-level interventions must follow. Healthcare graduate programs must engage the community to identify and discuss DEI priorities and disseminate the information to support strategic planning, sustained engagement, and stakeholder buy-in. Identifying individuals who will hold the program accountable for achieving the identified actionable goals will also support success. Ultimately, modeling a commitment to DEI will go far to address inherent power disparities in university systems and academic departments and build an atmosphere of trust and collaboration necessary to engage in honest conversation on challenging topics. By boldly facing challenges, healthcare education can achieve a more inclusive and welcoming environment for healing.

REFERENCES

American Physical Therapy Association (APTA). (2017). *Physical therapist member demographic profile*. https://www.apta.org/your-career/careers-in-physical-therapy/workforce-data/physical-therapist-demographic-profile

Baker, D. W. (2006). The meaning and the measure of health literacy. *Journal of General Internal Medicine, 21*(8), 878-883. https://doi.org/10.1111/j.1525-1497.2006.00540.x

Berkman, N. D., Sheridan, S. L., Donahue, K. E., Halpern, D. J., & Crotty, K. (2011). Low health literacy and health outcomes: An updated systematic review. *Annals of Internal Medicine, 155*(2), 97-107. https://doi.org/10.7326/0003-4819-155-2-201107190-00005

Betancourt, J. R., & Maina, A. W. (2004). The Institute of Medicine report "Unequal Treatment": Implications for academic health centers. *Mount Sinai Journal of Medicine, 71*(5), 314-321. https://pubmed.ncbi.nlm.nih.gov/15543432/

Chana, T. (2020). *Aggregate program data: 2019 physical therapy education programs fact sheets.* http://www.capteonline.org/uploadedFiles/CAPTEorg/About_CAPTE/Resources/Aggregate_Program_Data/AggregateProgramData_PTPrograms.pdf

Combs, G. M. (2002). Meeting the leadership challenge of a diverse and pluralistic workplace: Implications of self-efficacy for diversity training. *Journal of Leadership Studies, 8*(4), 1-16. https://doi.org/10.1177/107179190200800401

Council of Academic Programs in Communication Sciences and Disorders (CAPCSD) &
American Speech-Language-Hearing Association (ASHA). (2019). *Communication science and disorders education survey: National aggregate data report.* https://www.asha.org/uploadedFiles/CSD-Education-Survey-National-Aggregate-Data-Report.pdf

Cox, D. (2002). Using Open Space Technology for school improvement. *Journal of School Improvement, 3*(2).

Euchner, J. (2014). Innovation culture and Open Space meetings. *Research Technology Management, 57*(1), 9-10. https://doi.org/10.5437/08956308X5701002

Harris, P. A., Taylor, R., Thielke, R., Payne, J., Gonzalez, N., & Conde, J. G. (2009). Research electronic data capture (REDCap): A metadata-driven methodology and workflow process for providing translational research informatics support. *Journal of Biomedical Informatics, 42*(2), 377-381. https://doi.org/10.1016/j.jbi.2008.08.010

Harvison, N. (2018). *Academic program annual data report 2017-2018.* A. O. T. Association. https://www.aota.org/~/media/Corporate/Files/EducationCareers/Educators/2017-2018-Annual-Data-Report.pdf

Hite, L. M., & McDonald, K. S. (2006). Diversity training pitfalls and possibilities: An exploration of small and mid-size US organizations. *Human Resource Development International, 9*(3), 365-377. https://doi.org/10.1080/13678860600893565

Howard, P. H. (2012). Increasing community participation with self-organizing meeting processes. *Journal of Rural Social Sciences, 27*(2), 118-136. https://egrove.olemiss.edu/jrss/vol27/iss2/8

Kundu, S. C., & Lata, K. (2017). Effects of supportive work environment on employee retention: Mediating role of organizational engagement. *International Journal of Organizational Analysis, 25*(4), 703-722. https://doi.org/10.1108/Ijoa-12-2016-1100

Owen, H. (1998). The human side: R&D meetings in open space. *Research-Technology Management 41*(4), 57-59. https://doi.org/10.1080/08956308.1998.11671225

Owen, H. (2008). *Open space technology: A user's guide*.Berrett-Koehler Publishers.

Rodriguez, J. C. (2016). *Our clients are diverse: Why aren't we?* American Speech-Language-Hearing Association. https://leader.pubs.asha.org/doi/full/10.1044/leader.SSAY.21052016.40

Sentell, T. L., & Halpin, H. A. (2006). Importance of adult literacy in understanding health disparities. *Journal of General Internal Medicine, 21*(8), 862-866. https://doi.org/10.1111/j.1525-1497.2006.00538.x

Suarez-Balcazar, Y., Balcazar, F., Taylor-Ritzler, T., Portillo, N., Rodakowsk, J., Garcia-Ramirez, M., & Willis, C. (2011). Development and validation of the cultural competence assessment instrument: A factorial analysis. *Journal of Rehabilitation, 77*(1), 4-13. https://cespyd.es/a/wp-content/uploads/2017/12/Developmentand.pdf

Taff, S. D., & Blash, D. (2017). Diversity and inclusion in occupational therapy: Where we are, where we must go. *Occupational Therapy Health Care, 31*(1), 72-83. https://doi.org/10.1080/07380577.2016.1270479

US Census Bureau. (2019). *Quick facts*. https://www.census.gov/quickfacts/fact/table/US/PST045219

Weaver, K. E., Rowland, J. H., Bellizzi, K. M., & Aziz, N. M. (2010). Forgoing medical care because of cost: Assessing disparities in healthcare access among cancer survivors living in the United States. *Cancer, 116*(14), 3493-3504. https://doi.org/10.1002/cncr.25209

Advancing Culturally Competent Healthcare Delivery through Interprofessional Collaborative Practice

Joni Nelson[1], PhD, MS

Author Affiliations: [1]Department of Stomatology, Division of Population Oral Health, Medical University of South Carolina, Charleston, South Carolina

Corresponding Author: Joni Nelson, Department of Stomatology, Division of Population Oral Health, Medical University of South Carolina, Charleston, SC, 29425 (*nelsonjd@musc.edu*)

ABSTRACT

As healthcare challenges and innovations proliferate, a multidisciplinary clinical workforce must be equipped to meet patients' and their families' diverse needs. Substantial efforts have optimized interprofessional education (IPE), but cultural competency (CC) training has not been comprehensively defined. The lack of shared meaning has made its operationalization in healthcare and IPE a considerable task. We sought to contextualize factors that inhibit or facilitate the adoption of core competencies for interprofessional collaborative practice (ICP) and CC in predoctoral clinical training programs.

Keywords: ▪ Collaborative practice ▪ Cultural Competence ▪ Healthcare ▪ Interprofessional Care ▪ Predoctoral Training

INTRODUCTION

As healthcare challenges and innovations grow, a multidisciplinary clinical workforce must be equipped to provide patient-centered care to meet diverse needs. Many individuals and institutions have worked to optimize interprofessional education and culturally responsive care and clinical practice (Brown et al., 2008; Doll et al., 2014; McElfish et al., 2018). One of the most influential studies of the last decade is *Unequal treatment: Confronting racial/ethnic disparities in health care*, published by the Institute of Medicine (Smedley et al., 2003). It outlines the need for a "culturally competent" workforce to deliver optimal healthcare to the populations it serves.

The term *cultural competence*, used here because it is familiar, implies that some endpoint is reached, but the opposite is true: you can never be fully competent. The pursuit of competence is a process or continuum, built on asking questions of the patient and family, but also of yourself (US DHHS, 2013). In the healthcare system, it has been defined as the recognition of "a set of congruent behaviors, attitudes, and policies that come together in a system, agency, or among professionals that enables effective work in cross-cultural situations" (Betancourt et al., 2002; Cross et al., 1989). Providers must be aware of language use, cultural differences and unique needs and their intersection with personal health beliefs, the prevalence and incidence of certain conditions and diseases within populations, and the context and adaptation of treatment options and outcomes. Other terms used to characterize cultural competence include cultural sensitivity, humility, effectiveness, and responsiveness.

The movement to adopt principles of cultural competence into healthcare settings has been consistent (Betancourt et al., 2003; Brach & Fraser, 2000; Denboba et al., 1998; Fortier & Shaw-Taylor., 1999), even if they remain inadequately defined. The lack of shared meaning has made their operationalization in healthcare and interprofessional education a considerable task. The expanded model for interprofessional collaborative practices includes competencies for clinical providers, public health practitioners, and health professionals in various fields (IPEC, 2016). The push to better integrate care to address health inequities informs our pilot study of approaches to advance interprofessional education.

METHODS

Formative Evaluation and Participants

We designed a formative evaluation to explore clinical and nonclinical education leaders' perspectives on interprofessional education and cultural competence development in predoctoral clinical training programs at five US academic health science centers. We conducted semi-structured, qualitative interviews with clinic directors, faculty, program directors, federal and nonfederal

administrators, and executive leadership for Diversity and Inclusion programs (n = 20; see Table 1 for sample survey questions).

Study Framework

Our study was framed using a quality improvement approach to examine national, regional, and local interprofessional education tactics to deliver culturally competent care in clinical settings. Drawing from the Office of Minority Health's national standards for culturally and linguistically appropriate services (CLAS) in health and healthcare (US DHHS, 2013) and the core competencies for interprofessional collaborative practice (ICP; IPEC, 2016), we sought to contextualize factors that inhibit or facilitate the adoption of core competencies for ICP and CC by predoctoral clinical training programs.

Data Collection and Analysis

Qualitative interviews were analyzed using the constant comparative method (Creswell, 2013; McMillan & Schumacher, 2014; Patton, 2002). They were conducted via phone or videoconference, and verbal consent was given prior to data collection. Each interview took 25 to 45 minutes, and extensive field notes were taken to capture the perspectives expressed for thematic analysis. All data collected were analyzed using MAXQDA Plus software (VERBI Software, MAXQDA, 2020).

Table 1. Sample Survey Questions

Question	Question Aim
How is cultural competence defined in relation to delivery of care on your campus?	Define cultural competence
What structures are in place to equip students on your campus with an understanding of delivering culturally competent care in collaborative teams?	Codification of investment and prioritization for interprofessional collaborative practice and cultural competence
What would you recommend to improve or sustain inclusion of these concepts for learners in clinical settings?	Strategies for future adoption of interprofessional collaborative practice and cultural competence in predoctoral programs

RESULTS

Thematic analysis revealed valuable strategies for ICP and CC adoption. First, shared meaning is critical when defining cultural competence. Second, curriculum delivery must align with clinical training. Third, student knowledge and application of ICP and CC competencies must be assessed.

Lack of Shared Meaning

All participants agreed that the term *cultural competence* is used inconsistently. They variously referred to it as cultural humility, cultural sensitivity, cultural responsiveness, cultural effectiveness, cultural awareness, cultural inclusivity, diversity and inclusion, and empathetic care. This wide range of terminology only enhances the differences in its application across predoctoral clinical training programs and calls for a recalibration of its characteristics, use in the clinical context, and expected learning objectives for team-based care delivery. To prepare the next generation of interprofessional teams to deliver CC care, we should embed a shared purpose to pursue a "cultural continuum" in classroom and preceptorship settings. Defining a shared purpose, the optimal make-up of an interprofessional care team, and member accountability will create a pathway to meet the needs of an ever-changing, culturally diverse population.

Delivery of ICP and CC Training

ICP and CC intersect in both theory and practice (Oelke et al., 2013), but linking them in predoctoral clinical education and training programs requires infrastructure. Participants detailed structures for ICP and CC delivery, including required and elective courses for all predoctoral clinical and nonclinical students, special topic seminars and workshops, student and faculty committees to develop ICP and CC experiences, student organization events to promote ICP and CC training opportunities, internal and external fellowships to provide ICP and CC experiences, service learning and community partnership activities, and optional certificate programs. Some participants (n = 16) revealed that most advanced-level exposure to ICP and CC trainings was optional.

They all emphasized that the inclusion of CC in their respective predoctoral clinical training programs was prescribed by their governing accreditation bodies on which they rely for information on learning objectives and activities that must be completed for graduation. However, less than 60% of participants specified how their respective curricula calibrate syllabi for CC, and less than 10% described the alignment between ICP and CC in their programs. Providing and aligning ICP and CC training in predoctoral clinical training programs is essential for addressing the diverse health needs of their students' future patients.

Student Efficacy and Application

The first level of Bloom's taxonomy of learning objectives is knowledge (Bloom, 1956). All participants indicated that students in their programs achieved a level of awareness of, and basic competencies in, ICP and CC. According to most (n = 14), this knowledge is assessed based on pre/post-course surveys and personal reflections, exams, clinical observations, and senior exit interviews. Although assessing students' knowledge immediately after training is critical for determining their intent to perform, it cannot evaluate the efficacy of their application of skills over time. A few participants (n = 4) believe that to assure students enter the workforce with the tools to deliver culturally competent, team-based care, both ICP and CC should be embedded in all clinical predoctoral curricula as mandatory learning objectives with actionable deliverables. Moreover, a few discussed the importance of training faculty and preceptors to act as CC champions in their respective colleges (n = 3), aligning faculty and preceptor trainings to reduce different interpretations among the health professions, and introducing CE credits for practitioners (n = 2). These approaches would allow students to witness ICP and CC in practice, modeled by their clinical faculty, and sustain a higher level of learning, based on Bloom's taxonomy, over the long term.

This exploratory study demonstrated the importance of the intersectionality of CC and IPEC core principles. It also revealed an actionable set of recommendations for incorporating these principles in predoctoral health professions program curricula. Five key recommendations emerged based on participant experiences with IPEC and CC adoption (see Table 2). Overall, the recommendations focus on workforce training for team-based, culturally competent care, calibrating the terminology and connecting it to practice for students, and cultivating clinical champions. These findings highlight the need for healthcare leaders and educators to take a closer look at how their cultures, structures, and processes can better support IPEC.

DISCUSSION

Healthcare educators and clinicians must inculcate interprofessional practices and cultural competence to prepare our graduates to function effectively in the 21st-century environment. While this pilot study provides valuable insight, further examination is necessary. A comprehensive analysis of practices at every US academic health center was beyond its scope, although participants uniquely represented leaders in the field of clinical and nonclinical education to explore the intersections of ICP and CC. Data were self-reported and did not include an in-depth analysis of predoctoral program objectives, course content, and individual syllabi. Future research should measure downstream effects of enhancing provider training in ICP and CC delivery; for example, examining the impacts on population health outcomes, provider beliefs and attitudes, and sustained practice. Recently, the world has experienced a global pandemic and intense racial unrest,

Table 2. Five Key Recommendations for ICP and CC Adoption in Predoctoral Clinical Training Programs

1. Calibrate our understanding of terminology	Precisely define terms to describe ICP and CC knowledge, efficacy, and application in clinical settings
2. Equip local champions	Develop and implement a didactic and applied training curriculum to enable nonclinical and clinical faculty to adopt ICP and CC
3. Associations for practice and application	Align curriculum with both ICP and CC learning objectives, including practical deliverables, so students can translate didactic objectives into clinical applications
4. Track efficacy of delivering team-based, culturally competent care	Identify practical measures to assess the application of ICP and CC in clinical settings
5. Elevate requirements for student performance	Support the value of ICP and CC for patient health outcomes through actionable performance measures and faculty feedback

forcing us to recognize the importance of ICP and CC for patient care. This research documents the significance of shared meaning for cultural competence and effective provider collaboration.

CONCLUSION

Policy reforms, patient-centered paradigms, accountable-care organizations, and the significance of integrating provider expertise are rapidly changing healthcare delivery. Our pilot study explored ways to advance interprofessional approaches to deliver culturally competent care in clinical settings. Findings supporting the value of the intersection of ICP and CC will guide the interprofessional health practitioners of tomorrow.

REFERENCES

Betancourt, J. R., Green, A. R., Carrillo, J. E., & Ananeh-Firempong, II, O. (2003). Defining cultural competence: A practical framework for addressing racial/ethnic disparities in health and health care. *Public Health Reports*, *118*(4), 293-302. https://doi.org/10.1093/phr/118.4.293

Bloom, B. S. (1956). *Taxonomy of educational objectives: The classification of educational goals*. Longmans, Green.

Brach, C., & Fraser, I. (2000). Can cultural competency reduce racial and ethnic health disparities? A review and conceptual model. *Medical Care Research and Review, 57*(Suppl 1), 181-217. https://doi.org/10.1177/1077558700057001S09

Brown, B., Warren, N. S., Brehm, B., Breen, P., Bierschbach, J. L., Smith, R., Wall, A., & Van Loon, R. A. (2008). The design and evaluation of an interprofessional elective course with a cultural competence component. *Journal of Allied Health, 37*(4), e316-e337.

Creswell, J. W., & Poth, C. N. (2016). *Qualitative inquiry and research design: Choosing among five approaches.* SAGE Publications, Inc.

Cross, T., Bazron, B., Dennis, K., & Isaacs, M. (1989). *Towards a culturally competent system of care: A monograph on effective services for minority children who are severely emotionally disturbed*. Washington, DC: Georgetown University Child Development Center, CASSP Technical Assistance Center.

Denboba, D. L., Bragdon, J. L., Epstein, L. G., Garthright, K., & Goldman, T. M. (1998). Reducing health disparities through cultural competence. *Journal of Health Education, 29*(sup1), S47-S53. https://doi.org/10.1080/10556699.1998.10603386

Doll, J., Haddad, A. R., Laughlin, A., Todd, M., Packard, K., Yee, J., Harris, B., & Begley, K. (2014). Building inter-professional cultural competence. In R. M. Caron & J. Merrick (Eds.), *Public health: Improving health via inter-professional collaborations* (pp. 37-46). Nova Science Publishers, Inc.

Interprofessional Education Collaborative (IPEC). (2016). *Core competencies for interprofessional collaborative practice: 2016 update.* Washington, DC: Interprofessional Education Collaborative. https://hsc.unm.edu/ipe/resources/ipec-2016-core-competencies.pdf

McElfish, P. A., Moore, R., Buron, B., Hudson, J., Long, C. R., Purvis, R. S., Schulz, T. K., Rowland, B., & Warmack, T. S. (2018). Integrating interprofessional education and cultural competency training to address health disparities. *Teaching and Learning in Medicine, 30*(2), 213-222. https://doi.org/10.1080/10401334.2017.1365717

McMillan, J. H., & Schumacher, S. (2010). *Research in education: Evidence-based inquiry.* MyEducationLab Series. Pearson.

Oelke, N., Thurston, W., & Arthur, N. (2013). Intersections between interprofessional practice, cultural competency and primary healthcare. *Journal of Interprofessional Care, 27,* 367-372. https://doi.org/10.3109/13561820.2013.785502

Patton, M. Q. (2002). *Qualitative research and evaluation methods*. SAGE Publications, Inc.

Puebla Fortier, J., Shaw Taylor, Y., Convissor, R., & Pacheco, G. (1999). *Assuring cultural competence in health care. Recommendations for national standards and an outcomes focused research agenda.* Washington: Office of Minority Health, US Department of Health and Human Services.

Smedley, B. D., Stith, A. Y., & Nelson, A. R. (Eds.). (2003). *Unequal treatment: Confronting racial and ethnic disparities in health care.* Washington, DC: Institute of Medicine, Committee on Understanding and Eliminating Racial and Ethnic Disparities in Health Care, National Academies Press.

US Department of Health and Human Services (DHHS), Office of Minority Health (OMH). (2013). *National standards for culturally and linguistically appropriate services in health and health care: A blueprint for advancing and sustaining CLAS policy and practice.* https://www.thinkculturalhealth.hhs.gov/Content/clas.asp/.

VERBI Software. (2019). MAXQDA 2020 [computer software]. Berlin, Germany: VERBI Software. Available from maxqda.com.

The Development and Pilot Testing of an Evidence-Based Cardiovascular Disease Risk-Prevention Program to Promote Healthy Lifestyle Behaviors Among African-American College Students – *Rams Have HEART*

Vanessa Duren-Winfield[1†], PhD, MS; Loneke T. Blackman Carr[2], PhD, RD; Georgia A. McCauley[3], PhD, MBA, MT(AMT); Elijah O. Onsomu[4], PhD, MPH, MS; Kristina Roberson[4], DNP, MPA, APRN, FNP-C; John Williams[5], MS; Paul N. Kizakevich[6], MS, PE; Michelle Krzyzanowski[6], PhD; Amanda A. Price[7], PhD

Author Affiliations: [1]Department of Healthcare Management, [3]Department of Clinical Laboratory Science [4]Division of Nursing, [5]Department of Health, Physical Education and Sports Studies, [7]Department of Exercise Physiology, Winston-Salem State University, Winston-Salem, North Carolina; [2]Department of Nutritional Sciences, University of Connecticut, Storrs, Connecticut; [6]RTI International, Research Triangle Park, 3040 E Cornwallis Rd, Durham, North Carolina

Corresponding Author: Elijah O. Onsomu, Division of Nursing, Winston-Salem State University, 601 S. Martin Luther King Jr. Drive, Winston-Salem, NC, 27110 (*onsomue@wssu.edu*)

[†]Deceased August 30, 2019

ABSTRACT

Objectives: Cardiovascular disease (CVD) is the leading cause of death in the United States. Among the risk factors for college students, obesity and physical inactivity are disproportionately high among African Americans (AAs), and while studies of the obesity epidemic have increased in recent years, few target AA college-aged students. This study developed and piloted an evidence-based, 15-week, 3-credit hour, CVD risk-prevention and intervention course, *Rams Have HEART* that used e-learning, web-based technologies, and a mobile application and compared its effects against a control course. **Methods:** Two cohorts were recruited in a two-year period; 124 AA college students voluntarily consented to participate in the study, with n = 63 representing the control group and n = 61 representing the intervention. CVD risk factors were assessed by examining blood markers and anthropometric measurements. Demographic, clinical, and survey data (physical measures, blood marker investigation, and self-report surveys) were collected at baseline, post-intervention, and follow-up over the academic year. **Results:** The mean blood markers for lipid panel and glucose results were within the established optimal range. Intake of fruits and vegetables increased along with knowledge of CVD risk factors; 86% of students enrolled in the intervention passed the course; 100% (n = 61) would recommend it to future students. **Conclusion:** Developing and offering a healthy lifestyle-behavior CVD intervention course to AA college students is feasible and effective in optimizing their awareness of chronic disease risk factors and prompting behavior change.

Keywords: ▪ African American ▪ Cardiovascular Disease Prevention ▪ College Students ▪ Lifestyle Behaviors ▪ Mobile Application

INTRODUCTION

In the United States, cardiovascular disease (CVD) is a significant public health problem (Benjamin et al., 2017; Goldstein et al., 2014), with the annual overall costs estimated at $400 billion and projected to rise to more than $818 billion by 2030 (Benjamin et al., 2017). Furthermore, cardiovascular disease accounts for one in three deaths reported each year (Benjamin et al., 2017; National Center for Health Statistics, 2017).

Strategies that address such CVD risk factors such as hypertension, high cholesterol levels, and smoking can greatly reduce this burden (Benjamin et al., 2017; Farley et al., 2010). Hypertension is defined as a systolic blood pressure ≥140 mm Hg or a diastolic blood pressure ≥90 mm Hg, based on the average of up to three measurements; National Cholesterol Education Program (NCEP) Adult Treatment Panel-III (ATP-III) guidelines classify LDL-C as <160 mg/dL, <130 mg/dL, and <100 mg/dL for high, intermediate, and low risk, respectively (United States Department of Health and Human Services [USDHHS], 2001a). Current cigarette smoking was defined in

persons who reported having smoked ≥100 cigarettes in their lifetime and currently smoke every day, every other day, or some days and had a measured serum cotinine (the primary nicotine metabolite) level >10 ng/mL (USDHHS, 2001a).

About half of Americans (49%) have at least one of these three risk factors (Bairey Merz et al., 2017; Benjamin et al., 2017; Carnethon et al., 2017; Turner et al., 2017). Several other medical conditions and lifestyle choices put people at a higher risk for heart disease, including diabetes, overweight and obesity, poor diet, physical inactivity, and excessive alcohol use. Nearly one-third of US adults are obese or overweight (Flegal et al., 2007; Kumanyika et al., 2008; Lobstein et al., 2017; Ogden et al., 2012a), which affects their physical and social quality of life and strongly influences CVD development (Goff et al., 2014; Poirier et al., 2006). The prevalence obesity, a serious health problem, has more than doubled since 1976 across all demographic strata (Flegal et al., 2012; Wang & Beydoun, 2007). However, the need for treatment is highest among low-income and ethnic minority populations, who have a high burden of obesity but less access to healthcare services (Goldstein et al., 2014; Smith Jr. et al., 2005). Many disease risk factors are amenable to change, and all individuals can reduce their risk of CVD morbidity and mortality, especially if healthful behaviors are established in childhood or adopted in young adulthood (USDHHS, 2001b).

Although studies of the obesity epidemic have increased in recent years, few target college-aged students and, more important, African American (AA) college students, who are disproportionately predisposed to CVD (Holland, Carthron, Duren-Winfield, & Lawrence, 2014). The current literature indicates that most college students are unaware of the risk factors, and some hold false beliefs about the complications (Becker, Bromme, & Jucks, 2008; Collins et al., 2004; Sarpong, Curry, & Williams, 2017). Previous reports indicate that college students do not accurately perceive their own risk factors and rate them as less dangerous than their peers (Goff et al., 2014; Green et al., 2003). In general, studies often overlook young adults (Tran & Zimmerman, 2015). despite research showing that plaque formation in young adulthood can lead to coronary heart disease as they approach middle-age (Liu et al., 2012; Raynor et al., 2013). Awareness of prevention and intervention strategies, such as the Million Hearts project (Million Hearts, n.d.), Healthy People 2020 (Office of Disease Prevention and Health Promotion [ODPHP], n.d.), and guidelines from the National Heart, Lung, and Blood Institute (NHLBI) and the American Heart Association (AHA) (Goff et al., 2014), could reduce CVD mortality and morbidity among this population.

This pilot study describes the development and methodology of a subject-preference, controlled, prospective trial of a CVD intervention called *Rams Have HEART*. This name "was selected based on the following premise: the ram represents our university's mascot, and "have heart" denotes the fact we are serious about the "heart" health of our students" (Valentine et al., 2012, p. 187). *Rams Have HEART* was implemented in the General Education Curriculum (GEC) at a Historically Black College/University (HBCU) in the US southeast. The study was designed

to test whether incorporating knowledge and awareness of CVD risk factors in a 15 week, 3-credit hour course would increase participants' physical activity and fruit and vegetable intake and enhance their blood marker results as compared to a control course. Preliminary results are reported but not for final outcomes, anthropometric measurements, and blood marker data.

Obesity is a significant risk factor for CVD, the leading cause of death in the US, especially among AAs (Flegal et al., 2012; Lloyd-Jones, 2009; Ogden et al., 2012a). It rarely manifests in childhood and adolescence, but risk factors and behaviors that accelerate the development of atherosclerosis begin in childhood, according to the NHLBI Expert Panel on cardiovascular health (Expert Panel, 2011). Obesity disparities are prominent in youth; 70 percent of overweight youth are overweight when they become adults. Innovative approaches to prevent obesity early in life are urgently needed (Expert Panel, 2011; ODPHP, n.d.).

Based on NHANES data, overweight and obesity prevalence differs by racial/ethnic group among women, children, and adolescents (Hales et al., 2017; Ogden et al., 2012b). The prevalence among men did not differ by racial ethnicity, but almost 58 percent of non-Hispanic black women aged 40 to 59 years were obese compared to 38 percent of non-Hispanic white women. Among children and adolescents up to age 20, the CDC uses the term *overweight* rather than *obesity* and defines overweight as a BMI at or above the 95th percentile of sex-specific BMI-for-age values from the CDC growth charts (Hales et al., 2017; Kuczmarski, 2002; Ogden et al., 2012a). Data reveal differences by racial/ethnic group for both sexes.

The transition from adolescence to young adulthood is associated with increased stress and such health risks as poor diet, physical inactivity, overweight, and obesity, particularly among AAs, who have a higher propensity to develop CVD. Interventions are sorely needed to help them to understand the effect of CVD risk factors on their future health profile; to learn how to assess a family history of CVD, obesity, health behaviors, and lifestyle choices; and to develop self-efficacy to adopt behaviors that will improve life-long health. According to the National Center of Educational Statistics (National Center for Educational Statistics, n.d.). approximately 75 percent of Black college graduates attended an HBCU, making them an ideal venue for reaching this population. At the host HBCU, over 75 percent (>4,650) of students are AA, and 63 percent self-report being overweight or obese (Valentineet al., 2012).

The rationale for implementing health-promotion interventions for AA college students is clear. Preventing obesity and related co-morbidities early on has the greatest long-term payoff in years of healthy life. Although relatively few AA students participated (American College Health Association, 2009) provides the methodology for the development and pilot testing of *Rams Have Heart* for AA students enrolled at an HBCU. The intervention incorporates didactic and e-learning technology strategies that align with the evidence-based Centers for Medicaid & Medicare Services (CMS) Quality Improvement Organization (QIO) toolkit, *Reducing Cardiac Risk Factors*, as well as the Million Hearts Initiative (Million Hearts, n.d.), Healthy People 2020 (ODPHP, n.d.), and the NHLBI and AHA guidelines (Goff et al., 2014).

Rams Have Heart relies on two methods of information transfer: 1) a 15-week, CVD prevention, healthy lifestyle intervention focused on diet and physical activity; and 2) e-learning and web-based health resources. The intervention course was approved by the university's Academic Standards and Curriculum Committee. The mobile application was designed as a tool for self-monitoring and self-motivating healthy behaviors (Eckhoff, 2015; Kizakevich et al., 2012). Student Health Coaches (SHCs) led the intervention and along with research assistants created added value as allied health students gained exposure to research (Duren-Winfield, et al., 2011).

The study aimed 1) to assess CVD risk factors among AA college students by examining blood markers; and 2) to pilot test the effects of a 15-week, CVD risk-prevention intervention administered as a 3-credit hour, semester-long course versus a control course on two cohorts of AA college students. We hypothesize that, compared to the control group, students enrolled in the evidence-based CVD health curriculum will adopt better health behaviors (increased fruit and vegetable intake, physical activity, cardiovascular fitness, and sleep quality and reduced stress) and improve their anthropometric measurements (BMI and waist circumference) and blood markers (total cholesterol, triglycerides, high-density lipoprotein [HDL], low-density lipoprotein [LDL], and glucose). The overarching CVD prevention goals entail promoting healthy eating, increasing physical activity patterns, and lowering BMI.

METHODS

Theoretical Framework

The proposed intervention is based on the Health Belief Model (Rosenstock, 1988) and constructs from Social Cognitive Theory (Bandura, 2001). This model suggests that readiness and motivation to change have both cognitive and emotional components: perceived susceptibility and seriousness about a potential health problem; perceived benefits of, and barriers to, taking action; and cues to action and self-efficacy. The experimental CVD curriculum uses unique, stimulating, active learning experiences to raise awareness about personal and family CVD risk factors. This elevated awareness may influence perceived susceptibility and increase cues to action. Small group classroom discussions of the benefits of, and barriers to, increasing self-efficacy are used to promote readiness and motivation to change behavior.

Study Design and Recruitment

The study design was a subject-preference, controlled, prospective trial of a CVD intervention conducted in AA college students attending a southeastern HBCU and approved by its IRB. Students between the ages of 17-26 (mean age =18) voluntarily enrolled in either the CVD intervention

or control group. Students were excluded if they were not African American or aged ≤ 17 years, pregnant, or identifying a physical or health condition contraindicated because of possible health risks and limited safeguards for this study population.

Recruitment occurred during the Fall Semester 2016 and 2017. Faculty advisors across the university were informed of the new general education CVD course, Exercise Science (EXS) 1301, Lifestyle Behaviors for a Healthy Heart (intervention). They informed students of the course during the advisement period, and students were enrolled. Likewise, students voluntarily enrolled in the control course, Health Education (HED) 1301, Concepts of Health (control), a basic course covering adoption and maintenance of healthy behaviors without any additional information on CVD risk factors.

The principal investigators obtained informed consent from both the intervention and control groups two weeks after the semester began, delivering a complete overview of the study in a 30-minute PowerPoint presentation. Informed consent forms were reviewed, and each student participant received a copy for future reference. Students understood that if they consented, they were enrolled in the study, not just the class, and could decline participation at any time. Everyone consented. At baseline, post-intervention, and follow-up data collections, participants received a $20 gift card incentive. The original recruitment goal was 50 students per cohort for Fall 2016 and Fall 2017. This goal was exceeded with an enrollment of 63 students for Fall 2016 (cohort 1 [control group = 33; intervention = 30]) and 61 for Fall 2017 (cohort 2 [control group = 31; intervention = 30]).

Curriculum and Mobile Application Development

The curriculum was aligned with the ABCs of the Million Hearts™ Initiative (Million Hearts, n.d.) and developed using evidence-based information from the CMS QIO Toolkit, which provides educational resources to prevent and reduce cardiac risk factors, such as hypertension, smoking, and high cholesterol, and resources to increase heart-healthy behaviors. The content focused on CVD risk factors, diet, physical activity, and their relation to weight reduction, risk prevention, and heart-healthy behaviors. The course was taught two days a week, Tuesday and Thursday, from 9:30 A.M. to 10:45 A.M. Its three units, Understanding Healthy Lifestyle Behaviors, Behavior Modifications, and Cardiovascular Disease Risk Factors, introduced the students to fundamental aspects of cardiovascular health, wellness, fitness, and healthy lifestyle behaviors using evidence-based health data easily accessible to the public at no cost. With emphasis on lifestyle modifications to promote heart health and overall health and wellness, the course prepared undergraduate students to 1) calculate CVD risk factors and to understand how lifestyle behaviors contribute to chronic disease; 2) organize and to analyze data; 3) interpret quantitative information and to draw conclusions; and 4) evaluate the presentation of health data in mass media, e-learning, and web-based sources.

Teaching strategies included high-impact, active learning practices that promote deep learning and enhance student engagement and retention (Kuh et al., 2015). Written materials included lesson plans for the instructor/ interventionist, and materials for student participants were to be read prior to class meetings; homework was to be completed after a topic was presented. Content themes included: Who is at risk for CVD? What are CVD risk factors? What is the role of physical activity and healthy eating (fruits & veggies)? What is the clinical treatment for CVD? How can blood pressure be controlled and cholesterol managed? How can we stop smoking? Weekly experiential activities involved CVD risk self-assessment to raise awareness and to cue action. Cooking demonstrations, guest speakers, weekly physical activity (PA) in the gym, and other high-impact activities made the class engaging and interesting. The use of e-learning, web-based technology, and the university's Learning Management Systems, Blackboard, were integral components, useful in promoting diet change and PA participation.

Rams Have HEART Mobile Application

In collaboration with Research Triangle Institute (RTI International), a mobile app, compatible with any type or style of smart phone, was designed as a tool for self-monitoring and self-motivating healthy behaviors (Eckhoff et al., 2015; Kizakevich et al., 2012; Polishook, 2005; Ramsden, 2005). College students arrive on campus with mobile devices, and their sheer versatility and inherent appeal presented a very promising and exciting vehicle for behavior change and health education (Barnwell, 2016; Duren-Winfield et al., 2015).

The *Rams Have Heart* app includes a simple menu for quick data entry (see Figure 1a). Daily tracking of fruit and vegetable consumption (FVC; see Figure 2) and PA (see Figure 3) uses similar data entry forms. Each has a dynamic graphic at the top with an icon that moves toward the recommended daily target. As users enter data throughout the day, the icon advances until reaching the daily goal. Since data suggest users sometimes miss a day or two, a method for entering recall data for up to two previous days was included. A trend-charting feature provides a historical view of the past two months' data (see Figure 4). Additional functions include daily reminders, data transmission, a BMI calculator (see Figures 5 & 6), and educational materials (see Figure 6).

Instruments and Measurements

Baseline data were collected within the first month of enrollment. Post-intervention data for cohort 1 were collected at 6 and 12 months. Cohorts 2 completed a baseline assessment and post-intervention and follow-up assessments at ˜3 and ˜8 months, respectively, to coincide with the end of the fall and spring semesters of the 2017-2018 academic year.

Demographic information collected at baseline included age, current health status, past medical history, and family history. Each student's blood pressure, heart rate, BMI (height and weight),

Figure 1. Home screen with friendly icons and clearly-defined task menu
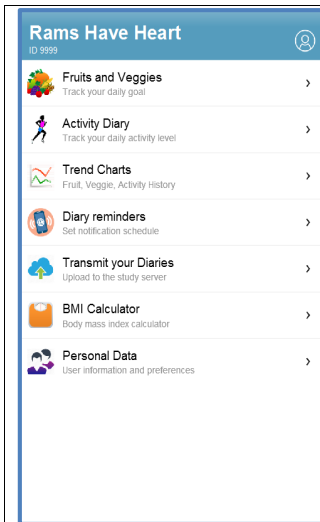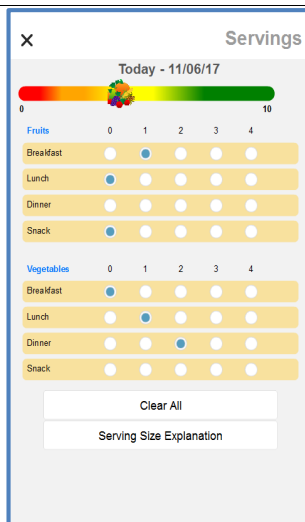

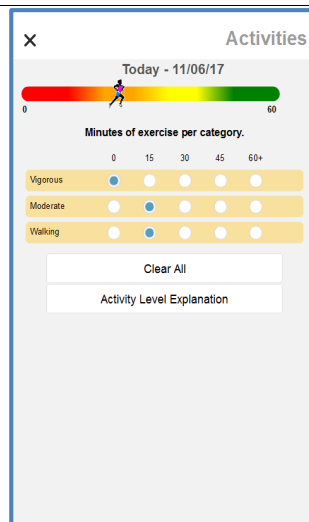Figure 2. Daily tracking of fruit and vegetable consumption.

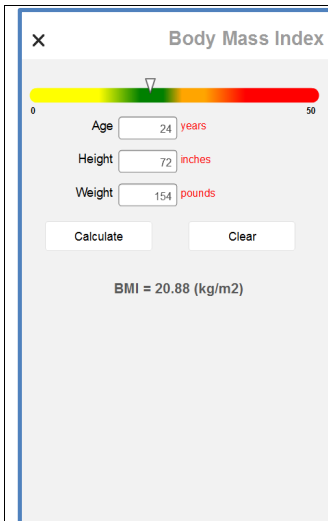Figure 3. Daily tracking of physical activity by level of effort.

Figure 4. Trend display for past two months of FVC and PA data.
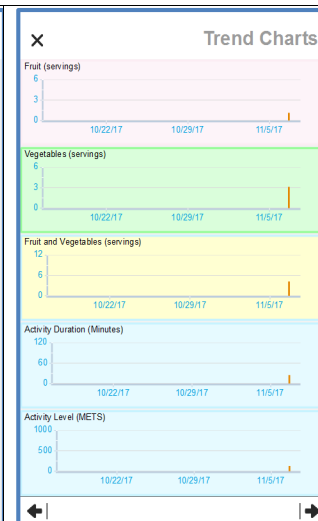
Figure 5. Body mass index (BMI) calculator with comparison of personal BMI to normative data.
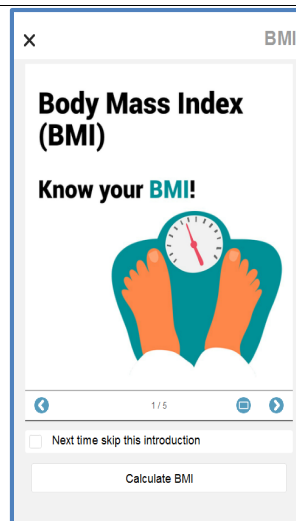
Figure 6. Educational materials are provided for BMI, FVC and PA.

waist circumference, cardiovascular fitness, lipids, and glucose were measured. Data were managed using the Personal Health Intervention Tool (PHIT) developed by our partners at Research Triangle Institute International, Inc. (RTI International, Kizakevich et al., 2012). PHIT diaries were employed for daily recall of food and drink consumption, especially fruits and vegetables, and physical activity (Eckhoff et al., 2015; Kizakevich et al., 2008). Questionnaires administered at each timepoint included the Pittsburgh Sleep Quality Index (PSQI), Perceived Stress Scale (PSS-10), and International Physical Activity Questionnaire (IPAQ). Rams Have Heart App Evaluation Questionnaire was also administered at one timepoint for each cohort to evaluate the performance and effectiveness of the app.

Physical Measures

Resting Heart Rate. With the subject seated in a relaxed position, heart rate was assessed at the radial pulse. The researcher's index finger, placed on the inside of the subject's right wrist, counted the number of beats per minute for a full minute.

Resting Blood Pressure. Systolic (SBP) and diastolic (DBP) blood pressure were assessed using an automatic device. The subject was seated with the cuff wrapped around the right arm for at least five minutes. The average of two measures was used.

Height. A stadiometer was used to determine height to the nearest eighth of an inch without shoes.

Weight. Body weight, without shoes, was measured to the nearest half pound by a standard scale. Height and weight information was used to determine BMI (weight [kg]/height [m2]).

Waist Circumference. The waist was recorded to the nearest centimeter with a spring-loaded tape placed superior to the iliac crest, following the NHANES procedure.

Queen's College Step Test. The Queen's College Step Test was used to assess cardiovascular fitness (McArdle et all, 1972). Participants were asked to step on a standardized stair for 3 minutes to a metronome beat based on the participant's gender (females - rate of 22 steps per minute, and male – rate of 24 steps per minute). Afterward, radial pulse was used to estimate VO2 max, or maximal oxygen consumption. This test has been repeatedly validated as a tool for estimating VO2 max.

Blood Markers

Participants were asked to consent to a fasting blood draw to measure glucose and cholesterol; they had the option to refuse. The Clinical Laboratory Science (CLS) Department collected the samples via finger dermal puncture. The CLS team assisted with phlebotomy collection and analysis of participants' lipid profiles and glucose values. A CLS specialist calibrated all testing

instruments for accuracy and performed quality control. The palmar surface of the distal (end) segment of the third (middle) or fourth (ring) finger was prepped with 70 percent isopropyl alcohol and allowed to dry. A collection device punctured the fingertip to obtain a capillary blood sample, placed on a Cholestech device, which provided total cholesterol, HDL cholesterol, non-HDL cholesterol, triglycerides, LDL cholesterol, TC/HDL ratio (calculated using measures taken with Cholestech), and glucose. The CLS specialist disposed of sharps (collection devices) in a puncture-proof container and testing devices, alcohol swabs, and any other material that came into contact with blood in biohazardous waste receptacles.

Validated Questionnaires - Administered at Each Timepoint

Pittsburgh Sleep Quality Index. The PSQI (Buysse et al., 1989) is a self-rated questionnaire that assesses sleep quality and disturbances over one month. Nineteen items generate seven "component" scores: subjective sleep quality, sleep latency, sleep duration, habitual sleep efficiency, sleep disturbances, use of sleeping medication, and daytime dysfunction. The sum of the scores for these seven components yields one global score.

Perceived Stress Scale. The PSS (Cohen, Kamarck, & Mermelstein., 1983) is the most widely used psychological instrument to measure the degree to which an individual considers situations stressful. Items were designed to tap how unpredictable, uncontrollable, and overloaded respondents find their lives. The scale also includes a number of direct queries about current levels of experienced stress; relatively free of content specific to any subpopulation, they ask about feelings and thoughts during the last month and how often respondents felt a certain way.

International Physical Activity Questionnaire. The IPAQ (Craig et al., 2003), a reliable, internationally validated instrument, will be used to evaluate between-group differences in physical activity. The short form is a 7-item index that asks respondents the amount of time per day spent in vigorous and moderate-intensity activities and walking on each of the seven days prior to the interview. Different levels of physical activity are assigned metabolic equivalent (MET) scores based on the Compendium of Physical Activity (Ainsworth et al., 2000) and can be converted to both continuous and categorical values.

Questionnaire - Administered at One Timepoint:

Rams Have Heart *App Evaluation Questionnaire.* This questionnaire evaluated the mobile app developed specifically for this project. The 6-item assessment captured both quantitative and qualitative feedback about the app's performance from the student perspective. Data will inform the development of future health behavior apps for college students and revision of the existing app for campus use after this study's conclusion.

Data Collection

At three endpoints - baseline, post-intervention, and follow-up - each student's blood pressure, pulse, respiration, BMI (height and weight), waist circumference, cardiovascular fitness, lipids, and glucose were measured, and their daily FVC and PA reports on the app and self-reported survey data were collected. The surveys included the International PA Questionnaire, Perceived Stress Scale, and Pittsburgh Sleep Quality Index. In the final analysis paper, only students with all data time points (baseline, post-intervention, and follow-up) will be included in the analysis.

RESULTS

The 15-week *Rams Have HEART* program, focused on understanding and remediating CVD risk factors through diet and physical activity, was developed and successfully implemented using e-learning and web-based health resources. A user-friendly mobile application was designed to capture fruit and vegetable consumption behaviors and physical activity. The intervention engaged AA students (n = 124), mostly female (73%), in two cohorts (cohort 1, n = 63; cohort 2, n = 61) representing the two semesters in which the program was offered, fall 2016 and 2017. A majority of the intervention students (86%) passed the course and increased their FVC and PA. In this sample of AA college students were aged 18.19 years ± 1.06SD. Overall, students responded positively about their satisfaction with the course and its impact on their attitude, changing their behaviors, and taking more responsibility for their health as follows:

1. "I would recommend this course to future students." (100% agreement)
2. "The course encouraged me to stay active and eat healthy." (90% agreement)
3. "Knowing the laboratory values for the blood lipid profile and glucose changed my attitude toward maintaining a healthy lifestyle." (90% agreement)
4. "I will take action to improve my health to feel better and live longer." (100% agreement), and
5. "I have more responsibility for my health than my healthcare provider." (100% agreement)

CVD risk factors were assessed by examining blood markers and anthropometrics. However, not all students participated in all aspects of the CVD screening (n = 114). The mean systolic blood pressure was 117.21 ± 12.45SD; diastolic blood pressure = 69.75 ± 9.04SD, age = 18.19 ± 1.06SD, BMI = 27.89 ± 17.73SD, and weight = 162.02lbs ± 40.02SD (see Table 1).

Table 1: Descriptive Statistics.

Variable	N	Minimum	Maximum	Mean	Std. Deviation
Age	114	17	26	18.19	1.063
SBP	114	93	159	117.21	12.453
DBP	114	52	90	69.75	9.041
Height in centimeters	114	143	190.5	166.842	8.9976
Heart Rate	112	49	115	74.81	11.725
Waist in centimeters	112	59	115	82.023	12.0394
Weight in kilograms	114	43.3	555.9	77.714	48.6631
Waist in inches	114	0	45.3	31.726	6.3405
Height in inches	114	56.3	75	65.686	3.5424
Weight in pounds	114	95.5	337.4	162.02	40.02
BMI	114	16.3	205.4	27.886	17.7326
PSS10	110	2	32	15.4	6.315
Valid N (listwise)	106				

DISCUSSION

To reduce the risk of developing CVD, the American Heart Association recommends knowing your cholesterol and glucose values. A lipid panel plus glucose was obtained from each participant to assess the contribution of blood markers to CVD risk. The results indicate that the mean participant samples were within the reference range of the lipid profile and glucose blood markers for cohorts 1 and 2 (see Table 2). However, the minimum and maximum results were concerning and indicated that these participants were at high risk for CVD and diabetes.

This study involved the development and pilot testing of a CVD risk-factor prevention program using an evidence-based curriculum and a combination of didactic and technology tools to enhance physical activity and healthy eating. Its strengths support its translation to other settings with populations at high risk for CVD and its complications; its potential for generalizability and impact is high. Students improved their health behaviors and gained the tools necessary to improve their own chronic disease risk profiles and to identify chronic disease symptoms and risk factors in others. Additionally, they may be able to use their ability to record and to assess these blood markers and anthropometrics as a solid baseline for their ongoing healthcare.

The study had two limitations. First, data were collected at different timepoints for each cohort. Cohort 1 data collection occurred at baseline, 6, and 12 months, which did not coincide with the timing of course delivery and contributed to a loss of follow-up data on students who did

Table 2: Blood Marker Assessments.

BLOOD MARKER	TC[¥]	HDL[β]	LDL[ε]	TR[G]†	TC/HDL Ratio	Glucose
Optimal Range (fasting)	<170 mg/dl	≥50 mg/dl	<130 mg/dl	<100 mg/dl	≤4.5	<100 mg/dl
COHORT 1 Pre-Intervention N = 58 Mean (x⁻)	141	52	72	82	3.2	90
COHORT 1 Post-Intervention N = 18 Mean(x⁻)	153	58	80	94	2.7	87
COHORT 2 Pre-Intervention N = 59 Mean (x⁻)	149	52	81	95	3	90
COHORT 2 Post-Intervention N = 51 Mean (x⁻)	152	59	92	92	2.7	92

Notes: [¥]TC (Total Cholesterol); [β]HDL (High Density Lipoprotein); [ε]LDL (Low Density Lipoprotein); [†]TRG (Triglycerides);

not return to school after winter or summer recess. Secondly, retention of college students to the post assessment was limited because they were reluctant to continue using the mobile app after the 15-week course ended. However, in a systematic review and meta-analysis study by (Plotnikoff et al., 2015) investigating the impact of lifestyle interventions targeting improvement of health outcomes (specifically physical activity, diet, or weight) for college students found positive health outcomes despite retention challenges in some of the studies used.

Every effort was made to enhance cohort 2's collection of follow-up data and to learn from experience through process evaluation. Upon our request, the National Institutes of Health (NIH) granted approval to conduct the CVD assessments during the academic year, while students were

still enrolled in the course, thereby avoiding the summer months when they were not in school and did not input data into the mobile app. The new timepoints implemented at the beginning of the fall semester (August 2017) for cohort 2 allowed data collection while they were enrolled in the course. Instructors accompanied them to the baseline and post-intervention screenings during their regular class period. Continuing data entry and returning for the final follow-up assessment at the end of the academic year was at the students' discretion. To mediate data-entry reluctance and maintain retention for the follow-up collection, research assistants assigned to a specific group of students delivered bi-weekly motivational text messages and email reminders. Monthly incentives of $20 gift cards were offered to the three participants who entered the most data in the *Rams Have Heart* mobile app. In spite of these efforts, some students were unwilling to continue entering the data after completing the course, citing course load, studying, after-school jobs, and extracurricular activities as impediments. However, many more cohort 2 students returned for the final follow-up assessment (cohort 1, n = 18; cohort 2, n = 51).

CONCLUSION

AA adults are disproportionately vulnerable to chronic CVD disease, and the need for interventions to help young AA adults understand the importance of CVD risk factors for their future health profile is great. They must learn how to assess a family history of CVD, obesity, health behaviors, and lifestyle choices and develop the requisite self-efficacy to adopt behavioral changes that will improve their life-long health. AA college students are an ideal target population for risk factor-reduction programs, especially since more than half of the study population had one or more CVD risk factors. The pilot study showed evidence that the *Rams Have HEART* assessment, prevention, and health-promotion intervention was achievable and acceptable to participants. Further, university administrators recognized the need for such a program and allowed the course *EXS1301 Lifestyle Behaviors for a Healthy Heart* to remain a part of the General Education Curriculum (GEC) for all students.

The investigative team intends to develop a full-scale intervention using the NIH R01 mechanism and potentially partnering with other HBCUs to implement it.

REFERENCES

American College Health Association. (2009). American College Health Association-National College Health Assessment spring 2008 reference group data report (abridged): The American College Health Association. *Journal of American College Health, 57*(5), 477-488. https://doi.org/10.3200/JACH.57.5.477-488

Ainsworth, B. E., Haskell, W. L., Whitt, M. C., Irwin, M. L., Swartz, A. M., Strath, S. J., O'Brien, W. L., Bassett Jr, D. R., Schmitz, K. H., Emplaincourt, P. O., Jacobs Jr, D. R., & Leon, A. S. (2000). Compendium of physical activities: An update of activity codes and MET intensities. *Medicine & Science in Sports & Exercise, 32*(9 Suppl), S498-S504. https://doi.org/10.1097/00005768-200009001-00009

Bairey Merz, C. N., Andersen, H., Sprague, E., Burns, A., Keida, M., Walsh, M., N., Greenberger, P., Campbell, S., Pollin, I., McCullough, C., Brown, N., Jenkins, M., Redberg, R., Johnson, P., & Robinson, B. (2017). Knowledge, attitudes, and beliefs regarding cardiovascular disease in women: The Women's Heart Alliance. *Journal of the American College of Cardiology, 70*(2), 123-132. https://doi.org/10.1016/j.jacc.2017.05.024

Bandura A. (2001). Social cognitive theory: An agentive perspective. *Annual Review of Psychology, 52*, 1-26. https://doi.org/10.1146/annurev.psych.52.1.1

Barnwell, P. (2016, April 27). *Do smartphones have a place in the classroom?* The Atlantic. https://www.theatlantic.com/education/archive/2016/04/do-smartphones-have-a-place-in-the-classroom/480231/

Becker, B-M., Bromme, R., & Jucks, R. (2008). College students' knowledge of concepts related to the metabolic syndrome. *Psychology, Health & Medicine, 13*(3), 367-379. https://doi.org/10.1080/13548500701405525

Benjamin, E. J., Blaha, M. J., Chiuve, S. E., Cushman, M., Das, S. R., Deo, R., de Ferranti, S. D., Floyd, J., Fornage, M., Gillespie, C., Isasi, C. R., Jiménez, M. C., Jordan, L. C., Judd, S. E., Lackland, D., Lichtman, J. H., Lisabeth, L., Liu, S., Longenecker, C. T., . . . the American Heart Association Statistics Committee and Stroke Statistics Subcommittee. (2017). Heart disease and stroke statistics—2017 update: A report from the American Heart Association. *Circulation, 135*(10), e146–e603. https://doi.org/10.1161/CIR.0000000000000485

Buysse, D. J., Reynolds III, C. F., Monk, T. H., Berman, S. R., & Kupfer, D. J. (1989). The Pittsburgh Sleep Quality Index: A new instrument for psychiatric practice and research. *Psychiatry Research, 28*(2), 193-213. https://doi.org/10.1016/0165-1781(89)90047-4

Carnethon, M. R., Pu, J., Howard, G., Albert, M. A., Anderson, C. A. M., Bertoni, A. G., Mujahid, H. S., Palaniappan, L., Taylor, H. A., Willis, M., & Yancy, C. W. (2017). Cardiovascular health in African Americans: A scientific statement from the American Heart Association. *Circulation, 136*(21), e393-e423. https://doi.org/10.1161/CIR.0000000000000534

Cohen, S., Kamarck, T., & Mermelstein, R. (1983). A global measure of perceived stress. *Journal of Health and Social Behavior, 24*(4), 385-396. https://doi.org/10.2307/2136404

Collins, K. M., Dantico, M., Shearer, N. B. C., & Mossman, K. L. (2004). Heart disease awareness among college students. *Journal of Community Health, 29*(5), 405-420. https://doi.org/10.1023/B:JOHE.0000038655.19448.b2

Craig, C. L., Marshall, A. L., Sjöström, M., Bauman, A. E., Booth, M. L., Ainsworth, B. E.,

Pratt, M., Ekelund, U., Yngve, A., Sallis, J. S., & Oja, P. (2003). International physical activity questionnaire: 12-country reliability and validity. *Medicine & Science in Sports & Exercise, 35*(8), 1381-1395. https://doi.org/10.1249/01.MSS.0000078924.61453.FB

Duren-Winfield, V., Nance, K., Onsomu, E. O., Valentine, P., McKenzie, M., & Roberts, A. (2011). Champions for outreach and advocacy for campus and community health: A college-based peer health COACH program. *The Journal of Community Engagement and Higher Education, 3*(1), 1-11.

Duren-Winfield, V., Onsomu, E. O., Case, D. L., Pignone, M., & Miller Jr, D. (2015). Health literacy and computer-assisted instruction: Usability and patient preference. *Journal of Health Communication, 20*(4), 491-498. https://doi.org/10.1080/10810730.2014.976322

Eckhoff, R. P., Kizakevich, P. N., Bakalov, V. D., Zhang, Y., Bryant, S. P., & Hobbs, M. A. (2015). A platform to build mobile health apps: The Personal Health Intervention Toolkit (PHIT). *JMIR Mhealth Uhealth* 2015; 3(2), e46. https://doi.org/10.2196/mhealth.4202

Expert Panel. (2011). Expert Panel on Integrated Guidelines for Cardiovascular Health and Risk Reduction in Children and Adolescents: Summary Report. *Pediatrics, 128*(Suppl. 5), S213-S256. https://doi.org/10.1542/peds.2009-2107C

Farley, T. A., Dalal, M. A., Mostashari, F., & Frieden, T. R. (2010). Deaths preventable in the U.S. by improvements in use of clinical preventive services. *American Journal of Preventive Medicine, 38*(6), 600-609. https://doi.org/10.1016/j.amepre.2010.02.016

Flegal, K. M., Carroll, M. D., Kit, B. K., & Ogden, C. L. (2012). Prevalence of obesity and trends in the distribution of body mass index among US adults, 1999-2010. *JAMA, 307*(5),491-497. https://doi.org/10.1001/jama.2012.39

Flegal, K. M., Graubard, B. I., Williamson, D. F., & Gail, M. H. (2007). Cause-specific excess deaths associated with underweight, overweight, and obesity. *JAMA, 298*(17), 2028-2037. https://doi.org/10.1001/jama.298.17.2028

Goff, D. C., Lloyd-Jones, D. M., Bennett, G., Coady, S., D'Agostino, R. B., Gibbons, R., Greenland, P., Lackland, D. T., Levy, D., O'Donnell, C. J., Robinson, J. G., Schwartz, J. S., Shero, S. T., Smith Jr, S. C., Sorlie, P., Stone, N. J., & Wilson, P. W. F. (2014). 2013 ACC/AHA guideline on the assessment of cardiovascular risk: A report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines. *Circulation, 129*(25 Suppl. 2), S49-S73. https://doi.org/10.1161/01.cir.0000437741.48606.98

Goldstein, C. M., Xie, S. S., Hawkins, M. A. W., & Hughes, J. W. (2014). Reducing risk for cardiovascular disease: Negative health behaviors in college students. *Emerging Adulthood, 3*(1), 24-36. https://doi.org/10.1177/2167696814536894

Green, J. S., Grant, M., Hill, K. L., Brizzolara, J., & Belmont, B. (2003). Heart disease risk perception in college men and women. *Journal of American College Health, 51*(5), 207-211. https://doi.org/10.1080/07448480309596352

Hales, C. M., Carroll, M. D., Fryar, C. D., & Ogden, C. L. (2017). Prevalence of obesity among adults and youth: United States, 2015–2016. *NCHS Data Brief, 288*, 1-8. https://www.cdc.gov/nchs/data/databriefs/db288.pdf

Holland, C., Carthron, D. L., Duren-Winfield, V., & Lawrence, W. (2014). An experiential cardiovascular health education program for African-American college students. *Association of Black Nursing Faculty Journal, 25*(2), 52-56.

Kizakevich, P., Whitmore, R. W., Johnson, T. R., McCartney, M. L., Duncan, S. E., Zhang, Y., Furberg, R. D., & Levine, B. (2008, October). *Mobile technologies for acquiring exposure-related environmental, human behavior, and health status data during daily life.* American Public Health Association Conference, San Diego, CA.

Kizakevich, P. N., Hubal, R., Brown, J., Lyden, J., Spira, J., Eckhoff, R., Zhang, Y., Bryant, S., Munoz, G. (2012). PHIT for duty, a mobile approach for psychological health intervention. *Studies in Health Technology and Informatics, 181*, 268–272. https://doi.org/10.3233/978-1-61499-121-2-268

Kuczmarski, R. J., Ogden, C. L., Guo, S. S., Grummer-Strawn, L. M., Flegal, K. M., Mei, Z., Wei, R., Curtin, L. R., Roche, A. F., & Johnson, C. L. (2002). 2000 CDC growth charts for the United States: Methods and development. *Vital Health Statistics, 11*(246). https://www.cdc.gov/growthcharts/2000growthchart-us.pdf

Kuh, G. D., Ikenberry, S. O., Jankowski., N. A., Cain, T. R., Ewell, P.T., Hutchings, P., & Kinzie, J. (2015). *Using evidence of student learning to improve higher education.* Jossey Bass.

Kumanyika, S. K., Obarzanek, E., Stettler, N., Bell, R., Field, A. E., Fortmann, S. P., Franklin, B. A., Gillman, M. W., Lewis, C. E., Poston II, W. C., Stevens, J., & Hong, Y. (2008). Population-based prevention of obesity: The need for comprehensive promotion of healthful eating, physical activity, and energy balance: A scientific statement from American Heart Association Council on Epidemiology and Prevention, Interdisciplinary Committee for Prevention (formerly the expert panel on population and prevention science). *Circulation, 118*(4), 428-464. https://doi.org/10.1161/CIRCULATIONAHA.108.189702

Liu, K., Daviglus, M. L., Lorie, C. M., Colangelo, L. A., Spring, B., Moller, A. C., & Lloyd-Jones, D. M. (2012). Healthy lifestyle through young adulthood and the presence of low cardiovascular disease risk profile in middle age: The Coronary Artery Risk Development in (Young) Adults (CARDIA) Study. *Circulation, 125*(8), 996-1004. https://doi.org/10.1161/CIRCULATIONAHA.111.060681

Lloyd-Jones, D., Adams, R., Carnethon, M., De Simone, G., Ferguson, T. B., Flegal, K., Ford, E., Furie, K., Go, A., Greenlund, K., Haase, N., Hailpern, S., Ho, M., Howard, V., Kissela, B., Kittner, S., Lackland, D., Lisabeth, L., Marelli, A., . . . Hong, Y. (2009). Heart disease and stroke statistics- -2009 update: A report from the American Heart Association Statistics Committee and Stroke Statistics Subcommittee. *Circulation, 119*(3), e21-e181. https://doi.org/10.1161/CIRCULATIONAHA.108.191261

Lobstein, T., Brinsden, H., Gill, T., Kumanyika, S., & Swinburn, B. (2017). Comment: Obesity as a disease – some implications for the World Obesity Federation's advocacy and public health activities. *Obesity Reviews, 18*(7), 724-726. https://doi.org/10.1111/obr .12554

McArdle, W. D., Katch, F. I., Pechar, G. S., Jacobson, L., & Ruck, S. (1972). Reliability and interrelationships between maximal oxygen uptake, physical work capacity and step-test scores in college women. *Medicine and Science in Sports, 4*(4), 182-186. https://doi.org /10.1249/00005768-197200440-00019

Million Hearts. (n.d.). *ABCS of heart health: To reduce the risk of heart attack or stroke.* Retrieved February 5, 2019, from https://millionhearts.hhs.gov/files/4_Steps_Forward_English.pdf

National Center for Educational Statistics. (n.d.). *Historically black colleges and universities.* Retrieved May 30, 2018, from https://nces.ed.gov/fastfacts/display.asp?id=667

National Center for Health Statistics. (2017). *Health, United States, 2016: With chartbook on long-term trends in health.* Retrieved January 23, 2019, from https://www.cdc.gov/nchs/data /hus/hus16.pdf

Office of Disease Prevention and Health Promotion [ODPHP]. (n.d.). *Healthy People 2020.* Retrieved January 23, 2019, from https://www.healthypeople.gov/

Ogden, C. L., Carroll, M. D., Kit, B. K., & Flegal, K. M. (2012a). *Prevalence of obesity in the United States, 2009–2010.* NCHS data brief, no 82. Hyattsville, MD: National Center for Health Statistics. https://www.cdc.gov/nchs/data/databriefs/db82.pdf

Ogden, C. L., Carroll, M. D., Kit, B. K., & Flegal, K. M. (2012b). Prevalence of obesity and trends in body mass index among US children and adolescents, 1999-2010. *JAMA, 307*(5), 483-490. https://doi.org/10.1001/jama.2012.40

Plotnikoff, R. C., Costigan, S. A., Williams, R. L., Hutchesson, M. J., Kennedy, S. G., Robards, S. L., Allen, J., Collins, C. E., Callister, R., & Germov, J. (2015). Effectiveness of interventions targeting physical activity, nutrition and healthy weight for university and college students: a systematic review and meta-analysis. *International Journal of Behavioral Nutrition and Physical Activity volume, 12*, 45. https://doi.org/10.1186/s12966-015-0203-7

Poirier, P., Giles, T. D., Bray, G. A., Hong, Y., Stern, J. S., Pi-Sunyer, F. X., & Eckel, R. H. (2006). Obesity and cardiovascular disease: Pathophysiology, evaluation, and effect of weight loss: An update of the 1997 American Heart Association Scientific Statement on Obesity and Heart Disease from the Obesity Committee of the Council on Nutrition, Physical Activity, and Metabolism. *Circulation, 113*(6), 898-918. https://doi.org/10.1161 /CIRCULATIONAHA.106.171016

Polishook, M. (2005). Handheld composing: Reconceptualizing artistic practice with PDAs. In A. Kukulska-Hulme & J. Traxler, (Eds.), *Mobile learning: A handbook for educators and trainers* (pp. 133-138). Routledge, Taylor Francis Group.

Ramsden, A. (2005). Evaluating a low cost, wireless connected PDA for delivering VLE func-

tionality. In A. Kukulska-Hulme & J. Traxler (Eds.), *Mobile learning: A handbook for educators and trainers* (pp. 84-91). Routledge, Taylor Francis Group.

Raynor, L. A., Schreiner, P. J., Loria, C. M., Carr, J. J., Pletcher, M. J., & Shikany, J. M. (2013). Associations of retrospective and concurrent lipid levels with subclinical atherosclerosis prediction after 20 years of follow-up: The Coronary Artery Risk Development in Young Adults (CARDIA) study. *Annals of Epidemiology, 23*(8), 492-497. https://doi.org/10.1016/j.annepidem.2013.06.003

Rosenstock, I. M., Strecher, V. J., & Becker, M. H. (1988). Social learning theory and the Health Belief Model. *Health Education & Behavior, 15*(2), 175-183. https://doi.org/10.1177/109019818801500203

Sarpong, D. F., Curry, I. Y. & Williams, M. (2017). Assessment of knowledge of critical cardio-vascular risk indicators among college students: Does stage of education matter? *International Journal of Environmental Research and Public Health, 14*(3), 250. https://doi.org/10.3390/ijerph14030250

Smith Jr, S. C., Clark, L. T., Cooper, R. S., Daniels, S. R., Kumanyika, S. K., Ofili, E., Quinones, M. A., Sanchez, E. J., Saunders, E., & Tiukinhoy, S. D. (2005). Discovering the full spectrum of cardiovascular disease: Minority health summit 2003: Report of the obesity, metabolic syndrome, and hypertension writing group. *Circulation, 111,* e134-e139. https://doi.org/10.1161/01.CIR.0000157743.54710.04

Tran, D-M. T., & Zimmerman, L. M. (2015). Cardiovascular risk factors in young adults: A literature review. *Journal of Cardiovascular Nursing, 30*(4), 298-310. https://doi.org/10.1097/JCN.0000000000000150

Turner, L. R., Cicuttini, F., Pearce, C., & Mazza, D. (2017). Cardiovascular disease screening in general practice: General practitioner recording of common risk factors. *Preventive Medicine, 99,* 282-285. https://doi.org/10.1016/j.ypmed.2017.03.004

USDHHS. (2001a). *ATP III guidelines at-a-glance: Quick desk reference.* National cholesterol education program, NIH Publication No. 01-3305, https://www.nhlbi.nih.gov/files/doc/guidelines/atglance.pdf

USDHHS. (2001b). *The surgeon general's call to action to prevent and decrease overweight and obesity.* Rockville, MD: Office of the Surgeon General. https://www.cdc.gov/nccdphp/dnpa/pdf/CalltoAction.pdf

Valentine, P., Duren-Winfield, V., Onsomu, E. O., Hoover, E. L., Cammock, C. E., & Roberts, A. (2012). Promoting heart health: An HBCU collaboration with the Living Heart Foundation and the National Football League Retired Players association. *Journal of the National Medical Association, 104*(3-4), 186-193. https://doi.org/10.1016/S0027-9684(15)30138-3

Wang, Y., & Beydoun, M. A. (2007). The obesity epidemic in the United States--gender, age, socioeconomic, racial/ethnic, and geographic characteristics: A systematic review and meta-regression analysis. *Epidemiologic Reviews, 29*(1), 6-28. https://doi.org/10.1093/epirev/mxm007

Exploring the Inclusion of Cultural Competence, Cultural Humility, and Diversity Concepts as Learning Objectives or Outcomes in Healthcare Curricula

Jennifaye V. Brown[1], PT, PhD, NCS; Kathleen J. Spicer[1], MA; Evan French[1], MA, SPT

Author Affiliations: [1]College of Health Sciences and Professions, School of Rehabilitation and Communications Sciences, Ohio University, Athens, Ohio

Corresponding Author: Jennifaye V. Brown, College of Health Sciences and Professions, School of Rehabilitation and Communications Sciences, Ohio University, 1 Ohio University, Athens, OH 45701 (*info@jvbneuropt.com*)

ABSTRACT

As US racial/ethnic diversity increases, higher education and businesses are incorporating diversity concepts in courses and workforce training with positive outcomes, such as improved learning outcomes and group performance. However, few reports in the literature indicate whether these concepts are introduced and incorporated in healthcare education. This study aimed to evaluate the presence of diversity concepts in healthcare curricula at a midsized university. It found that *cultural competence*, variations thereof (*culturally competent and cultural competencies*), and *cultural humility* mentioned in only eight of the 81 approved course/learning outcomes; diversity and inclusion did not appear. The academy should take note that it is failing to expose graduates to the diversity concepts necessary for equitable, patient-centered care.

Keywords: ▪ Cultural Competence ▪ Cultural Humility ▪ Diversity ▪ Inclusion

INTRODUCTION

By the year 2060, racial/ethnic groups formerly in the minority will comprise an estimated 56.4% of the US population (Colby & Ortman, 2015). Hence, there is an imperative need to address diversity and inclusion in higher education and the workforce. Research on introducing diversity concepts in the general curriculum is vast and associated with many positive outcomes. In a review, Milem and Hakuta (2000) found that integrating diversity concepts in higher education improved learning outcomes in the classroom and fostered changes in the campus environment. Chang (2002a) suggests that courses incorporating diversity prompt students to think critically about such topics as cultural pluralism, class differences, and inequality. Higher education has the opportunity and responsibility to teach concepts of diversity and inclusion as well as cultural competence and cultural humility, guided by explicit learning outcomes or course objectives in syllabi.

The effects of a diverse and inclusive education also have workplace implications. Homan, van Knippenberg, van Kleef, and De Dreu (2007) suggest that members with progressive views regarding diversity may be more likely to improve group performance by seeking out the perspectives of diverse peers. Inclusion activities can also improve an organization's decision-making and communication while alleviating power disparities (Bleich, MacWilliams, & Schmidt, 2015). Implicit biases among the healthcare workforce can substantially obstruct the quality of care, especially as they affect patient/provider interactions, patient outcomes, treatment decisions, and patient treatment adherence (Hall et al., 2015).

Diversity Education and Impact on Workforce

Diversity in higher education and the workforce means being open to differences in race, ethnicity, cultural norms, language, communication style, gender, sexual orientation, physical appearance or abilities, mental abilities, age, socioeconomic status, geographic origins, educational or career aspirations, educational background, work experience, religious and political affiliations, and family dynamics (Bleich et al, 2015; Mazur, 2009; Smith, 2016).

Diversity and inclusivity are not interchangeable concepts. While a diverse culture is open to all human qualities and serves as the framework for changing the dynamics of power and privilege (Chan, 1989; Omatsu, 1994), an inclusive culture allows diverse individuals to be part of those dynamics. Inclusivity collectively implements the processes associated with shared decision-making, eliminates structural barriers to universal engagement, and celebrates differences (Bleich et al., 2015).

Cultural competence can be defined as "the ongoing process in which the healthcare professional continually strives to achieve the ability and availability to effectively work within the cultural context of the client (family, individual, or community)" (Campinha-Bacote, 2002, p. 181). Under this definition, courses should integrate five constructs - cultural awareness, cultural

desire, cultural encounters, cultural knowledge, and cultural skill - and address cultural humility, which "incorporates a lifelong commitment to self-evaluation and self-critique, to redressing the power imbalances in the patient-physician dynamic, and to developing mutually beneficial and non-paternalistic clinical and advocacy partnerships with communities on behalf of individuals and defined populations" (Tervalon & Murray-Garcia, 1998, p. 123).

Through intertwining concepts of diversity, inclusion, cultural humility and cultural competence in the curriculum, higher education can prepare students to promote a more inclusive and culturally aware healthcare workplace. To provide better service and facilitate adherence, all practitioners should learn about persons different from themselves or the process by which to learn about those differences. The result may be better patient health outcomes.

METHODS

Rationale

This study examined the curricular offerings across a college devoted to the health science professions for their use of the keywords diversity, inclusion, cultural competence, and/or cultural humility, and related words/phrases in learning outcomes or course objectives or other parts of their syllabi. The presence or absence of these keywords and related words/phrases may shed light on their pedagogical practices in preparing graduates to treat diverse populations. This paper is the first in a series; it addresses syllabus content, while the next two will address diversity-related learning experiences and assessment approaches, respectively.

The qualitative, retrospective design uses an exploratory framework. Exploratory research is designed to identify the subject of interest in the source material (Behrens, 1997). The initial step was to search for the relevant keywords or concepts in learning outcomes, course objectives, or other syllabus content. Determining the justification for their use or why the instructor of record (IoR) chose to include them was beyond the study's scope. Human subjects were not required; syllabi were the sole data source for analysis.

Setting and Sampling Strategy

The setting was the primary campus of a midwestern university's College of Health Sciences and Professions (CHSP). All in-person, classroom-based, undergraduate or graduate courses with an enrollment greater than five in Fall 2019 were included. Courses that had an enrollment less than five, were not held on the main campus, or did not have start and end dates equivalent to a 16-week semester were excluded. The registrar's office provided a Microsoft® Excel (2019) spreadsheet noting the particulars of these courses. If two or more instructors were listed, all were

contacted by email to verify who was the IoR. When a course had many sections and different instructors of record (IoRs) for each, each section was counted as a separate course. Through purposive sampling, the primary investigator (PI) and a trained research assistant determined that 197 of the 819 CHSP courses offered met sample requirements (see Table 1).

Data Collection

After Institutional Review Board (IRB) approval, the PI and research study advisor (RSA) drafted a document, which was sent to the CHSP Dean, explaining the study's value to curriculum design and pedagogical approaches as a means to address diversity concepts in healthcare curricula. The CHSP Dean discussed these points with school directors and department chairs at two leadership meetings. Attendees were asked to encourage participation through announcements at faculty meetings. In addition, the PI and RSA emailed all relevant department chairs and school directors, asking if they might attend a faculty meeting to explain the study. Email attachments included: 1) a flier to advertise the study, 2) a letter of support drafted by the PI as recommended by the IRB to introduce the intended research and give IoRs a chance to ask questions and make an informed decision whether to participate, and 3) a consent form indicating submission and use of the syllabus in the study for those unable to attend. The PI and RSA distributed packets labeled with the name of the eligible course and its IoR consisting of printed versions of the three emailed attachments if they were not asked to attend a faculty meetings. The PI sent an email invitation on three separate occasions to generate participation from IoRs who received a packet.

Once letters of support and consent forms were received, IoRs were asked to email the course syllabus to the PI. The PI and another trained researcher looked for the keywords and related words/phrases, including the previously mentioned terms associated with diverse representation in education and employment (Bleich et al., 2015; Mazur, 2009; Smith, 2016) and other terms, such as stereotype or LBGTQ, denoting lesbian, bisexual, gay, transgender and queer. Data collection ended on June 30, 2020.

Confirmation of Validity and Reliability

To establish data validity, the researchers used triangulation. Triangulation requires the use of several resources to study the same question (Marshall & Rossman, 2011). Two researchers independently confirmed the appearance of relevant terms in the syllabi, course objectives, and learning outcomes. The researchers then discussed their findings to establish coding congruence for the content analysis.

To assure reliable data collection, an audit trail and reflexivity were used (Marshall & Rossman, 2011). The PI maintained an audit trail by developing and updating guidelines for each research phase, which included raw data preparation, establishment and maintenance of the

codebook, and process refinement for data collection and analysis which would be needed in subsequent research phases related to learning experiences and assessment. The reasoning behind changes was annotated in the guidelines.

Reflexivity was used to manage bias when coding (Marshall & Rossman, 2011). Each researcher kept a written journal to reflect on feelings and thoughts when determining whether syllabi content (course assignments, schedules, and calendars), course objectives, or learning outcomes contained the keywords or related words/phrases. The journal entries guided discussions to achieve congruent content analysis.

Data Analysis

In content analysis, a text is evaluated for the number of times certain terms related to a research question are used (Marshall & Rossman, 2011). The systematic deductive process used relied on a codebook established prior to analysis and updated as needed. Both researchers independently read articles supporting model higher education diversity curricula (Antonio, 2001; Bleich et al., 2015; Chan, 1989; Chang, 2002a; 2002b; Chapman & Gedro, 2009; Chappell-Williams, 1997; Chavez & Longerbeam, 2016; Copti, Shahriari, Wanek, & Fitzsimmons, 2016; Ekelman, Bello-Haas, Bazyk, & Bazyk, 2003; Garibay, 2014; Garrand, Pechak, Jimenez, & Gell, 2018; Gurin, Dey, Hurtado, & Gurin, 2002; Henderson-King & Kaleta, 2000; Homan et al., 2007; Jackson, 2011; Kelley, Chou, Dibble, & Robertson, 2008; Kulik & Roberson, 2008; Masin, 2016; Nelson Laird, 2005; 2010; 2011; Nelson Laird, Hurtado, & Yuhas, 2018; Palombaro, Dole, & Black, 2015; Paparella-Pitzel, Eubanks, & Kaplan, 2016; Reyes, 2019; Ries, 2019; Tervalon & Murray-Garcia, 1998; Villalpando, 2002) and agreed on the words and phrases that should be included in this study.

Each researcher independently scrutinized the course objectives and learning outcomes for use of the terms in the codebook. If the codebook did not reference an apparently relevant term found in the syllabus, they reviewed the literature, discussed the question, and agreed whether or not to define and include the term in the codebook. If any course objective or learning outcome did not explicitly contain a keyword, its variation, related words or phrases, other syllabus content was then reviewed. The dates syllabi were received and analyzed were recorded in the data collection database to determine which IoRs would be asked to submit learning experiences that correspond to learning outcomes and objectives containing keywords or related words/phrases.

RESULTS

Of the 197 courses eligible for the study, 41 (21%) were enrolled yielding a data set of 43 syllabi from Communication Sciences and Disorders (CSD; n=4), Exercise Physiology (EXPH; n=8, two courses had two sections), Interdisciplinary Health Studies (IHS; n=2), Nursing (NURS;

n=6), Nutrition (NUTR; n=8), and Physical Therapy (PT; n=15). Of the 43 syllabi received, 32 contained eligible course objectives and learning outcomes (74%), and 79 of the 260 objectives and outcomes contained a keyword, its variation or related words/phrase (30%; see Table 1). The only objectives and outcomes explicitly containing keywords or variations thereof were in NURS1 (n=1), cultural competencies; NURS3 (n=1), NURS6 (n=1), and PT12 (n=1), cultural competence; PT2 (n=1) and PT6 (n=2), culturally competent; and PT12 (n=1), cultural humility. Keyword component cultural appeared five times in five syllabi: CSD2 (n=1), NURS2 (n=1), NURS4 (n=1), NURS5 (n=1), and NUTR6 (n=1). Culturally (PT6), culture (NUTR6), cultures (PT6), multicultural (CSD2), and diverse (NURS6) appeared once. Only one course (IHS1) had a keyword outside of the outcomes and objectives which was diversity (n=2) and a keyword variation, culture (n=3) in the calendar to denote the topics Appalachian Diversity and Culture/ Heritage/Stereotypes, respectively.

The course objectives and learning outcomes did have words/phrases identified in the literature as associated with, or related to, our keywords the most prominent being: stereotype (n=1), ethics/ethical (n=7), and social determinants of health (n=2, see Table 2). They included words that describe diversity: age/aging (n=4), child/children, adolescents, older adult, elder (n=19), gender or nouns to represent gender, such as woman/women (n=11), health conditions (n=5), and work experiences (interprofessional practice, health professions, professionals, healthcare providers/ professionals, interdisciplinary health teams, and interactions with co-workers and others) (n=11). The acronym LGBTQ appeared in PT11 (n=1). CSD2 supplemented a learning objective with the knowledge and/or skills requirements of its professional organization, which was phrased as "demonstrated knowledge of human communication and swallowing processes (psychological, developmental, linguistic, and cultural)". EXPH4 was the only course to address diversity in terms of communication skills (n=1) in the calendar.

DISCUSSION

The purpose of this study was to identify the keywords diversity, inclusion, cultural competence, cultural humility, and/or related words/phrases in course objectives, learning outcomes and other syllabus content in a university's healthcare education programs. The results reveal opportunities to improve the preparation of students as productive members of society and the workforce. As Gurin (1999) surmised, this study demonstrated that few courses are explicitly using the keywords or related words/phrases representing diversity concepts. It found that some IoRs are making an effort to embed these topics in the healthcare curriculum, but, for the most part, the language of objectives and outcomes is not explicit. If students see these recognized terms, they will feel accountable for learning and mapping them back to their experiences throughout the course. Stated course objectives and learning outcomes set the foundation for how graduates perform in the workplace.

Table 1: Course Enrollment Data

Program	Program Courses Eligible	Program Courses Enrolled	Syllabi Received/ Eligible	Total Learning Outcomes/ Course Objectives from Eligible Syllabi	Syllabi Learning Outcomes/ Course Objectives Meets Criteria	Other Syllabi Content	Units of Analysis
Athletic Training	15	0					
Child and Family Studies	12	0					
Communication Sciences and Disorders	35	4	4/1	10	2	0	2
Environmental Health	5	0					
Exercise Physiology	22	6	8[a]/5	35	4	1	5
Public Health	26	0					
Interdisciplinary Health Studies	5	2	2/2	9	3	5	8
Nursing	13	6	6/6	44	21	0	21
Nutrition	17	8	8/6	39	14	0	14
Occupational Hygiene and Safety	2	0					
Physical Therapy	28	15	15/12	129	35	0	35
Social Work	17	0					
Total	197	41	43/32	260	79	6	85

[a]Two courses had two sections.

Table 2: Learning Outcomes/Course Objectives and Syllabi Content Data

Course	Learning Outcomes/ Course Objective or Other Syllabi Content Identifier	Keywords and Related Words/Concepts
CSD2 Diagnosis	1	IV-B Demonstrated knowledge of basic human communication and swallowing processes (cultural)[a1]
	2	Multicultural populations[b]
EXPH2 Section 101 Exercise Lecture	5	Diversity of Clients: Wide range of individuals[b]
EXPH3 Sections 103-104 Exercise Lab	5	Diversity of Clients: Wide range of individuals[b]
EXPH4 Fitness	Week 3: 9/10	Diversity: Communication skills[c]
EXPH5 Motor Skill	7	Diversity: of Clients: High-level performers[b]
EXPH6 Research	3	Ethics[b]
IHS1 Prefatory	Week 3: 9/10 & 9/12; Week 4: 9/17	Culture[c] SDoH: Health and healthcare[c]
	Week 6: 10/1 & 10/3; Week 7: 10/8	Economic Stability Views on Appalachian Poverty and Activism[c]
	Week 7: 10/10	Appalachian diversity[c]
	Week 8: 10/17; Week 9: 10/22	
	2	Stereotypes[b]
IHS2 Inter-professionalism	2	Diversity: of Healthcare providers: Interprofessional practice for healthcare professionals[b]
	4	Diversity: of Healthcare providers: Interprofessional practice for healthcare professionals[b]

Table 2: Learning Outcomes/Course Objectives and Syllabi Content Data (*continued*)

Course	Learning Outcomes/ Course Objective or Other Syllabi Content Identifier	Keywords and Related Words/Concepts
NURS1 Introductory Reasoning	1	Diversity: of Healthcare providers: Various healthcare professionals[b]
	10	Define Cultural competencies[b]
NURS2 Intermediate Reasoning	1	SDoH: Education Language and literacy[b] Health and healthcare Health literacy[b]
	6	Illustrate Cultural variables and their impact on health literacy[b]
NURS3 Advanced Reasoning	2	Diversity: of Healthcare providers: Interdisciplinary health teams[b]
	3	apply Cultural competence[b]
NURS4 Clinical Care Lecture	2	Cultural practices[b] Diversity of Clients: Child's/woman's health[b]
	3	Diversity of Clients: Women, children, and their families[b]
	4	Diversity of Clients: Women, children, and their families[b]
	7	Diversity of Clients: For women and children[b]
	8	Diversity of Clients: For the child or woman[b]
	9	Ethical analysis[b]

(continued)

Table 2: Learning Outcomes/Course Objectives and Syllabi Content Data (*continued*)

Course	Learning Outcomes/ Course Objective or Other Syllabi Content Identifier	Keywords and Related Words/Concepts
NURS5 Clinical Care Lab	2	Cultural practices[b] Diversity of Clients: Child's/woman's health[b]
	3	Diversity of Clients: Women, children, and their families[b]
	4	Diversity of Clients: Women, children, and their families[b]
	7	Diversity of Clients: For women and children[b]
	8	Diversity of Clients: For the child or woman[b]
	9	Ethical analysis[b]
NURS6 Research	2	Ethical issues[b]
	4	Diverse populations[b]
	6	Cultural competence[b]
NUTR1 Prefatory	7	Diversity of Clients: In the child and elder[b]
	9	Diversity of Clients: Athlete[b]
	11	Diversity of cultural norms as defined by: Personal eating habits[b]
NUTR2 Professionalism	1	Diversity: of Healthcare providers: Applied nutritional professionals[b]
	4	Diversity: of Healthcare providers: Roles of others whom food, nutrition and applied nutritional professionals[b]

Table 2: Learning Outcomes/Course Objectives and Syllabi Content Data (*continued*)

Course	Learning Outcomes/ Course Objective or Other Syllabi Content Identifier	Keywords and Related Words/Concepts
NUTR3 Medicinal	7	SDoH: Economic stability Food based influences[b] Neighborhood and built environment Environmental influences[b]
	8	Diversity: of Healthcare providers: Roles of others with whom registered dietitians and other nutrition professionals collaborate[b]
	9	SDoH: Education Educational session[b]
NUTR4 Seminar	3	Diversity Career search[b] Dietetics workplace responsibilities and activities[b]
NUTR5 Research	1	Ethical evidence-based practice decisions[b]
	3	Diversity Communication[b]
	4	Cultural humility Advocacy[b]
NUTR6 Nutriment & Disease	1	Cultural aspects of chronic disease[b]
	3	Role of culture[b] Diversity Aging[b] SDOH Health and healthcare Literacy[b] Education[b]

(continued)

Table 2: Learning Outcomes/Course Objectives and Syllabi Content Data (*continued*)

Course	*Learning Outcomes/ Course Objective or Other Syllabi Content Identifier*	*Keywords and Related Words/Concepts*
PT1 Prefatory	3	Diversity of Healthcare providers: Interactions with co-workers and others[b] Age[b] Diagnosis: Patient conditions[b]
	7	Ethical responsibilities[b]
PT2 General	3	Culturally competent patient education[b]
	5	Diversity Communication[b]
PT3 Business	7	Diversity: of Healthcare providers: Identify professionals necessary to hire[b]
PT4 Neurology	4	SDOH Education: Language and literacy Health and healthcare: Health Literacy Patient-friendly teaching[b]
	9	Diversity of Healthcare providers: Interventions delegated to physical therapy assistants[b]
PT5 Neurology	3	Diversity of Client: Patients with cervicogenic dizziness and concussion[b]
	4	Diversity of Client: Patients with cervicogenic dizziness and concussion[b]

Table 2: Learning Outcomes/Course Objectives and Syllabi Content Data (*continued*)

Course	*Learning Outcomes/ Course Objective or Other Syllabi Content Identifier*	*Keywords and Related Words/Concepts*
PT6 Health	2	Culturally-relevant context[b]
	3	Culturally-competent communication[b]
	4	Culturally-competent patient/client education[b]
	5	Diversity Ages[b] Genders[b] Lifestyles[b] Cultures[b]
	10	Diversity Ages[b] Genders[b] Lifestyles[b] Health[b]
	11	Diversity of Clients: Healthy and at-risk children and adolescents[b]
	14	Diversity of Healthcare providers[b]
PT7 Orthopedic	5	Diversity: Through the lifespan[b]
	7	Diversity of Client: Patient/client with abnormal bone and or soft tissue[b]
	8	Diversity Throughout the lifespan[b]
PT8 Orthopedic	4	Diversity of Client: Patient/client-centered treatment[b]

(continued)

Table 2: Learning Outcomes/Course Objectives and Syllabi Content Data (*continued*)

Course	*Learning Outcomes/ Course Objective or Other Syllabi Content Identifier*	*Keywords and Related Words/Concepts*
PT9 Orthopedic	1	Diversity of Client: Patient/client presenting with spinal or TMJ symptoms[b]
	4	Ethical plan of care[b]
	7	SDoH: Economic stability Plan of care ensures best usage of patient/ client's resources[b]
	8	Consideration of a patient/client's social determinants of health[b]
	9	Diversity of geographical location SDOH Neighborhood and built environment Environmental conditions Analyze and adapt work, home, and recreational environments[b]
PT10 Seminar 1	2	Diversity of Clients: Older adult[b]
	3	Diversity of Clients: Older adult[b]
	5	Diversity of Clients: Older adult[b]
	7	Diversity of Clients: Older adult[b]
	8	Diversity: of Clients: Older adult[b] SDoH: Education Educational brochure[b]

Table 2: Learning Outcomes/Course Objectives and Syllabi Content Data (*continued*)

Course	Learning Outcomes/ Course Objective or Other Syllabi Content Identifier	Keywords and Related Words/Concepts
PT11 Seminar 2	3	Diversity of Clients: Typical and high-risk patients[b]
	8	Diversity of Clients: LBGTQ community[b]
	11	Diversity Communication: Perform sensitive interviewing[b]
PT12 Seminar 3	5	Diversity of Healthcare providers: Areas of specialty practice to generate optimal plans for examination and treatment of patients[b]
	7	Take into consideration social determinants of health[b] Aspects of cultural competence and cultural humility[b]

Note. The keywords *diversity* and *cultural competence* or variations thereof that appeared or were referenced in syllabi are in boldface. ACSM = *American College of Sports Medicine Guidelines for Exercise Testing and Prescription*, 8th edition; SDoH = social determinants of health; i.e. health and healthcare, economic stability education, social and community context, neighborhood, and built environment; TMJ = temporomandibular joint; LBGTQ = lesbian, bisexual, gay, transgender, queer.

[a1]From the 2014 Standards and implementation procedures for the certificate of clinical competence in speech-language pathology.

[b]From syllabi learning outcomes/course objectives.

[c]From other syllabi content.

Limitations

Recruitment was hampered by the lack of incentive to return course materials which was impacted by the timing of spring break, midterm preparations and the COVID-19 pandemic. In addition, excluding program courses offered at other campuses may have limited study enrollment.

Implications

Identifying relevant keywords and related words/phrases in syllabus content is the first step in structuring diversity education. The next step will be to examine their expression in learning experiences and the methods used to teach them in the courses under study.

Results can be used for professional development. Faculty can be provided examples of objectives and outcomes that do not explicitly or implicitly embed the relevant keywords and related words/phrases. They can learn from instructors who demonstrate best practices in developing syllabi that address these topics. Future replications of this study can use course evaluation comments to corroborate innovation and best practices related to integrating keywords and related words/phrases in syllabi as a contractual agreement.

CONCLUSIONS

As the population becomes more diverse, the healthcare workforce must be prepared to provide culturally relevant, patient-centered services. Academic health programs should introduce diversity concepts in their curricula and instruction. The present study revealed that most course objectives and learning outcomes do not use relevant keywords or phrases. One syllabus referred to its professional organizations' knowledge or skills requirements containing a keyword component. A larger scale study is needed to inform educators how to better demonstrate the utility of the keywords and concepts in instruction, beginning with their articulation in the syllabus.

REFERENCES

Antonio, A. L. (2001). The role of interracial interaction in the development of leadership skills and cultural knowledge and understanding. *Research in Higher Education, 42*(5), 593-617. https://doi.org/10.1023/A:1011054427581

Behrens, J. T. (1997). Principles and procedures of exploratory data analysis. *Psychological Methods, 2*(2), 131-160. https://doi.org/10.1037/1082-989X.2.2.131

Bleich, M. R., MacWilliams, B. R., & Schmidt, B. J. (2015). Advancing diversity through inclu-

sive excellence in nursing education. *Journal of Professional Nursing, 31*(2), 89-94. https://doi.org/10.1016/j.profnurs.2014.09.003

Campinha-Bacote, J. (2002). The process of cultural competence in the delivery of healthcare services: A model of care. *Journal of Transcultural Nursing, 13*(3), 181-184. https://doi.org/10.1177/10459602013003003

Chan, S. (1989). On the ethnic studies requirement-Part I: Pedagogical implications. *Amerasia Journal, 15*(1), 267-280.

Chang, M. J. (2002a). The impact of an undergraduate diversity course requirement on students' racial views and attitudes. *Journal of General Education, 51*(1), 21-42. https://doi.org/10.1353/jge.2002.0002

Chang, M. J. (2002b). Preservation or transformation: Where's the real educational discourse on diversity? *The Review of Higher Education, 25*(2), 125-140. https://doi.org/10.1353/rhe.2002.0003

Chapman, D. D., & Gedro, J. (2009). Queering the HRD curriculum: Preparing students for success in the diverse workforce. *Advances in Developing Human Resources, 11*(1), 95-108. https://doi.org/10.1177/1523422308329091

Chappell-Williams, L., Adams, N., & Wang, J. (2018, November). *Creating an inclusive medical education curriculum*. Insight Into Diversity. https://www.insightintodiversity.com/creating-an-inclusive-medical-education-curriculum/.

Chavez, A. F., & Longerbeam, S. D. (2016). Rewards, dilemmas, and challenges of teaching across cultural frameworks. In A. F. Chavez & S. D. Longerbeam (Eds.), *Teaching across cultural strengths: A guide to balancing integrated and individuated cultural frameworks in college teaching* (pp. 97-110). Stylus Publishing, LLC.

Colby, S. L., & Ortman, J. M. (2015). *Projections of the size and composition of the U.S. population: 2014 to 2060* (Report No. P25-1143. United States Census Bureau. https://www.census.gov/content/dam/Census/library/publications/2015/demo/p25-1143.pdf

Copti, N., Shahriari, R., Wanek, L., & Fitzsimmons, A. (2016). Lesbian, gay, bisexual, and transgender inclusion in physical therapy: Advocating for cultural competency in physical therapist education across the United States. *Journal of Physical Therapy Education, 30*(4), 11-16. https://doi.org/10.1097/00001416-201630040-00003

Ekelman, B., Bello-Haas, V. D., Bazyk, J., & Bazyk, S. (2003). Developing cultural competence in occupational therapy and physical therapy education: A field immersion approach. *Journal of Allied Health, 32*(2), 131–137.

Garibay, J. C. (2014). *Diversity in the classroom*. UCLA Diversity, and Faculty Development. https://equity.ucla.edu/wp-content/uploads/2019/12/DiversityintheClassroom2014Web.pdf/.

Garrand, K., Pechak, C., Jimenez, L., & Gell, N. (2018). Survey of disability competence teach-

ing and assessment strategies in physical therapist education. *Journal of Physical Therapy Education, 32*(1), 55-64. https://doi.org/10.1097/JTE.0000000000000026

Gurin, P. (1999). Selections from the compelling need for diversity in education, expert reports in defense of the University of Michigan. *Equity & Excellence in Education, 32*(3), 36-62. https://doi.org/10.1080/1066568990320207

Gurin, P., Dey, E. L., Hurtado, S., & Gurin, G. (2002). Diversity and higher education: Theory and impact on educational outcomes. *Harvard Educational Review, 72*(3), 330-365. https://doi.org/10.17763/haer.72.3.01151786u134n051

Hall, W. J., Chapman, M. V., Lee, K. M., Merino, Y. M., Thomas, T. W., Payne, B. K., Eng, E., Day, S. H., & Coyne-Beasley, T. (2015). Implicit racial/ethnic bias among health care professionals and its influence on health care outcomes: A systematic review. *American Journal of Public Health, 105*(12), e60-e76. https://doi.org/10.2105/AJPH.2015.302903

Henderson-King, D., & Kaleta, A. (2000). Learning about social diversity. *Journal of Higher Education, 71*(2), 142-164. https://doi.org/10.1080/00221546.2000.11778832

Homan, A. C., van Knippenberg, D., van Kleef, G. A., & De Dreu, C. K. (2007). Bridging faultlines by valuing diversity: Diversity beliefs, information elaboration, and performance in diverse work groups. *Journal of Applied Psychology, 92*, 1189-1199. https://doi.org/10.1037/0021-9010.92.5.1189

Jackson, V. (2011). Cultural competence in physical therapy education: Student perceptions on the effectiveness of cultural competence education methodology. *Journal of the National Society of Allied Health, 8*(9), 31-38.

Kelley, L., Chou, C. L., Dibble, S. L., & Robertson, P. A. (2008). A critical intervention in lesbian, gay, bisexual, and transgender health: Knowledge and attitude outcomes among second-year medical students. *Teaching and Learning in Medicine, 20*(3), 248-253. https://doi.org/10.1080/10401330802199567

Kulik, C.T., & Roberson, L. (2008). Common goals and golden opportunities: Evaluations of diversity education in academic and organizational settings. *Academy of Management Learning and Education, 7*(3), 309-331. https://doi.org/10.5465/amle.2008.34251670

Marshall, C., & Rossman, G. B. (2011). *Designing qualitative research* (3rd ed.). SAGE Publications.

Masin, H. L. (2016). Communicating with cultural sensitivity. In: C. M. Davis CM & G. M. Musolino (Eds.), *Patient practitioner interaction: An experiential manual for developing the art of healthcare* (pp. 199-222). SLACK Incorporated.

Mazur, B. (2009). Cultural diversity in organisational theory and practice. *Journal of Intercultural Management, 2*(2), 5-15. http://31.186.81.235:8080/api/files/view/7178.pdf

Milem, J. F., & Hakuta, K. (2000). The benefits of racial and ethnic diversity in higher education. In: D. J. Wilds (Ed.), *Minorities in Higher Education: Seventeenth Annual Status Report* (pp. 39-67). American Council on Education.

Nelson Laird, T. F. (2005). College students' experiences with diversity and their effects on academic self-confidence, social agency, and disposition toward critical thinking. *Research in Higher Education, 46*(4), 365-387. https://doi.org/10.1007/s11162-005-2966-1

Nelson Laird, T. F. (2010, March). How inclusive of diversity is your course or program? Presentation at the Annual Convention of the American College Personnel Association, Boston, MA.

Nelson Laird, T. F. (2011). Measuring the diversity inclusivity of college courses. *Research in Higher Education, 52*, 572-588. https://doi.org/10.1007/s11162-010-9210-3

Nelson Laird, T. F., Hurtado, S., & Yuhas, B. (2018, April). Measuring the diversity inclusivity of college courses: An update. Paper presented at the Annual Meeting of the American Educational Research Association, New York, NY. htttps://www.aera.net/Publications/Online-Paper-Repository/AERA-Online-Paper-Respository

Omatsu, G. (1994). *The "four prisons" and the movements of liberation: Asian American activism from the 1960s to the 1990s.* South End Press.

Palombaro, K. M., Dole, R. L., & Black, J. D. (2015). Curricular integration and measurement of cultural competency development in a group of physical therapy students. *Journal of the Scholarship of Teaching and Learning, 15*(5), 82-96. https://doi.org/10.14434/josotl.v15i5.13505

Paparella-Pitzel, S., Eubanks, R., & Kaplan, S. L. (2016). Comparison of teaching strategies for cultural humility in physical therapy. *Journal of Allied Health*, *45*(2), 139–146. https://pubmed.ncbi.nlm.nih.gov/27262472/

Reyes, D. V. (2019, March). *Colleges should have a required core curriculum in racial literacy (opinion).* Inside Higher Ed. https://www.insidehighered.com/advice/2019/03/08/colleges-should-have-required-core-curriculum-racial-literacy-opinion

Ries, E. (2019, October). *Battling bias's distorted images: Looking in the mirror is the first step.* American Physical Therapy Association. https://www.apta.org/PTinMotion/2019/10/Feature/Bias/.

Smith, K. R. (2016). Teaching and learning "respect" and "acceptance" in the classroom. In: M. Bart (Ed.), *Faculty focus special report: Diversity and inclusion in the college classroom* (pp. 17-19). Magna Publications.

Tervalon, M., & Murray-Garcia, J. (1988). Cultural humility versus cultural competence: A critical distinction in defining physician training outcomes in multicultural education. *Journal of Health Care for the Poor and Underserved, 9*(2), 117-125. https://doi.org/10.1353/hpu.2010.0233

Villalpando, O. (2002). The impact of diversity and multiculturalism on all students: Findings from a national study. *NASPA Journal, 40*(1), 124-144. https://doi.org/10.2202/1949-6605.1194

COVID-19 Challenges: Lessons Learned in an HBCU Nursing Education Program

Cecil Holland[1], PhD, EdD, RN; Lolita Chappel-Aiken[1], EdD, RN; Teresa Tyson[1], PhD, RN; Dennis Sherrod[1], EdD, RN

Author Affiliations: [1]Division of Nursing, Winston-Salem State University, Winston-Salem, North Carolina

Corresponding Author: Dennis Sherrod, Division of Nursing, 601 S. Martin Luther King Jr. Drive, Winston-Salem State University, Winston-Salem, NC, 27110 (sherrodd@wssu.edu)

ABSTRACT

COVID-19 affected the world in unprecedented ways. Families were frightened; hospitals were overwhelmed; and nursing education institutions were tasked to conceive and implement delivery strategies that would pose the least risk to students, faculty, and staff. This introspective and reflective review of the impact of the pandemic identifies leadership lessons learned in undergraduate and graduate nursing education programs at a Historically Black College and University (HBCU) in the southeastern United States.

KEYWORDS: ▪ COVID-19 ▪ HBCU ▪ Leadership ▪ Nursing ▪ Nursing Education

INTRODUCTION

In spring 2020, COVID-19 affected the world in unprecedented ways. Families were frightened; hospitals were overwhelmed; and nursing education institutions were tasked to conceive and implement delivery strategies that would pose the least risk to students, faculty and staff. An introspective and reflective review of the pandemic and its impact on nursing education and training is critical.

Reflecting on responses at Historically Black Colleges and Universities (HBCUs) is especially important since the pandemic disproportionately affected minority populations throughout the

United States. A May 2020 Commonwealth Fund survey indicated that almost half of Black respondents reported experiencing economic challenges caused by the pandemic, compared to 21 percent of White respondents. Nearly 10 percent more respondents who identified as Black or Latinx reported mental health concerns than Whites, and 39 percent of women, or 13 percent more than men (Commonwealth Fund, 2020).

At Winston-Salem State University (WSSU), most students and faculty/staff are Black or another minority. In the 2020 academic year, 97 percent of undergraduate students, 70 percent of graduate students (WSSU, 2020a), and 75 percent of faculty and staff were minority race/ethnicity (WSSU, 2020b). Women represented 76 percent of undergraduate students, 78 percent of graduate students (WSSU, 2020a), and 62 percent of faculty/staff (WSSU, 2020b).

Healthcare and educational institutions across the globe transitioned from face-to-face education and training platforms to online and virtual, synchronous and asynchronous learning modalities. WSSU students were provided an additional week of spring break, while faculty and staff immediately transitioned courses to online delivery and offices to digital and electronic operations. This shift created gaps in the learning environment that have yet to be fully understood. With learning experiences required in clinical settings in the health sciences, education and practice partners must collaborate to create seamless transitions to practice environments and continue to prioritize and implement quality education and patient care services.

While governmental and healthcare accreditation and governing bodies provided recommendations and, in many cases, mandates, healthcare institutions and nursing education programs continue to grapple with assuring the safety of the constituencies they serve. Since the first cases were reported in China in December 2019, the National Institutes of Health (NIH), the World Health Organization (WHO), the American Association of Colleges of Nursing (AACN), the National League of Nursing (NLN), and Boards of Nursing (BON) have monitored the effects of the global pandemic on the health and well-being of humanity. Each agency continues to stress the importance of hand hygiene, face covering, social distancing, and vaccination to combat the spread of this deadly virus.

In this paper, we reflect on COVID-19's impact on nursing education and identify lessons learned during this unprecedented time in our history. The opportunity to reflect on the challenges allowed us to analyze current processes, building a critical framework that may influence future academic, administrative, and programmatic success.

LESSONS LEARNED

If Conditions Require a Pivot, Implement Well-Tested Strategies

The global COVID-19 pandemic forced a rapid response from colleges and universities, which had very little time to prepare for the major shift in learning platforms to keep participants safe. While some students and faculty were able to navigate virtual learning, many struggled to adapt.

Nursing education programs, in collaboration with other educational providers, used a pleth-

ora of proven strategies to deliver didactic and clinical content. Nurse leaders and nurse educators reexamined the question-driven Socratic method of teaching and inquiry. In a pandemic environment where critical thinking is paramount, reevaluating the fundamental characteristics and integration of the Socratic method is important. When this method is used in online or virtual nursing education, it engages the learner, thereby facilitating dynamic and integral discussion in a nontraditional way. In addition to stimulating critical thinking, it encourages group participation and group learning (Dewald, 2020).

As clinical partners prepare for a workforce that inherited the fallout of a global pandemic—for example, limited hands-on clinical experience—they must embrace Socratic learning differently. Nurse leaders and nurse educators must be cognizant of factors that influence online learning. According to Obi et al. (2018), students must not only have a propensity or readiness for online learning, but they must also be comfortable with technology and develop understanding of course content. Sociodemographic and cultural factors may contribute to their readiness. Clearly, online learning presents challenges, particularly when immediately imposed by COVID-19. Preparing the learning environment is crucial and must be purposeful. Strategies that have proven effective in educational institutions that may transition seamlessly to practice are case studies, discussion groups, games, individual and group projects, and guided design focused on developing decision-making skills, concepts, and principles (University of Illinois, n.d.).

Adapt, Assess, and Evaluate

As academic leaders in nursing education, our first goal when faced with a crisis is to ensure the quality of education and instruction is not compromised. The pandemic forced a swift pivot from face-to-face teaching and learning modalities to distance and virtual learning platforms. These modalities present real challenges for students, particularly those who are already behind or struggling in a normal learning environment; the literature is clear that for some content, face-to-face learning is best (Winthrop, 2020). The more students are engaged in the learning process, the better their learning outcomes.

However, even in the midst of COVID-19, opportunities to leverage what we have learned arise. The pandemic has challenged faculty and students to rethink how education is delivered and how learning occurs. It has shown us that blended learning can be advantageous for both. Innovative approaches—simulation, Zoom, Flipgrid, and others—have posed questions that dare to be answered: Can teaching and learning be done differently? Can they be done better?

Academic and practice teaching strategies were adapted for the online environment, then assessed for their effectiveness in achieving learning outcomes. COVID-19 made crystal clear that educational institutions are fragile yet resilient and can withstand invasions like the international pandemic. At this critical juncture, working collaboratively ensures a seamless transition from education to practice and the delivery of quality healthcare.

Embrace Technology

As COVID-19 travelled across the globe, and healthcare scientists and educators learned more about its transmission, educational programs pivoted away from classroom contact to a blended teaching/learning platform. While the transition may not have been seamless, it provided an opportunity to integrate technologies that had been available to distance learners only. University forms were rapidly converted from paper to electronic formats, which allowed students, faculty, and staff to interact with offices electronically. Bower et al. (2013) report that distance learners have been supported mostly through asynchronous methodologies—recorded lectures, discussion forums, electronic documents—which have advantages due to lifestyle and work demands but do not permit robust, real-time conversations and engagement. However, nursing schools relied heavily on both synchronous (students and instructor online at the same time) and asynchronous (students complete coursework on their own time) strategies and found that virtual online meetings did support real-time engagement. Despite early skepticism, educators have found online meeting software and other learning/meeting tools effective for person-to-person interaction.

Availability of Learning and Work Resources is Not the Same for Everyone

During the pandemic, making teaching resources for faculty, work resources for staff, and learning resources for students equitably available presented significant challenges. Faculty and staff were encouraged to use their office laptops as they transitioned to working from home. If they had been using a desktop computer, a laptop was made available to them. Students were allowed to check out laptop computers for home use as well.

Students, faculty, and staff living in rural areas continue to have challenges with access to electronic devices and connectivity. Even with proper electronic devices, without the appropriate bandwidth, network performance is often compromised. Access to departmental shared files was problematic. Most faculty and staff engaged in teleworking, and access to program or institutional files was limited or impossible. Working collaboratively with information technology professionals to access the vital software and hardware programs that support daily programmatic operations was a lifeline. Having these valuable resources available to students and faculty facilitated continuous teaching and learning opportunities and program operations— virtual meetings, recruitment and advising events, budget and finance activities, interprofessional collaborations, and accreditation processes.

Learning is Lifelong – for Everyone

The impact of COVID-19 was felt across the nation and around the world, and many were required to develop new skills and competencies on their own. While some educators may not have been

equipped to navigate the various teaching and learning platforms, they rose to the challenge. Many struggled with changing from face-to-face or traditional teaching and learning environments to virtual, blended, and online platforms. They became intentional students and attended national webinars and seminars. One program had to change its mode of delivery from face-to-face to web-based while measuring student and program effectiveness. During this time, we saw an increase in opportunities to engage in learning groups to better prepare educators for the new practices. Across the country, educational institutions and independent organizations offered courses and programs to support educators during the transition. Many of these programs were offered within educational systems, such as the University of North Carolina (UNC) system. These opportunities introduced many different teaching/learning modalities including, but not limited to, synchronous, asynchronous, virtual simulation, and other blended methodologies.

Together, We Can Accomplish Great Outcomes

Clinical and practicum experiences were interrupted. The decision to move to online delivery was emailed to all faculty, and they quickly moved to virtual simulation and clinical scenarios to substitute for "live" patient encounters. Administrators and staff rapidly moved university operations to digital and electronic delivery. Boards of nursing and accreditation bodies provided more flexible guidelines governing clinical and practicum experiences while not compromising quality. Nursing education programs worked directly with clinical site leaders to arrange direct-care learning experiences where possible and devised other innovative solutions, such as virtual clinical and lab experiences, case scenarios, and videoed skills checkoffs. Faculty with expertise in certain learning modalities mentored faculty with less online experience or knowledge. As these collaborative efforts grew, learning outcomes improved. The pandemic saw a decrease in insular "turfs" or "silos", and permeable boundaries allowed more collaboration, connections, and sharing across programs and systems.

Develop Partnerships Today that Will Sustain You in Unforeseeable Crises

Budgetary constraints are significant in higher education, and affording competitive salaries affects recruitment and retention. In our Division of Nursing, a full-time faculty hiring freeze was in place during the COVID-19 pandemic, and part-time faculty greatly assisted our program's success. We communicated our expectations to part-time and adjunct faculty: compassionate, student-centered education, meeting course objectives, and communicating with faculty when students were having difficulty or could not meet course outcomes. Deadlines were extended, and sometimes comparable assignments were reassigned. Students who returned to the United States were reassured that they could return to the university.

The Clinical Teaching Associate (CTA) partnership with two of our largest local clinical

systems, a local community college and an Area Health Education Center in southeast North Carolina, has provided large numbers of part-time nursing faculty for years. CTAs serve as adjunct faculty members in the Division of Nursing and are responsible for guiding student learning experiences in the clinical setting where they otherwise work. This partnership not only stabilizes clinical faculty needs but provides a professional development opportunity for experienced nurses. By increasing qualified clinical faculty, the nursing programs can increase enrollment; sharing human resources reduces cost to the academic unit while providing clinical support to practice partners. Because this partnership had been in place for years, our programs could rapidly access numbers of qualified part-time faculty to work with our students even in the crisis.

Make Change a Part of Your Status Quo

Throughout these tumultuous times, one of the greatest lessons learned is not to be afraid of change. Being adaptable and able to rethink how things must be done provides an opportunity to reshape and reinvent our own emotional intelligence. Some of the best ideas, innovations, and collaborations emerged because of COVID-19. For example, our department learned that online meetings work well for our faculty, and we plan to continue them.

Be Transparent, Authentic, and Present

Promoting transparency helps to create a sustainable and inviting workplace culture (Nazar, 2020). In times of crisis, remain true to your values and beliefs. Bohmer et al. (2020) purport that one important characteristic observed in leaders during the uncertainty of the pandemic was "being there". Transparency, authenticity, and being present are all key leadership traits that support the navigation of any crisis. Leaders must seek opportunities to improve the organization's climate and culture, especially during times of upheaval and despair. *Being there* provides the greatest opportunity to influence change.

Remain True to your Mission

COVID-19 turned the world upside down, without time for preparation. The global pandemic was no respecter of place or persons at the macro and micro levels. Most businesses experienced a hard stop. Universities continued to meet the needs of their stakeholders, which include students, faculty, staff, administrators, accrediting bodies, and the community. Levenson (2020) posits that the core mission must never be abandoned in the face of a crisis. The core values of our university and the division of nursing include social justice, student centeredness, and addressing health disparities. Though you may have more questions than answers, remain true to your mission and core values.

In Nursing Education, Student-Centeredness is the Mantra

During the pandemic, many students fell behind in their studies. Some of our undergraduate nursing students worked as certified nursing assistants, and many of our graduate students worked as registered nurses with known COVID-19 patients and patients who tested positive before proper personal protective equipment (PPE) was worn. They carried the virus home to their elderly parents; at times, one or both parents contracted the disease, and some died. Other students experienced the death of other family members and close friends. Some of our international student population had to return to their countries when family members became ill, and some could not return.

With online course delivery, student-centeredness and engagement were a challenge, as reflected by attrition rates. Lessons learned included using synchronous classes, virtual office hours, cameras on during class, hybrid classes, and virtual simulation to enhance student interaction and engagement. Faculty had to be creative, innovative, and student-centered about assignment deadlines, testing policies, and clinical hours.

Communicate Transparently and then Communicate Some More

While student-centeredness has always been a focus of our academic programs, we found that transparency is of utmost importance when facing uncharted territory. Nursing faculty were encouraged to be flexible and demonstrated flexibility beyond measure. Because COVID-19 affected Black and Brown people disproportionately at our HBCU, being realistic regarding student achievement developed new meaning. As nurse educator leaders, clearly sharing our expectations regarding student centeredness was important. We found that *overcommunication* is impossible during a pandemic. The administration communicated with faculty and then with students; students communicated with faculty; and faculty with administration. Communication also occurred with stakeholders and advisory boards. Some clinical agencies did not allow graduate student nurses in practice settings, which posed a problem because nursing is a practice discipline. Communication was transparent, with consistent messaging to all groups.

Work Closely with Partners

We collaborated with the American Nurses Credentialing Center (ANCC), the American Academy of Nurse Practitioners certification program (AANPCP), Commission on Collegiate Nursing Education (CCNE), National Organization of Nurse Practitioner Faculties (NONPF), community partners, and other universities, and we relied on each other more heavily than ever before as we learned quickly that the question was survival: our lives, our university, our partners, and our community.

Consider Creative Options for Achieving Required Learning Outcomes

Both the ANCC and AANPCB require family nurse practitioners to complete 500 direct patient care hours to sit for certification. To help students achieve 500 clinical hours, prerequisites were eliminated from plans of study, and the distinction between direct and indirect hours was clearly documented, which was important because the height of the pandemic occurred during the adult and older adult practicum experience when direct patient contact was limited. The university realigned and allowed students to register for clinical courses without penalty, even if previous courses had not been completed. They received a grade of incomplete (I), and although they were beginning the next clinical course, preceptors allowed them to complete the missed practicum hours.

Meeting program outcomes, certification rates for prelicensure programs, and focused care hours required by the Board of Nursing were challenges for graduating seniors. Lessons learned included supporting faculty with the resources required to meet student's learning outcomes. We established informational sessions for faculty and staff on transitioning to online delivery and promoting innovative teaching and learning strategies to meet student outcomes. The pandemic affected each student's progress differently. Our student-centered approach allowed them to complete all clinical hours at their own pace, and graduations were not delayed.

Adopt Leadership and Management Skills

Leadership and management skills had to be adapted to meet the crisis. Administrators attended daily coordination meetings to assure proper operations, especially the rapid transition to online delivery. Lessons learned included revising current policies and procedures to meet changing needs; for example, revising testing policies and procedures as well as clinical expectations. Online testing verification included video identification of the test-taker and the use of the Respondus lock-down browser, which does not allow use of a browser, such as Google, during a test.

Maintain Work/Life Balance Even in a Crisis

Work/life balance becomes even more important in a crisis. The COVID-19 pandemic has lasted over a year, and fulfilling educational program requirements, work demands, home care and/or schooling of children, unexpected financial pressures and personal safety adjustments, just to mention a few competing claims, can cause stress, anxiety, and take a toll on students, faculty, and staff. Finding ways to maintain an adequate work/life balance is crucial.

Table 1: Survey Satisfaction Rates

Satisfaction Rates
- 50% were satisfied with opportunities for professional advancement;
- 48% were satisfied with opportunities to lead programs or initiatives; and
- 44% were satisfied with opportunities to influence decisions about workplace organizations.

Note: Satisfaction percentage among surveyed nurses who worked with COVID-19 patients

COVID-19 Established New Norms in Nursing Service and Education

Never in recent history have nurse executives been more called upon to demonstrate critical core leadership competencies than during the COVID-19 pandemic. From boardroom to bedside, nurse leaders heightened their skills in communication, knowledge, leadership, professionalism, and business. The AONL partnered with the American Nurses Association and Johnson & Johnson to investigate the pandemic's impact on the profession through a survey. Of the four thousand (n = 4,000) respondents, approximately 31.25 percent (n = 1,250) were nurses and nursing students. The survey suggested that 64 percent of nurses who spent more than half of their time with COVID-19 patients were satisfied with their opportunities to work with interprofessional teams, compared to 57 percent of those who spent less than half of their time with these patients (AONL, 2021). Table 1 shows other significant findings from the study.

Survey results indicate that COVID-19 changed the way the nursing profession and healthcare systems provide services. While the crisis created operational and functional challenges, it exposed opportunities for improvements. Nursing rose to the challenge through creative and innovative collaborations, increased opportunities to influence change and professional development, and recognition of professional knowledge, the expanded scope of practice, and leadership capabilities.

We have learned that the profession is flexible. We have learned that nurses must practice at their full scope. We have learned that innovative strategies—clinical simulation, telehealth—are opportunities to teach, improve community health, and dismantle disparities. The study has significant implications for educating a nursing workforce to lead and engage in interprofessional collaborations across the academic and healthcare enterprises (AONL, 2021).

CONCLUSION

COVID-19 has challenged nursing education in many ways. It brought severe health challenges, and financial upheaval to the overall workforce and education and learning environments. With

the onset of the pandemic, US nursing programs were forced to transition from face-to-face education and training platforms to virtual synchronous and asynchronous learning modalities.

While the COVID-19 virus continues to weigh heavily, education and practice must collaborate to ensure a workforce strongly positioned to deliver quality healthcare. We must embrace diversity to engage and develop creative solutions that address the health needs of all populations. From the classroom to the practice setting, we must all combat this horrific disease. As we continue to navigate these tumultuous times, we must engage technology and other methodologies to support education and transition to practice. We must partner to create environments that promote collegiality, professional development, and quality healthcare.

As governmental and regulatory bodies develop and implement guidelines for confronting the coronavirus, nursing education and practice must be diligent in supporting them to ensure the safety of our citizenry. As the most trusted healthcare professionals and front-line responders, nurses must take the mantle and lead the charge to eradicate this deadly disease.

Our instructional strategies are critical to the success of our current students and nursing workforce as well as the professional development of the next cadre of nurses. COVID-19 has provided an opportunity to reflect on optimizing the online environment. Blending learning strategies with innovative technology can move nursing education and practice forward. Education and practice must continue to collaborate to sustain quality healthcare. The profession would be remiss if it did not consider the ethical, social, moral, financial, and political ramifications this devasting pandemic has presented. We must pay attention to and use the data to make wise decisions. Our resilience and critical decisionmaking as nurse leaders will pave the way as we continue to educate and train the nursing workforce.

REFERENCES

American Association of Colleges of Nursing (AACN). (2020, September). *Fact sheet: Nursing faculty shortage*. https://www.aacnnursing.org/Portals/42/News/Factsheets/Faculty-Shortage-Factsheet.pdf

American Organization for Nursing Leadership (AONL). (2021, January). *The impact of COVID-19 on the nursing profession in the U.S.* https://www.aonl.org/resources/covid-19/impact-of-covid19-on-nurses

Bohmer, R. M. J., Ives Erickson, J. R., Meyer, G. S., Blanchard, B. B., Mountford, J., Vanderwagen, W. C., & Boland, G. W. L. (2020, November 16). *10 leadership lessons from Covid field hospitals.* Harvard Business Review. https://hbr.org/2020/11/10-leadership-lessons-from-covid-field-hospitals

Bower, M., Kenney, J., Dalgarno, B., Lee, M. J., & Kennedy, G. E. (2013). Blended synchronous learning: Patterns and principles for simultaneously engaging co-located and distributed

learners. Electric Dreams. 30th Ascilite Conference. https://nursingeducationnetwork.net
    /2017/02/18/blended-synchronous-learning-journal-club

Commonwealth Fund. (2020). *Beyond the case count: The wide-ranging disparities of COVID-19
    in the United States*. https://www.commonwealthfund.org/publications/2020/sep/beyond
    -case-count-disparities-covid-19-united-states?gclid=CjwKCAjw_JuGBhBkEiwA1xmbRa9bv
    5x2FNpM-kS7oBpTOr-SfeXvWQWx80U__jzQcwVnP6a_SvEVTRoCPR4QAvD_BwE

Dewald, R. (2020). How would Socrates enhance online learning in nursing education? *Nursing
    Education Perspective*, *41*(4), 253-254. https://doi.org/10.1097/01.NEP.0000000000000582

Hunter, G. (2020, August 4). *Recruiters respond to increased demand for nurses*. Labor IQ. https://
    www/thinkwhy.com/news-detail/growing-demand-for-nurses

Nazar, J. (2020, May 8). *8 critical lessons leaders need to emerge from the COVID-19 crisis (and one
    that will surprise you)*. Fast Company. https://www.fastcompany.com/90502230/8-critical
    -lessons-leaders-need-to-emerge-from-the-covid-19-crisis-and-one-that-will-surprise-you

University of Illinois. (n.d.). *ION professional elearning programs. Instructional strategies for
    online courses*. https://www.uis.edu/ion/resources/tutorials/pedagogy/instructional
    -strategies-for-online-courses

Winston-Salem State University. (2020a). *Faculty and staff 2017-2020*. https://www.wssu.edu
    /about/assessment-and-research/faculty-staff-data.html

Winston-Salem State University. (2020b). *Student data*. https://www.wssu.edu/about
    /assessment-and-research/student-data.html

Winthrop, R. (2020, April 10). *Top 10 risks and opportunities for education in the face of COVID-19*.
    Brookings Institute. https://www.brookings.edu/blog/education-plus-development
    /2020/04/10/top-10-risks-and-opportunities-for-education-in-the-face-of-covid-19

NAMME Call for Proposals

The 2022 NAMME Program Committee invites you to submit proposals for NAMME's National Conference to be held at the Marriot Marquis Atlanta in Atlanta, Georgia from September 15-18, 2022. Utilize this form to submit a concurrent session and/or poster presentation proposal. All proposals are due by 5:00 pm EST on Tuesday, March 15, 2022.

Submission Instructions

All submissions should be in line with the conference theme: "*Amplifying the Voices of Our Future Healthcare Professionals*". Presentations should be engaging, interactive, and have wide appeal. The Program Committee will give special consideration to proposals related to areas of developing, sustaining, and ensuring racial and ethnic diversity in all of the health professions, including, but not limited to medicine, dentistry, pharmacy, optometry, nursing, academic leadership, etc.

Submissions may also focus and include strategies for:

- Addressing other aspects of diversity including age, conscious/unconscious bias, culture, disabilities, gender, intersectionality, mental health, multiculturalism, neurodiversity, poverty, religion, sexual orientation, socio-economic status, veterans, and access to higher education
- Building diverse, equitable, and inclusive communities
- Enhancing the recruitment and retention of a diverse and qualified faculty
- Improving student access and outcomes for minorities with an emphasis on first-generation, low-income, and underserved students
- Increasing the diversity of the health professions school's teaching workforce
- Preparing faculty to successfully work with diverse students
- Strategies on engaging the campus and larger community in diversity, equity, and inclusion education
- Supporting access to and success in the health disciplines for all students

Proposals may be submitted by individuals or groups made up of administrators, faculty, staff, and students. Submissions must be complete and include the following sections:

Presentation Title
- Presenter's Name(s)
- Presenter's Job Title(s)
- Institution/Organizational Affiliation
- Primary Contact Information
- Target Audience
- Session Abstract/Synopsis (no more than 300 words)
- Objectives/Outcomes
- Presentation Method (i.e., activity, discussion, PowerPoint, etc.)
- Required Equipment

You may submit proposals online at https://www.surveymonkey.com/r/NAMME2022

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For questions related to faculty positions, please contact Tammy Cunningham, University Program Specialist to the Associate Dean of Nursing, at cunninghamt@wssu.edu or 336-750-2659.

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