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Systematic Website Review of Diversity Embeddedness in U.S.-Based Graduate Health Professions Education Programs

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Systematic Website Review of Diversity Embeddedness in U.S.-Based Graduate Health Professions Education Programs

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Abstract

Purpose: The value of a diverse healthcare workforce and the need for all healthcare providers to be educated to provide culturally competent care is widely acknowledged. In part, educating diverse and culturally competent providers is a responsibility of higher education institutions. This study investigated health professions education (HPE) institution-level and program-level websites for evidence of diversity, equity, and inclusion (DEI) content to address the recruitment and the preparedness of future health profession educators using the diversity and inclusion engaged marketing (DIEM) framework. The study was guided by two research questions: What is the relationship between institution-level and HPE program-level website diversity content?, and What evidence of diversity embeddedness exists on HPE program-level websites?

Method: Systematic website review methods were used in this non-experimental study design to examine the relationship of graduate HPE program-level websites and institution-level websites for DEI embeddedness. Two data extractors independently and collaboratively extracted and recorded data from 43 institution-level and program-level websites, coding 15 DEI elements.

Results: A small but significant amount of variance in program-level website diversity content scores was explained by institution-level website diversity content scores ($R^2 = .093$, $p = .046$). In addition, program-level websites did not present evidence of embedding diversity within the curriculum with only eight programs (19%) offering HPE students a course with keyword terms ("diversity," "equity," "DEI," "health disparity," "social justice," or "cultural competence") incorporated in the title or course description. Only one of the 43 programs (2%) offered a formal track, concentration, or certificate dedicated to diversity-related topics within the HPE context.

Discussion: Findings demonstrate institution-level evidence of diversity commitment through textual statements, links to academic and financial resources, and use of gender and race diverse images. However, program-level websites infrequently displayed gender and race diverse images of faculty, students, and student life, nor offered textual evidence such as program-level diversity statements, or diversity curriculum embeddedness. The findings suggest DIEM strategies have not trickled down from the institution to the program-level. The program-level diversity website content gaps may be attributable to a lack of awareness or lack of technical capabilities, and although some issues may be easily resolved, others, such as diversifying faculty bodies or revising the curriculum, may require more sustainable change approaches beyond a surface-level website update.

Keywords: Diversity, Website content analysis, Health professions education, Workforce, Recruitment

1. Introduction

Professional organizations such as the International Association of Medical Science Educators [1], Association for Medical Education in Europe [2], and Association of American Medical Colleges [3] have called for the diversification of medical and health professions. A diverse healthcare workforce,

including healthcare providers who are educated to provide culturally competent care, is widely acknowledged as beneficial to improving patient outcomes, workforce representation, and reduction of health disparities [4−7].

The two-pronged challenge of recruiting diverse students and addressing issues of diversity within the curriculum has fallen squarely in the laps of higher education institutions. Many higher education institutions have embraced diversity, equity, and inclusion (DEI) as part of their missions and reflect this commitment in strategic plans [8,9]. Although institution-level DEI commitment has been investigated, little focus has been paid to its relationship with program-level activities such as student recruitment, curriculum design, and faculty representation. In essence, it is unclear which institution-level efforts "trickle down" to program-level practices. With the need for a diverse group of healthcare professionals to provide culturally competent care, and increased commitments by higher education institutions to address diversity in education, we require systematic knowledge about the relationship between institution-level and program-level activities of health profession programs.

Health professions education (HPE) programs are those responsible for providing information, experience, skills, and competencies of students intending to practice as educators to health professionals, such as nurses, physician assistants, and allied health professionals [10]. HPE programs offer advanced training in educational practices suitable for the training of health professionals. HPE programs not only contribute to students with professional identities in health care [11], but prepare students to educate others, broaden the health professions educator pipeline, and replicate DEI responsive education strategies [4]. Therefore, an important component of health professions diversity is to ensure the educators are diverse and prepared to address issues of DEI in education.

Institutions communicate values to the general public and prospective students via public websites, therefore the present study investigated HPE program websites for evidence of DEI content to both address the recruitment and the preparedness of future health profession educators. The study was guided by the research questions: What is the relationship between institution-level and HPE program-level website diversity content?, and What evidence of diversity embeddedness exists on HPE program-level websites? Using systematic website review methods, we examined the embeddedness of DEI as represented in the data sources of perceived representation, terminologies used, resources available, and image context.

2. Literature review

2.1. Theoretical foundation

The diversity and inclusion engaged marketing framework (DIEM) [12] proactively and consistently promotes diversity and inclusion to aid multicultural marketplace wellbeing and highlight DIEM benefits for stakeholders. Because the framework identifies DIEM actions which can be aligned to overcome barriers associated with DIEM meanings, norms, and rules at the institution level, it is the most appropriate framework for analyzing diversity-related communication to prospective students. The DIEM actions of identity construction and changed normative associations via web presence were used in this study. A lack of DIEM strategies may explain the absence of diversity materials on a program webpage even when the institution maintains a posture of diversity [12].

2.2. Need for diversity-ready health professionals

Gender, age, race and ethnicity, income, and education level are known to impact health outcomes, resulting in poorer health outcomes for individuals who are disadvantaged in any of these aspects [13]. A more diverse healthcare workforce is one strategy for addressing healthcare disparities and improving health outcomes amongst historically marginalized patients [4,14]. However, representation of historically marginalized groups within health professions occupations is disproportionately low by comparison to the U.S. population [7]. Diversity education has been linked to reducing health disparity [5], and working with diverse populations has been identified as a crucial competency for health professionals [6,7]. Thus, it is important to understand the extent of DEI-related education in HPE curriculum.

2.3. Recruiting diverse students

Higher education institutions experience two DEI pressures: to *be diverse*, having a diverse student and faculty body, and to *appear to be diverse*, in marketing and communication efforts [15]. Diversity "can include such factors as age, gender, sexuality, race, ethnicity, nationality, and religion, as well as education, livelihood, and marital status" [16]. A program's commitment to addressing diversity, and the institutions' commitment to do the same, can draw a

diverse group of student applicants, matriculants, and trained health professionals [17,18].

To address issues of diversity in recruitment practices, programs must undertake a holistic review of their processes [19]. Recognizing the value of a diverse student body, scholars have suggested that institutions proactively manage diversity perceptions through advertisement materials for both public and private good [20,21]. The underrepresentation of historically marginalized individuals across the health professions workforce is directly related to the pipeline of eligible applicants for a health professions graduate certificate or degree, including those in health professions education [7].

Institution websites are increasingly the most important recruitment tool for institutions advertising graduate training [18,22,23]. Web strategies to recruit historically marginalized populations include making public commitments to DEI initiatives, offering support or benefits targeting specific populations, and displaying pictorial evidence of diversity in marketing materials [24]. Although DEI is a multifaceted concept which extends beyond gender and race, the appearance of diversity in multimedia is often restricted to observable characteristics such as gender and race.

3. Method

We conducted a systematic website review of graduate Health Professions Education (HPE) programs in the United States to examine how HPE websites feature diversity and to interrogate the connections between institution-level and program-level evidence of diversity. Systematic reviews are common research approaches, frequently taking the form of scoping literature reviews or meta-analysis, using published academic literature as the primary data source. The goals of these reviews differ slightly by type, but generally they seek to identify, appraise, and summarize [25]. Like systematic literature reviews, the systematic website review follows an established process to include or exclude material and uses *a priori* established extraction codes. However, unlike systematic literature reviews, the systematic website review relies on a more ephemeral data source, namely, websites. Systematic website reviews of higher education websites [26] and within health professions [27] have been conducted by other scholars. The goal of this study was to appraise institution- and program-level websites for DEI and identify program-level DEI embeddedness in the curriculum, making systematic website review a well-suited method.

To conduct this systematic website review, two data extractors independently and collaboratively extracted and recorded data from websites. In all, 43 institution-level websites and program-level websites were examined for 15 DEI elements (Fig. 1).

3.1. Inclusion and screening

To establish a list of health profession education programs, we used Foundation for Advancement of International Medical Education and Research (FAIMER), Integrated Postsecondary Education Data System (IPEDS), and Google search engine. In summer 2021, FAIMER listed 141 Master's-level and 36 Doctoral-level HPE programs worldwide. International programs were eliminated from the list because the research team is only proficient in English and because the central focus on diversity and inclusion is geographically contextual. A total of 34 Master's-level and 16 Doctoral-level HPE programs remained.

A customized search of IPEDS using the CIP code 51.32 [Health Professions Education, Ethics, and Humanities] was performed and resulted in 53 institutions with completions in either 2018 or 2019, the most recently reported years, and captured programs which may graduate cohorts every other year. A Google search for institutions which have a graduate HPE program using the terms "health professions education" and "master's degree," "doctoral degree," and "certificate" yielded 59 institutions which were added to the master list of HPE programs.

The master list maintained in a spreadsheet contained 162 HPE programs, and after removing 106 duplicates, a total of 56 institution websites were identified for screening. Researchers performed parallel independent screening and further decided website relevance to the research questions. An additional 13 websites were identified for removal. Seven of the websites removed offered a summer HPE program for high school and undergraduate students rather than a graduate program, and six referenced non-academic departments, funding, or publications which contained the term "health professions education". A final list of 43 institution websites with HPE program websites were deemed relevant and included in the data extraction stage.

3.2. Data extraction

Drawing on study objectives and the literature review, we collaboratively developed 15 total binomial codes to score DEI representation. Potential codes were organized in a list and codified to best address the research questions guiding this investigation. Final codes were used to create an
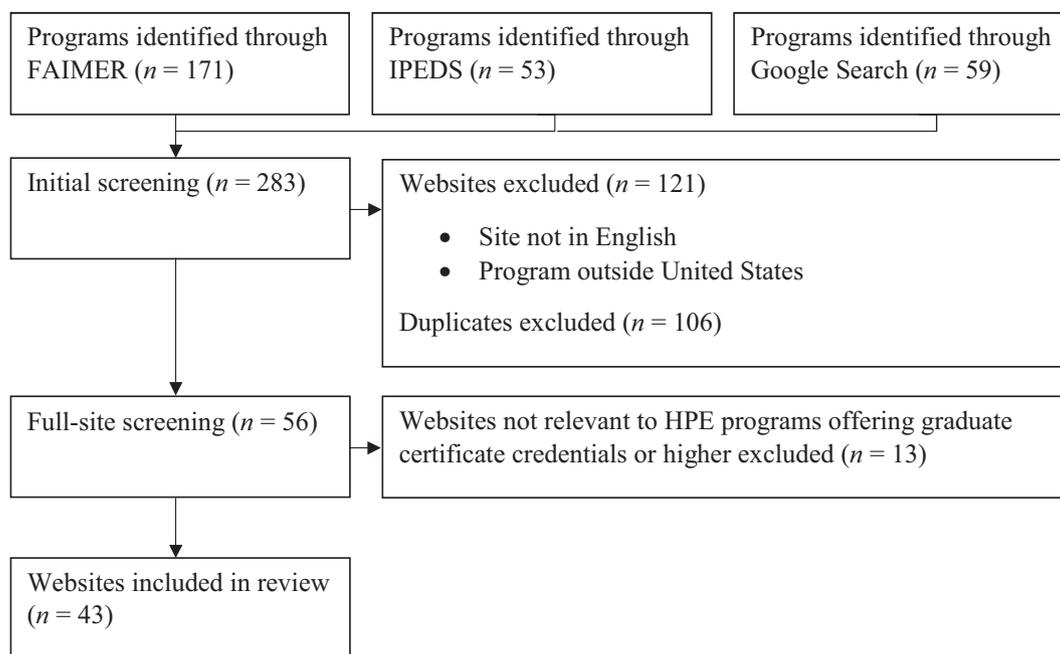
Fig. 1. Systematic website review process for DEI embeddedness.

electronic data collection form. To attend to the first research question examining the relationship between institution and program website diversity, 13 of the codes were divided into seven program-specific (gender diverse images, racially diverse images, faculty photos, faculty biographies, student photos, student biographies, and program-level diversity statement) and six institution-specific (gender diverse images, racially diverse images, non-discrimination statement, diversity statement, financial resources, and academic resources). To address the second research question examining diversity embeddedness for the purpose of student preparedness to address DEI in education, we used the remaining two binomial codes to evaluate HPE programs for at least one course focused on diversity-, and a concentration in diversity-, related topics. We encountered no broken links and agreed that website review would begin with HPE program home and other related pages examining images and text, followed by review of the program curriculum for evidence of diversity embeddedness. To consistently review idiosyncratic websites, we relied on left or top navigation prompts and the search feature on the website was only used after linked navigation was exhausted.

3.3. Coding agreement

From the 43 websites in the final list, five were randomly selected for extraction agreement comparisons. In most extracted data points, we agreed on the applied binomial score. To resolve differences in image scoring, we used IPEDS gender and race data for graduate students at the 43 institutions to establish a threshold for representativeness. Although program-specific demographic data were not available, based on the literature, we reasoned websites would appear diverse without violating a sense of community authenticity. IPEDS data showed no institution had less than 25% or more than 75% of graduate students identifying as male or female (nonbinary was not reported in IPEDS), nor as a single category of race. Therefore, we agreed to code all images present on a given site using the interquartile range, when if less than 25%, or more than 75%, of individuals represented on the webpage were of the same perceived gender or of the same perceived race, it was coded as unrepresentative. Three additional websites were selected for agreement comparison, and achieving full agreement through norming, the remaining 35 institutions were divided between the two researchers for data extraction.

3.4. Analysis

To determine the extent to which program-level diversity can be explained by institution-level diversity, a simple linear regression analysis was conducted, as it is the most appropriate test to determine if a single predictor variable is sufficient at explaining a single outcome variable [28]. Data were reviewed and cleaned, and descriptive

statistics were examined (Table 1). Finding no values out of expected descriptive ranges, composite variables using a simple average approach were created [29]. First, a program-level composite variable composed of the seven equally weighted program-specific code scores was created. The process was repeated to create an institution-level composite variable composed of the six equally weighted institution-specific code scores. Having the institution-level composite predictor variable and the program-level composite outcome variable in place, bivariate regression assumptions were tested. The residuals were independent (Durbin−Watson = 2.01), and homoscedasticity was observed in a scatterplot of residuals. To answer the second research question related to determining how HPE programs address student preparation for diversity issues in education, a descriptive analysis was conducted.

3.5. Limitations

Website images were categorized based on perceived content including perceived gender and perceived race. Images were categorized into only two categories: representative (25%−75% of individuals were of different perceived genders or of different perceived races), and unrepresentative (less than 25%, or more than 75%, of individuals were perceived to be from the same gender or same race). While there are some physical characteristics that are common among gender or racialized groups, the assigned category may not be congruent to the self-reported classification that would be identified using survey or other data collection methods. In addition, the motivations related to using particular images, or the availability of a variety of images, is unknown.

We only analyzed what was available for students to review online when previewing web content through navigation links or searching for specific terms. It is possible content was not extracted for analysis because of its location on the website. For instance, websites which were less maintained or less user-friendly may have masked content from review. Likewise, web content is known to be dynamic, and the content may have been updated since the time of the initial review.

4. Results

Descriptive statistics for diversity presence for the seven program-specific and six institutional-specific diversity elements on 43 HPE websites are displayed in Table 1. Displayed in Table 2 are the simple linear regression results used to explain if institution-level diversity content explained program-level diversity content. The fitted regression model was $\hat{y} = .03 + .65x$. The overall regression was statistically significant ($R^2 = .09$, $F[1,41] = 4.22$, $p = .046$, CI 95% [0.01−1.28]). Thus, a small but significant amount of variance in program-level website diversity content scores is explained by institution-level website diversity content scores.

Results of the second research question revealed that program websites did not present evidence of embedding diversity within the curriculum. Only eight of the 43 programs (19%) offered HPE students a course with keyword terms ("diversity," "equity," "DEI," "health disparity," "social justice," or "cultural competence") incorporated in the title or course description. Only one of the 43 (2%) offered a formal track, concentration, or certificate dedicated to diversity-related topics within the HPE context.

5. Discussion

Websites are key sources of information for applicants [20,21], and in this study, 100% of HPE

Table 1. Presence of coded DEI elements.

DEI Elements	n	%
Institution-level DEI Elements Present		
Gender diverse homepage media	18	45%
Race diverse homepage media	16	40%
Non-discrimination statement	36	84%
Diversity statement	37	86%
Financial resources	42	98%
Academic resources	36	84%
Total	185	73%
Program-level DEI Elements Present		
Gender diverse program page media	16	52%
Race diverse program page media	14	45%
Faculty images	27	63%
Faculty biographies	21	49%
Student images	28	65%
Student biographies	3	7%
Program diversity statement	3	7%
Total	112	40%
Curriculum Embeddedness Present		
Diversity-focused course	8	19%
Diversity-focused credential/track	1	2%
Total	9	11%

Note. In most categories, the total $n = 43$. In the gender and race diverse homepage media categories, $n = 40$, and in the gender and race diverse program media categories, $n = 31$, because some institutions had no media available for review.

Table 2. Bivariate Regression Results Predicting Program-level DEI presence score.

Predictor	B	SE	β
Institution-level DEI presence score	.65	.32	.31*

N = 43; $R^2 = .09$.
*p < .05.

programs had a functional institutional-level and program-level website to review. However, the quality of information and diversity represented on those sites varied widely.

Institutions demonstrated awareness of the diversity imperative to recruit and prepare diverse health professionals to improve health outcomes as evidenced by textual statements on their websites. Both a formal nondiscrimination policy and a statement of institutional commitment to diversity, equity, and inclusion were found on 84% and 86% of institution-level websites respectively. As recognized in the literature, diversity statements may include institutional values, cultural benefits, and action-orientation [9], and they are important messages to communicate to prospective students [30]. Therefore, inclusion of DEI-related statements on institution websites identified in this study suggests the multicultural market wellbeing approach, as described by the DIEM [12] study framework, is useful and relevant for recruiting diverse health professions education students.

Website content including images, videos, and textual descriptions related to aspects of gender and race diversity were identifiable but less superficial aspects of diversity such as nationality, language, religion, (dis)ability, sexual orientation, age, socio-economic status, etc. were not easily discernible. This finding suggests that although institutions attempt to be, and appear to be, diverse, as posited by Ford, Patterson [15], that some aspects of diversity are not well represented across the institution, nor deeply embedded down to the program-level. The development of a common and holistic definition of diversity within DIEM may be useful for scholars and practitioners in further incorporating diversity and diversity-related topics within the program-level.

Although each program site had distinct content and navigation, there were many similarities among the HPE sites which revealed common DEI gaps. For instance, most program sites prominently featured faculty which suggested recognition that faculty play valuable roles in conveying DEI values. Inclusion of faculty photos and biographies on program-level websites reinforced findings of previous research [31] that expertise and affinity communication attracted applicants to the program.

Most sites did not feature student images or textual descriptions of student profiles. The lack of student-focused communication suggested a disconnect between the content and the intended reader. Indeed, 13 of 43 program websites did not address students and their needs in any way through text or images, 28 included images of students, and only three included student biographies. None of the student images and biographies suggested other aspects of diversity representation such as nationality, religion, ability, etc. This lack of student-oriented communication insinuates DIEM strategies have not trickled down from the institution to the program level and the economic and social forces for inclusion are not yet felt by program-level leaders. It may also suggest a lack of market awareness initially posited by DIEM authors. Alternative explanations for the presence or absence of diversity elements among HPE websites may be attributable to technical capabilities, access to a variety of images, or restricted permissions to edit sites.

The results of this study indicated one program included a formal track or credential in diversity, eight offered a course suggestive of incorporating diversity education into the curriculum, and three contained a program-specific diversity statement. Considering ongoing health disparities [14,32] and the need for health professionals to receive formal education in addressing the needs of diverse populations [7], this finding is concerning as it implies that current and future health profession educator students may not get the information they require to address DEI adequately in their own education and health profession practices.

In summary, emphasizing diversity on a website is more than symbolic, it communicates institutional values and practices to potential students [17,22]. This study used the diversity and inclusion engaged marketing framework [12] employing systematic website review methods to determine the ways institution-level and program-level websites communicated diversity. Findings demonstrate institution-level evidence of diversity commitment through textual statements, links to academic and financial resources, and use of gender and race diverse images. However, the DIEM strategies did not trickle down to program-level websites. Programs infrequently displayed diverse images or offered textual evidence of diversity curriculum embeddedness. The relationship between institution-level and program-level DEI website elements was significant with small effect. The program-level diversity web content gaps may be attributable to a lack of awareness or lack of technical capabilities, and although some issues may be easily resolved, others, such as diversifying faculty bodies or revising the curriculum, may require more sustainable change approaches beyond a surface-level website update.

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