

# Diversity Reflection on Orthopaedic Surgery Residency Program Websites: Exploring the Role of Contextual Factors

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## INTRODUCTION:

Diversity and inclusivity are vital in Orthopaedic Surgery Residency Programs for equitable health care. Program websites play a crucial role in recruitment and fostering diversity, but our understanding of their portrayal and the influence of contextual factors is limited.

To attract diverse applicants, it is crucial to investigate how websites showcase diversity-related elements. Understanding the impact of contextual factors contributes to building a diverse physician workforce.

This study examines how program websites reflect diversity and the influence of contextual factors. By exploring their shaping factors, we contribute to cultivating diverse and inclusive Orthopaedic Surgery Residency Programs.

## METHODS:

This cross-sectional study examined the impact of program type, city population, region, program director/chair gender and ethnicity, and program size on diversity elements of orthopaedic surgery residency programs in the United States. Data were collected from websites of those orthopaedic residency program identified in the Electronic Residency Application Service (ERAS) directory and the program size from National Resident Matching Program (NRMP) database. Military programs were excluded from the analysis. The evaluation focused on specific webpages related to the residency program, excluding sponsor webpages. Eight elements previously used in the general surgery literature were assessed to demonstrate programmatic commitment to diversity. Data on program type, city population, region, program director/chair gender and ethnicity, and program size were also collected.

Programs were classified into two groups based on the presence of four or more evaluated diversity elements on their websites. Associations between these elements and contextual factors were examined using chi-square or Fisher's exact tests.

## RESULTS:

A total of 199 active non-military programs were identified, with one program being excluded due to a website outage. The analyzed websites exhibited a mean  $\pm$  SD of  $4.32 \pm 1.75$  diversity elements. The majority of programs ( $n=141$ , 71.21%) featured four or more diversity elements on their websites.

Program affiliation and program size showed significant associations with the presence of at least 4 diversity elements on residency websites. Large programs and university programs were both found to be significantly associated with featuring more than 4 diversity elements (both P-values  $< 0.001$ ).

Among the states, Mississippi, New Hampshire, and Rhode Island displayed the highest mean diversity scores (mean score of 7). The presence of diversity reflection was significantly associated with program census division (P-Value=0.011). Table 1. presents the frequency of diversity scores among 9 census divisions, categorized into two groups based on whether they held 4 or more, or less than 4 diversity elements on their websites.

Figure 1 illustrates that individual photographs of residents (173, 87.37%) and faculty members (162, 81.82%) were the most commonly included diversity elements on program websites, while community resources (48, 24.24%) and standard nondiscrimination statements (27, 13.64%) were the least frequently observed.

## DISCUSSION AND CONCLUSION:

Program websites play a significant role in applicants' decision-making processes, with previous studies indicating their influence. Our study design was based on a questionnaire which incorporated input from diverse stakeholders, which strengthened the identification of key elements that highlight a program's commitment to diversity and inclusion.

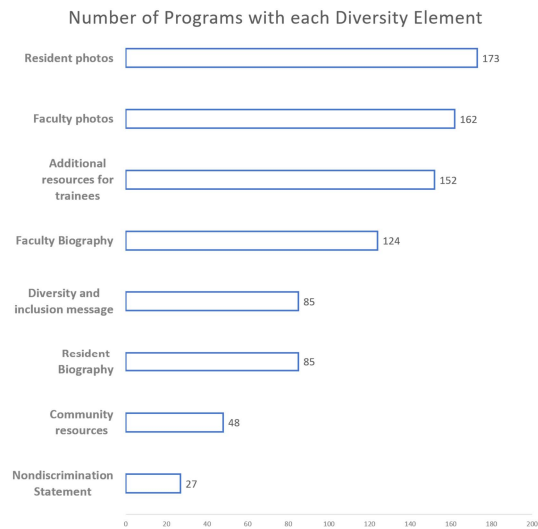
Our study aimed to evaluate the impact of program type, city population, region, program director/chair gender and ethnicity, and program size on the diversity elements of orthopaedic surgery residency program websites in the United States.

Recent studies have shown increasing efforts to promote gender and cultural diversity in orthopaedic surgery and that is in line with our results regarding more diversity elements being featured on program websites. Large programs and university programs were found to be significantly associated with including more than four diversity elements.

The sex and ethnicity of program directors and chairs did not significantly affect diversity representation, indicating unbiased selection practices. However, region and program size were associated with diversity reflection, calling for targeted actions in regions with lower diversity scores like the South Atlantic region.

While orthopaedic surgery programs generally scored higher on diversity compared to other specialties like general surgery, attention is needed to include clear non-discrimination statements and provide resources for underrepresented minorities.

In conclusion, our findings highlight the important website diversity elements and their contextual factors in orthopaedic surgery residency programs. Institutional factors, such as program size and affiliation, play a role in diversity representation. Addressing areas for improvement, such as enhancing non-discrimination statements and providing resources, can further enhance diversity and inclusivity in these programs.



**Table 1.** Diversity reflection in program websites in 9 census divisions of the US

| Geographic Region |                    | Number of Programs | Diversity Elements |        |
|-------------------|--------------------|--------------------|--------------------|--------|
|                   |                    |                    | <4                 | ≥4     |
| Northeast         | New England        | 9                  | 22.22%             | 77.78% |
|                   | Middle Atlantic    | 43                 | 37.21%             | 67.79% |
| Midwest           | East North Central | 43                 | 32.56%             | 67.44% |
|                   | West North Central | 12                 | 9.09%              | 90.91% |
| South             | South Atlantic     | 33                 | 48.48%             | 51.52% |
|                   | East South Central | 10                 | 0.00%              | 100%   |
|                   | West South Central | 20                 | 25.00%             | 75.00% |
| West              | Mountain           | 8                  | 0.00%              | 100%   |
|                   | Pacific            | 20                 | 15.00%             | 85.00% |
| Total             |                    | 198                | 28.79%             | 71.21% |
| P-Value           |                    |                    | 0.011              |        |