Mixed signals: an analysis of diversity value signaling in leading U.S. hospitals

Astin B. Cole[1], Courtney N. Haun[2], Geoffrey A. Silvera[3]

[1]Auburn University, Auburn, AL, USA; [2]Samford University, Birmingham, AL, USA; [3]University of Alabama at Birmingham, Birmingham, AL, USA

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Correspondence to: Geoffrey A. Silvera, PhD, MHA. 1716 9th Ave. South, Birmingham, AL 35233, USA. Email: gsilvera@uab.edu.

Background: As the United States (U.S.) population continues to diversify, the recruitment and retention of a diverse and culturally competent nursing workforce is paramount to delivering high quality care. To meet this challenge, organizations may use diversity value signaling (DVS) in recruitment materials. DVS, defined as the use of inclusive language and terms in organizational communication, is an extension of Signaling Theory which suggests that the content in a job description provides both instrumental and symbolic signaling of the organization's values, goals, and expectations. The purpose of this study is to examine the prevalence of DVS in leading U.S. hospitals and to explore whether there is a relationship between DVS and performance.

Methods: A purposive sample of hospitals from the 2021–2022 U.S. News Best Hospitals rankings was examined for the use of DVS content in nursing job advertisements from leading U.S. hospitals (n=100) to investigate the prevalence of DVS in leading hospitals and to explore the relationship between DVS and hospital performance.

Results: Hospitals with DVS are ranked higher than hospitals that rely on compliance-based statements or no signaling at all. In addition, hospitals with no DVS have the lowest average patient experience. Among the hospitals without DVS, hospitals with compliance-based statements have a lower rank than those with nothing at all.

Conclusions: This paper serves as a call for further research to examine diversity as a value in job recruitment and how DVS is related to nurse staffing and patient outcomes.

Keywords: Diversity; inclusion; diversity, equity, and inclusion (DEI); patient experience; hospitals

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Introduction

According to the latest United States (U.S.) Census, population demographics are changing rapidly both in terms of race and culture (1). According to the 2020 U.S. Census, persons identifying as racial and ethnic minorities represent 43% of the total population in the U.S, the highest proportion ever (2). When combined with recent calls for social justice and accountability from organizations across all industries, hospitals in the U.S. are tasked with meeting demands from both external and internal stakeholders. On one hand, hospitals are being tasked with delivering services to an increasingly diverse population of patients with varying needs and expectations while maintaining quality performance. On the other hand, hospitals are additionally tasked with recruiting and retaining a more diverse and culturally competent workforce to aid in meeting the needs of these changing populations.

Recruiting a diverse and culturally competent nursing workforce is essential to meeting these challenges. Nursing

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is the largest health care profession in the U.S., and registered nurses (RNs) play a crucial role in health care delivery as they perform a wide range of professional and interpersonal functions germane to patients' overall quality of care. A recently released report from the *Institute of Medicine* (IOM) on the future of nursing calls for an increase in ethnic and racial diversity in the nursing workforce, and as the nursing workforce is comprised primarily of white females, it is not reflective of the diversity in the patient population (3). Amongst nurses that identify as racial or ethnic minorities, Black/African American nurses approximate their representation in the population at 12%, but Hispanic nurse representation is at 7.4% as of 2018, despite making up 18.7% of the U.S. population (3). In addition to persistent gaps in nurse workforce diversity, trends such as an aging RN workforce, a growing demand for long-term care providers, and the downswing in the number of younger nurses have resulted in decades long nurse shortage (2,4).

The purpose of this study is to examine the degree to which leading U.S. hospitals are utilizing Diversity Value Signaling (DVS) to meet the challenges of the changing demographics and to explore whether doing so is related to performance. DVS is defined as the use of inclusive language and terms in public organizational communication such as job advertisements, press releases, media advertisements, diversity statements, mission statements [mission, vision, and values], and the like which reflect a strategic intention to value diversity and inclusion across the organizational stakeholders. This exploratory study seeks to examine the relationship between DVS and performance in U.S. hospitals, a purposive sample of nursing job advertisements at 100 leading U.S. hospitals (n=100) is analyzed. The results show that while the use of DVS in job advertisements at leading U.S. hospitals is varied it corresponds with higher performance among leading hospitals in terms of both ranking and patient experience outcomes. A supplementary analysis finds that leading hospital's use of compliance-based language in job advertisements, language that indicates adherence to a legal requirement to not discriminate (5), corresponds with lower ranking and patient experience ratings. A discussion of these findings and suggestions for future research is provided, highlighting the potential implications of the use of inclusive language in workforce diversification initiatives and strategic diversity, equity, and inclusion (DEI) initiatives.

Background

DVS is an extension of Signaling Theory (6), which suggests that the content in a job description provides both instrumental and symbolic signaling of the organization's values, goals, and expectations (7-9). During the application phase, recruiters typically have little control over the pool of potential applicants, further, job applicants have little information about the company they are applying to. Signaling theory argues that organizations communicate through various "signals" or apparent characteristics to prospective employees, who, in turn, vary in how they interpret and respond to that information (7,9-11). First proposed by Spence (1973), signaling theory proposes that two parties can overcome the problem of adverse selection in workforce recruitment by having the organization project their values and expectations in some way to the other party (7-9). In short, signaling theory helps to explain how organizations emit a favorable attribute to outsiders with limited information and time. Signaling, as it relates to diversity, refers to the use of symbols, messages, or images to convey the positive attributes of the organization such as fairness and equity.

Valuing diversity in a workforce can emerge from an instrumental or non-instrumental context (7,9,10,12,13). While an instrumental context seeks to fill gaps in cultural diversity created by changes in the environment, the latter seeks to value diversity as an inherent and intrinsic societal value. The type of signaling used can also influence the outcomes associated with recruitment. This differs from a largely symbolic signal, such as images of ethnically homogenous coworkers on the company's website, which relies largely on the subjective context surrounding the ethnic group portrayed to convey an organization's intentions to an applicant (7-9). Additionally, diversity signaling can be considered strong or weak, as explicit signals can better reduce the uncertainty created by a lack of organizational information for a potential applicant than implicit, largely symbolic signals (7-9).

Signaling depends largely on the context surrounding the sender and receiver of the signal (7-9). For example, signals can be strong such as in a job advertisement or weak such as in a work-related email over the weekend. Rather than choosing instrumental over non-instrumental signaling, scholars suggest that firms can mix the two approaches or use both simultaneously (7-9). For example, firms have been found to strategically assemble diverse and heterogeneous boards to

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signal a commitment to social values (14). While this form of signaling is instrumental, as the purpose results in tangible evidence of the organization's commitment to diversity as a value, the intention to signal diversity is also instrumental, as the organization seeks to appear more attractive to larger financers (7,14). Signaling has also been used to explain how the contents of job advertisements can shape applicant expectations of firm level diversity and inclusion practices (13) as well as perceptions of job security (9) by simply mentioning these topics as organizational values.

Scholarship suggests that many organizations consider how they present the diversity of their personnel in advertisements, as well as how they describe diversity on job advertisements and websites (7). White *et al.*, (2019) find that applicants rely on signals from the organization (e.g., recruiter characteristics and advertisements) to form judgments about the organization's value-system. For example, applicants interpret symbolic diversity signals such as the personnel displayed on the organization's webpages to help inform them of their likelihood to be hired (13). Organizations use targeted signaling to present values that identity groups would find appealing in an employer, such as equal employment opportunity, diversity, or specific diversity-driven initiatives such as affirmative action (7,13). Further evidence suggests that targeted diversity signaling results in higher employment of the targeted group, with targeted racial minority applicants actively seeking organizations that engage in targeted diversity signaling (7,13).

Through the lens of DVS in hospitals, this suggests that organizations utilize diversity signaling language to reflect a commitment to fairness and equality, traits that make the organization more attractive to high level employees, physicians, patients, and financers (7,14-16). DVS through job advertisements is considered an opportunity to signal to their environment that the hospital is socially responsible, and more progressive than hospitals that do not (7,14). As a result, there are market-based drivers to signal the value of diversity (ex. a diverse patient population) as well as competition-based drivers to utilize DVS (ex. rival health systems utilization of DVS).

Diversity recruitment and patient experience

Diversity training and recruitment is of growing importance in many reports calling to address challenges related to health literacy, program effectiveness, and health disparity (17,18). Lotfi *et al.* (2019) as well as other scholars note the importance of the representation and celebration of diverse people in order to increase workforce knowledge of the different opinions, preferences, cultures, that influence the patient's perceived level of comfort and trust in health systems (15-18). Weech-Maldonado's (2018) work in cultural competency provides the strongest linkage between patient experience and diversity values, finding associations between cultural competency and improved performance in patient experience based on whether the hospital's staff engaged in cultural competency training in U.S. Hospitals. Cultural competency is an organizational strategy that addresses cultural and communication barriers in patient experience by training providers to deliver high quality care to a diverse patient population (16). However, scholars suggest that far too few health care organizations are taking the importance of diversity as an organizational value seriously (16-18).

Given that leading hospitals should have organizational and strategic advantages to provide applicants with ample information related to the organizational expectations for diverse-minded and culturally competent applicants, there has yet been an exploration of the use of DVS in hospitals. Furthermore, little evidence has been provided to indicate whether utilizing DVS has direct or indirect implications in hospital quality performance. Exploring the relationship between diversity values and organizational performance, aspects that healthcare organizations value universally, may lead to a shift in attitudes and strategy regarding diversity and inclusion. The present study is an early exploration into these important questions as it seeks to assess the degree to which DVS is prevalent in U.S. Hospitals by examining the prevalence of DVS in leading hospitals across the country.

Methods

Nurse job advertisements were collected from the top 20 hospitals within states across various regions of the U.S. (Texas, Florida, New York, Illinois, and California) based on the 2021–2022 U.S. News Best Hospitals ranking (n=100) during the month of June 2021 (19). The inclusion criteria consisted of three requirements: The location of the advertised position must match the location of the ranked hospital; advertised position must be provided from the ranked hospital's official website; job ad position must be designated for a registered nurse (RN).

Hospital rank

Hospital ranks were coded from the 2021–2022 U.S. News Best Hospitals ranking (19). The rankings system uses two

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components: specialty rankings and standard procedure rankings. The Best Hospitals specialty rankings are meant for patients with life-threatening or rare conditions who need a hospital that excels in treating complex, high-risk cases (19). Tied-ranking scores were eliminated to avoid inflated differences in rank among hospitals.

Diversity value signaling

Diversity value signaling (DVS) was coded based on meeting either of the following criteria: 1. As a binary which determined whether words such as "diverse" diversity" "equity" and "inclusion" were used reflect diversity as a recruitment strategy or 2. As a binary which determined whether the diversity content reflects the importance of the diversity of the workforce as a value to the organization. Instances when job advertisements include the word "diverse" or "diversity" to describe the variety of work tasks were not included as DVS.

Patient experience

Patient experience was pulled from each ranked hospital online profiles in the 2021–2022 U.S. News Best Hospitals ranked hospitals report. The patient experience scores used by U.S. News are based on patient ratings of their overall experience as captured via the Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) surveys (20). They are asked about different aspects of their hospital stay such as whether their nurses communicated well with them, whether their medication was explained to them clearly, and whether the staff was pleasant during the discharge process.

Statistical analysis

This study coded and analyzed the content of 100 job ads to compare the use of diversity value signaling, compliance-based signaling, and patient experience among the leading hospitals in the largest health systems in the United States. The key variables were all examined via Microsoft Excel version 16 to determine signaling prevalence and performance in top-ranking hospitals.

Results

Table 1 provides the prevalence of diversity signaling, Equal Opportunity Employer (EOE) signaling, and average patient experience rank among the top 20 health systems in the states selected. According to *Table 1*, among all the states selected, EOE signaling was the predominate form of signaling at 67%. States that used EOE signaling in job ads most frequently included New York (85%, n=17) with California and Texas tied for second at 75% (n=15). By comparison, the use of diversity signaling beyond EOE was less than half among all states, with New York leading by the largest margin at 80% (n=16). Lastly, Florida has the highest average patient experience rank at 3.6, with New York having the lowest at 2.7.

Table 2 provides the overall rank difference for health systems with job ads that include DVS *vs.* states that do not. The top 20 hospitals were ranked in order from 1 to 20, thus a higher overall rank value is less favorable. According to *Table 2* among the hospitals analyzed, health systems whose job ads include DVS were ranked higher overall (−0.97) than health systems that did not. There was considerable variation among the states as hospitals in New York (−3.33) and Texas (−3.44) that include DVS are over three ranks higher than their counterparts.

Table 3 provides the average patient experience rank difference for health systems with job ads that include DVS *vs.* states that do not. A higher value, in this case, indicates a superior patient experience rank. According to *Table 3*, among all the states selected, health systems whose job ads include DVS were ranked higher on patient experience (0.01) than health systems that do not. Among specific states, diversity signaling health systems in California (0.2) and Florida (0.6) had higher patient experience ranks than health systems that did not.

Supplementary analysis

A supplementary analysis was executed to ascertain whether the use of compliance-based signaling was distinct from DVS. In the U.S., all companies are barred from discriminating against people based on genetic factors including, but not limited to race, sexual identity/gender, sexual orientation, religion, and nation of origin. While this law is implicit, some organizations choose to explicitly state their compliance to the law. An example of compliance-based signaling is the use of EOE statements in job advertisements (5). Previous scholarship acknowledges that job advertisements will use both instrumental and non-instrumental language to provide both explicit and implicit information which will be received as either strong or weak signals by potential applicants (7,10,14). One way

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in which to conceive of the interpretation of compliance-based signaling is either as a weak signal of an organization's commitment to diversity, equity, and inclusion. Another way to interpret the use of compliance-based signaling is as innocuous due to its ubiquity as every organization is held to this standard, it is not a source of differentiation. In addition, some organizations may be required to include these statements based on their status as government employers. A binary measure (EOE) was created to assess the use of compliance-based language in the job advertisement based on the presence of an EOE statement.

Table 4 presents the results of the DVS strength, prevalence, and performance in U.S. hospitals analysis. The average rank, prevalence, and patient experience are shown based on the various strength of diversity signaling strategies. According to *Table 4*, having both DVS and EOE is the most prevalent combination at 36%. The second-most prevalent signaling combination is the use of the EOE statement by itself. Hospitals with DVS and an EOE statement have a higher overall rank than hospitals that rely on only EOE. Hospitals with DVS and no EOE had the highest overall rank among strategies at 8.13. By contrast, hospitals that rely on EOE statements were ranked the lowest among signaling strategies at 11.5. Lastly, health systems which neither provided additional diversity signaling or an EOE statement had the lowest average patient experience rank at 2.96. *Table 5* presents the DVS strength findings by state.

Discussion

This exploration finds considerable variation amongst leading hospitals regarding whether DVS language is used in nursing job advertisements. The results of the principal analyses find that 44% of the leading hospitals in the sample include DVS language in their job advertisements. Further analysis shows that there was variation amongst leading hospitals regarding the prevalence of DVS among states. Leading hospitals in New York (NY) and California (CA) include diversity value signaling at 80% and 55% prevalence, respectively whereas leading hospitals in the remaining regions (FL, IL, TX) each showed a 35% prevalence of DVS. It is important to note the variation in population diversity of New York and California compared to the other states. While New York and California have populations with similar or lower trends in white (non-Hispanic) Americans than the national average, compared to the other states who all have over 65% or more of the population as white (non-Hispanic) (2). These highly diverse populations necessitate a nurse workforce capable of communicating and comforting a diverse group of patients. This helps to explain why diversity as a value was found to be the most prevalent in places like New York. Further, while California's trends in hospital rank and patient experience provide relatively mixed results, the hospitals that signal diversity do so using both EOE compliance as well as additional signaling language.

Another important point is the different political environments in which each hospital operates. For example, while the national standard for disclosing the diversity of your workforce through the EO-1 form requires at least 100 employees, states such as California require it for 1 additional employee. As a result, while this trend suggests that diversity signaling, particularly the EOE statement, is predominate among the leading states, the difference in political and social values between each state may create more nuances in the way EOE signaling is used by different organizations and perceived by different audiences (7,21).

Additional analysis of the sample of leading hospitals sought to determine whether DVS might be related to performance differences amongst leading hospitals. The results of these analyses are presented in *Tables 2,3*. The results find that the average ranking of hospitals that did include DVS is slightly higher than those that did not. The average ranking across the sample for hospitals that included DVS language is 9.96 and 10.93 for hospitals that did not include DVS language. Hospital performance regarding patient experience was examined as well and finds that hospitals that include DVS language have an average star rating of 3.14, and the average is 3.13 for those that do not include DVS language.

This paper finds evidence that most leading hospitals acknowledge these trends in their population and are at least attempting to signal some level of compliance or commitment towards this trend. This paper finds that the practice of signaling diversity as a value appears to be developing faster in some areas more than in others. These differences are apparent among states. For example, according to *Table 5* states like Florida had virtually no diversity signaling at all among 55% of the job ads, while states like NY and TX used both compliant and value signals frequently, with 90% of job ads containing at least one signaling aspect in New York, compared to the 85% in Texas. Interestingly, New York and Texas did not follow the trend of higher signaling leading to better outcomes.

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Table 1 Prevalence of diversity value signaling

Sample	DVS (%)	EOE (%)	PE Avg.
All	48	67	3.14
California	55	75	3.40
Florida	35	45	3.60
Illinois	35	55	3.33
New York	80	85	2.68
Texas	35	75	3.33

The source of the data is from an original data set which researchers are willing to share. DVS, diversity value signaling; EOE, Equal Opportunity Employer; PE, patient experience rank.

Table 2 Average rank difference DVS versus non-DVS hospitals

Sample	DVS (Yes)	Non-DVS	Rank difference
All	9.96	10.93	–0.97
California	12.30	8.70	+3.60
Florida	9.00	11.14	–2.14
Illinois	9.17	11.07	–1.90
New York	8.17	11.50	–3.33
Texas	9.81	13.25	–3.44

The source of the data is from an original data set which researchers are willing to share. DVS, diversity value signaling.

Table 3 Average PE difference DVS versus non-DVS hospitals

Sample	DVS (Yes)	Non-DVS	PE difference
All	3.14	3.13	+0.01
California	3.40	3.20	+0.20
Florida	3.60	3.00	+0.60
Illinois	3.33	3.21	+0.12
New York	2.68	2.75	–0.07
Texas	3.33	3.21	–0.12

The source of the data is from an original data set which researchers are willing to share. DVS, diversity value signaling; PE, patient experience rank.

This can be explained by the asymmetrical use of diversity signaling from both states.

While many of the overall differences in signaling *vs.* non-signaling state outcomes found in this paper would be likely to reach the level of significance in an empirical analysis, that was not the intention of this early exploration. The differences do, however, point to a potential difference in outcomes when examined in a generalizable sample. This sample is inclusive of only high-performing hospitals, and even amongst this elite group of hospitals, the results find that hospitals that signal diversity as an organizational value tend to have higher overall ranking and as well as greater patient experience. This finding is in line with previous findings of a link between inclusive organizations and patient experience ratings (7,15,16,21). These differences in performance based on the presence of DVS varied across the states examined, but no clear relationships were explicitly evident.

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Table 4 Diversity value signal strength prevalence and performance in U.S. hospitals

Diversity/EOE	Signal strength	Prevalence	Rank	Patient experience
N/N	Absent	25%	10.24	2.96
N/Y	Compliance	31%	11.48387097	3.258064516
Y/N	Diversity	8%	8.125	3.25
Y/Y	Diversity & Compliance	36%	10.36111111	3.114285714

The source of the data is from an original data set which researchers are willing to share. EOE, Equal Opportunity Employer; N, no; Y, yes.

Table 5 DVS signal strength prevalence by state

State	N/N	N/Y	Y/N	Y/Y
Total	25	31	8	36
California	5	5	0	10
Florida	11	3	–	6
Illinois	4	10	5	1
New York	2	2	1	15
Texas	3	11	2	4

The source of the data is from an original data set which researchers are willing to share. DVS, diversity value signaling; N, no; Y, yes.

Job advertisements containing both an EOE statement and additional diversity signaling were the most prevalent combination among the top 20 hospitals in the 5 largest health systems at 36%. Using only an EOE statement in the job advertisement was found to be the second-largest combination. At 67%, the use of EOE statements was the most prevalent way to perhaps signal a commitment to diversity, albeit a weak commitment. It is important to note that while all businesses in the United States must adhere to the standards of equal opportunity employment laws that ban discrimination of various forms, leading hospitals may choose to signal their intention to adhere to these standards for several reasons.

One potential reason for declaring an intention to adhere to equal opportunity is a desire to signal compliance to the laws regarding diversity. These organizations may be choosing to use this easily recognizable and legally binding statement to signal their commitment to diversity (12-14), but do not desire to state anything beyond what is legally protected in their pursuit of job applicants (5). Another potential reason might be that these hospitals desire to signal compliance to the law to establish the organization's identity as a government entity. In these instances, the organization itself, may not have any say in the matter and is including compliance statements as pro forma in all job recruitment materials. Yet another reason to utilize compliance-based language may be based on a need or perceived need to protect the organization's workforce liabilities as hospitals that are anticipating, or currently experiencing accusations of discrimination can seek to cover their bases using this signal (16,22).

Each of these reasons point to organizations meeting the compliance quadrant of diversity management practices (5), which suggest a complacency in the organization's diversity, equity, and inclusion (DEI) efforts. This may help to explain why the hospitals in this study with DVS that is stronger than EOE have an overall higher rank than hospitals that rely on EOE (weak signaling) or nothing (no signaling at all). It may be that using DVS that goes beyond compliance is indicative of underlying DEI efforts within the organization, such as cultural competency training, or the like, that correspond to improvements in care delivery and quality performance (16). Furthermore, the preliminary findings of this study indicate that EOE is at best a weak signal of an organization's commitment to diversity, and EOE is perhaps neither intended as a DVS nor interpreted as a DVS.

While these findings lack the ability to convey the

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intention behind the DVS, the overall trend suggests that hospitals that signal a commitment to diversity tend to perform better than health systems that do not. Among the hospitals without DVS, the ones with EOE statements have a lower rank than those with nothing at all. Leading hospitals with no DVS of any kind have the lowest average patient experience. Further, these trends were found among most of the states observed even though signaling is voluntary. Signaling theory suggests that the intention to signal diversity is attached to an organization's desire to either become more diverse or to at least the organization's desire to "appear" to care about diversity (7,10,14). While one may indicate a declared commitment to diversity as a value, the other might indicate the minimum level of compliance (7,8). In this case, the more layers of signaling provided by the organization the more effective nurse applicants fitting the organization requires identifying themselves as a "good fit" (7,9-11,13). This helps to explain how organizations that strive to signal a commitment to inclusion beyond the EOE statement have outcomes which reflect a more diverse and culturally competent workforce.

Limitations

DVS is about intention, there has not been an exploration as to whether the operations within these organizations are in any way different. Additionally, while research suggests that targeted diversity signaling improves diversity outcomes, this paper finds that compliance signaling without additional diversity signaling may lead to mixed or worse outcomes. As a result, more qualitative research is needed to better understand the perspective of potential applicants when exposed to DVS. In this exploratory analysis, tied-ranking hospitals were assigned different ranks which may have introduced bias in the rankings but ensured a balanced sample across the states.

Potential challenges for future empirical research include the number of hospitals from each state in each category. New York was found to have the highest prevalence of using both DVS and EOE statements at 75% (n=15). By contrast, Illinois used both DVS and EOE statements the least, at 5%. On one hand, nearly all New York hospitals (80%, n=16) used DVS, with the remaining states had less than 5 hospitals, respectively. In the case of Texas, the circumstances are inversed, as this study found that many of the leading hospitals in Texas (70%, n=14) do not include diversity signaling in their nurse job advertisements. As a result, while on the surface, New York and Texas hospitals that neglect signaling have better patient experience outcomes, these confusing trends are likely the result of the asymmetric distribution of diversity signaling health systems throughout the leading US health systems. As a result, a larger sample of hospitals from additional states is likely needed to overcome the nuances found in different states developing their sense of diversity as a value in different circumstances.

Conclusions

Future scholarship should seek to determine if these results are consistent in a generalizable national sample. A question remains as to what motivates hospitals to utilize DVS. For some, it may be driven by a desire to have hospital staff that is reflective of the communities they serve, and for others it may be driven by a desire to be a more diverse and inclusive organization. While addressing these questions is beyond the purview of this exploratory study, they present opportunities for future research in this area. Of particular import is whether the outcomes related to patient experience vary based on the organization's motivations to signal diversity values.

There is some preliminary and related scholarship to suggest a link between the presence of DVS and improved performance about patient experience based on Weech-Maldonado's (2018) work with cultural competency in U.S. Hospitals (16). Future research may benefit from a larger sample of data (or a cross-sectional design) that allows for deeper variations within state boundaries and to the unique arrangement of cultural groups within a state. This exploratory study found considerable variation amongst leading hospitals regarding whether DVS language is used in nursing job advertisements. This paper serves as a call for further research to examine the role of DEI and diversity management in hospital care delivery and performance.

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