



Who is Worthy of Care? Examining Hospitals' Social Media Imagery as an Indicator of Culturally Congruent Health Care

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Introduction

- In the United States, there is a significant racial gap in health care utilization and health outcomes (Do, Frank and Finch 2012; Hill 2016; Meyers et al. 2019).
- Research shows that race has an independent effect on health outcomes; several factors contribute to this racial gap including health care providers lacking cultural competency (Arya et al. 2016; Chou et al. 2013; Cross et al. 1989; Do, Frank and Finch 2012; Jefferys 2012; Popescu et al. 2018). Culturally congruent health care, or care tailored to the cultural values, beliefs, traditions, practices, and lifestyles of clients, may moderate the effects of race on health care outcomes (Cross et al. 1989; Jefferys 2012).
- There has been limited research on how medical social media, or web-based content that is published by patients, physicians, or other professionals in the industry, either contributes to or hinders a health care facility's level of cultural competence – and whether this contributes to persistent racial disparities in health (Meyers et al. 2019). Medical social media is viewed by many as a resource to obtain knowledge and learn about the experiences of others who may be suffering from similar illnesses/ailments.
- Today, the majority (72%) of Americans use at least one social media platform for entertainment or instrumental purposes. Social media has become an important point-of-access for many to seek health information – but how this information is both presented and used may vary by social group (Brooks et al. 2011).
- Previous research has shown that people of color may be more likely to use health information gathered from various information channels to actually treat their illnesses as opposed to seeking professional, in-person, care – likely due to lower rates of health insurance coverage among people of color (Brooks et al. 2011). Considering this information, it is necessary to study how medical care facilities present health information on their social media accounts to determine whether these facilities effectively present culturally congruent information, and accurately represent the communities they are intended to serve.

After a review of the literature, I have constructed three research questions:

1. Does the racial composition in hospitals' media communications accurately represent the racial make-up of the communities they serve?
2. How are the individuals portrayed in the social media posts?
3. Do trends regarding portrayal emerge along racial lines?

Methodology

Method: I conducted a visual content analysis of Boston-area hospitals' Facebook and Instagram pages. Because the data was collected from public social media sites, I did not need UNH IRB approval to conduct this study.

Field Site & Sampling: The Boston area was chosen as a field site due to both recent demographic changes (increasing diversity) as well as the favorable reputation maintained by the city's hospitals (Bluestone and Stevenson 2000). I relied on 2019 *U.S. News Best Regional Hospitals* ranking, selecting the top 4 highest-ranked hospitals in the Boston area.

Time Frame: Following the research design of a similar study by Meyers and colleagues (2019), I eliminated six months associated with major holidays and/or national health observances. I observe and analyze Facebook and Instagram posts first posted over a three-month period (June, July, and August) in 2019. I selected a three-month time frame to ensure that a substantial amount of data would be collected, and could still be analyzed within the time constraints of this study.

Analytical Method: I first coded individuals appearing in each post into the following racial categories: *White, Black, Hispanic, Asian, or Unable to Identify*. I compare the racial make-up of each hospital with the racial make-up of the Boston-Cambridge-Newton Metropolitan Statistical Area (MSA) according to the 2018 American Community Survey Estimates (U.S. Census Bureau). An odds ratio was calculated to show how the odds of belonging to each racial category varied by hospital when compared to the MSA, and a Pearson's chi-squared test was used to determine if the proportions were significantly different from one another. I analyzed the caption content of each social media post by organizing captions into two categories: those associated with posts displaying a majority of White or Asian individuals, and those associated with posts displaying a majority of Black or Hispanic individuals. I used the qualitative data analysis software ATLAS.ti to tally a word count and generate a word cloud for the two categories of captions. I then coded and analyzed each set of captions separately using open coding method based on grounded theory method (Strauss 1987).

Data

	Care System	# Beds	Est.	Emergency Dept.	Facebook Page Likes	Instagram Page Followers	Facebook Posts Analyzed	Instagram Posts Analyzed
Beth Israel Deaconess Medical Center	Private, Non-Profit	651	1896	Level I	22.2k	3.6k	37	27
Brigham and Women's	Teaching, Private – Partner's Health Care	793	1980	Level I	66.6k	16.4k	9	42
Lahey Hospital and Medical Center	Merged with BIDMC March 2019	335	1923	Level I	14.3k	2.5k	17	51
Massachusetts General Hospital	Teaching, Private – Partner's Health Care	999	1811	Level I, Level I Pediatric	92.7k	24.8k	79	51
Total							142	171

Table 1: Descriptive information for each hospital including care system, number of beds, emergency department rating, Facebook and Instagram following, as well as the number of posts analyzed from each hospital on both Facebook and Instagram.

Diversity in Images

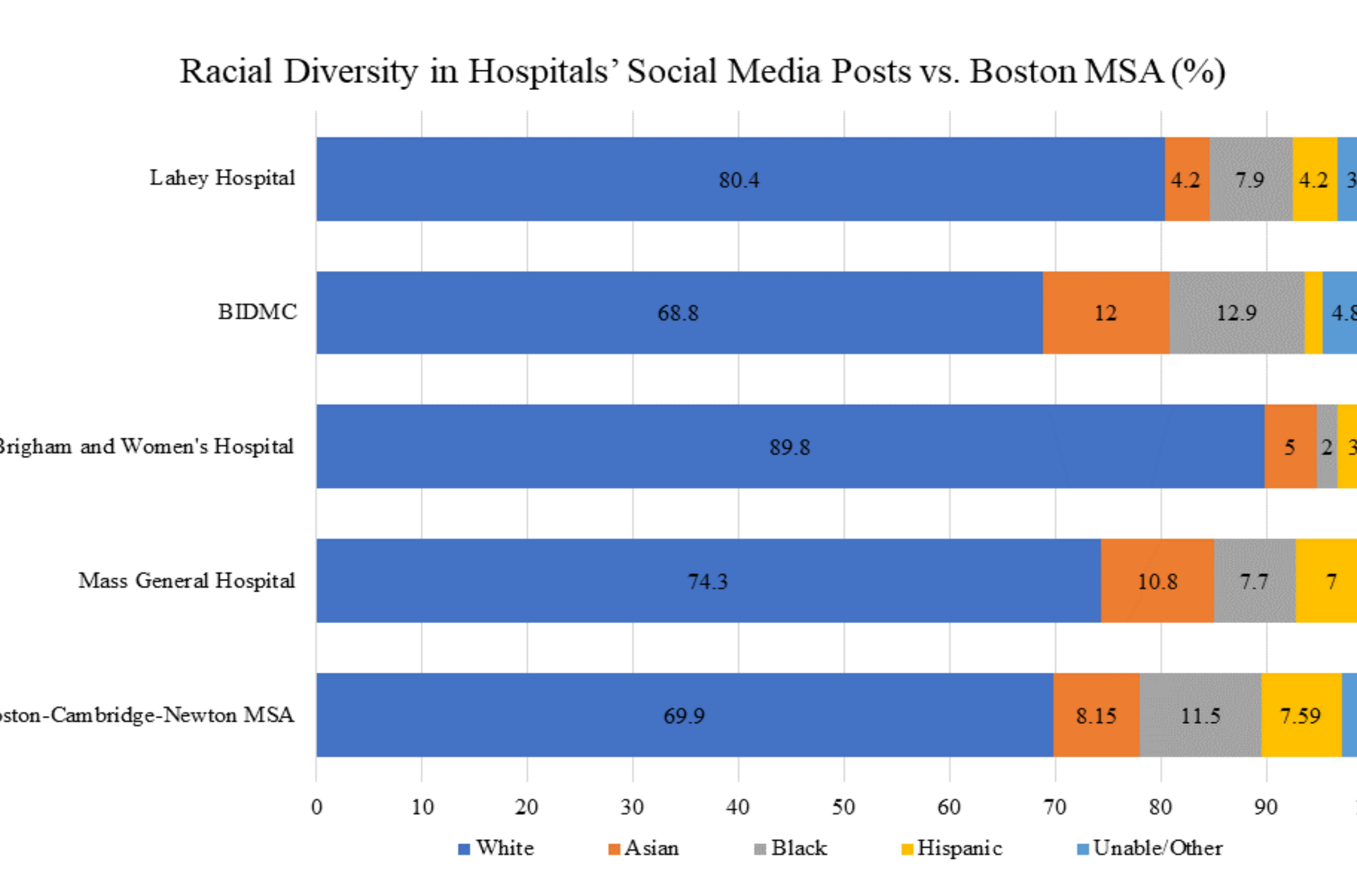
Table 2: Racial composition of Boston Metropolitan Statistical Area and each hospital field site with calculated risk ratios in parenthesis.

	Boston-Cambridge-Newton MSA	Massachusetts General Hospital	Brigham and Women's Hospital	Beth Israel Deaconess Medical Center	Lahey Hospital & Medical Center	Hospital Total
White (Non-Hispanic)	69.9%	74.3% (1.06*)	89.8% (1.28***)	68.8% (.98)	80.4% (1.15***)	75.8% (1.08**)
Black	11.5%	7.7% (.67**)	2.0% (.17**)	12.9% (1.12)	7.9% (.69**)	8.7% (.76*)
Asian American	8.15%	10.8% (1.3**)	5.0% (.61***)	4.2% (1.5***)	8.8% (.52***)	8.8% (1.1)
Hispanic/Latino	7.59%	7.0% (.92)	3.0% (.40***)	1.6% (.21***)	4.2% (.55***)	4.5% (.59***)
Other/Unable to Identify in Images	2.86%	n/a	n/a	4.8% (1.7***)	3.0% (1.0)	2.2% (.77)

* p < 0.05 ** p < 0.01 *** p < 0.001

Note: The relative risk ratios included in the table tell us the "relative risk" of an individual belonging to a racial category for each hospital relative to the reference group (the Boston MSA). For example, the "relative risk" of belonging to the White (Non-Hispanic) racial category is 1.28 for Brigham and Women's Hospital when compared to the Boston MSA – which means that an individual found in the social media posts of Brigham and Women's hospital is 1.28x more likely to be white than when found in the target population (Boston MSA).

Figure 1: Bar graph displaying percentages of each racial category for Boston Metropolitan statistical area and each hospital field site.



Caption Analysis

Figure 2: Word cloud containing words most frequently appearing in posts displaying White or Asian individuals.

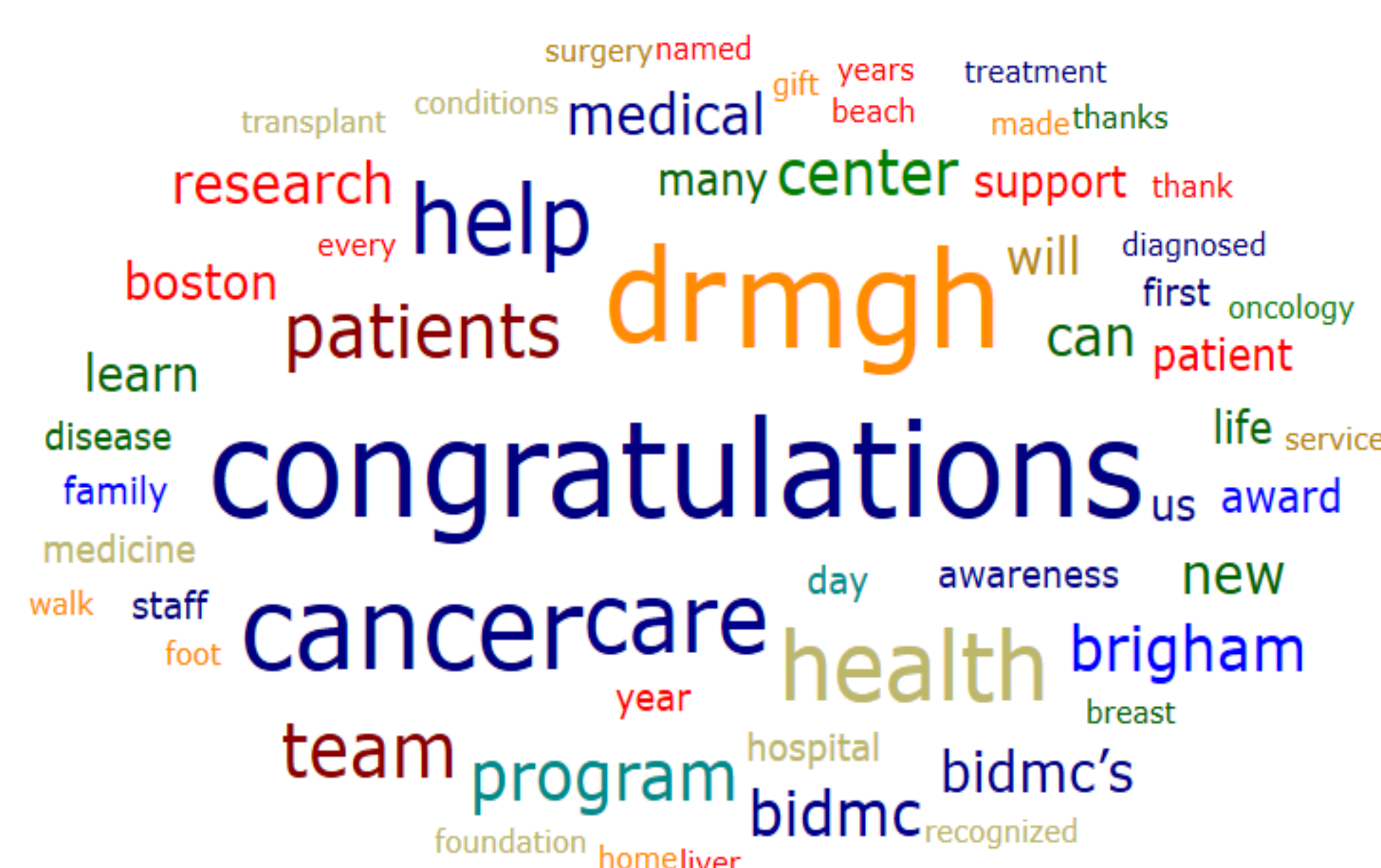
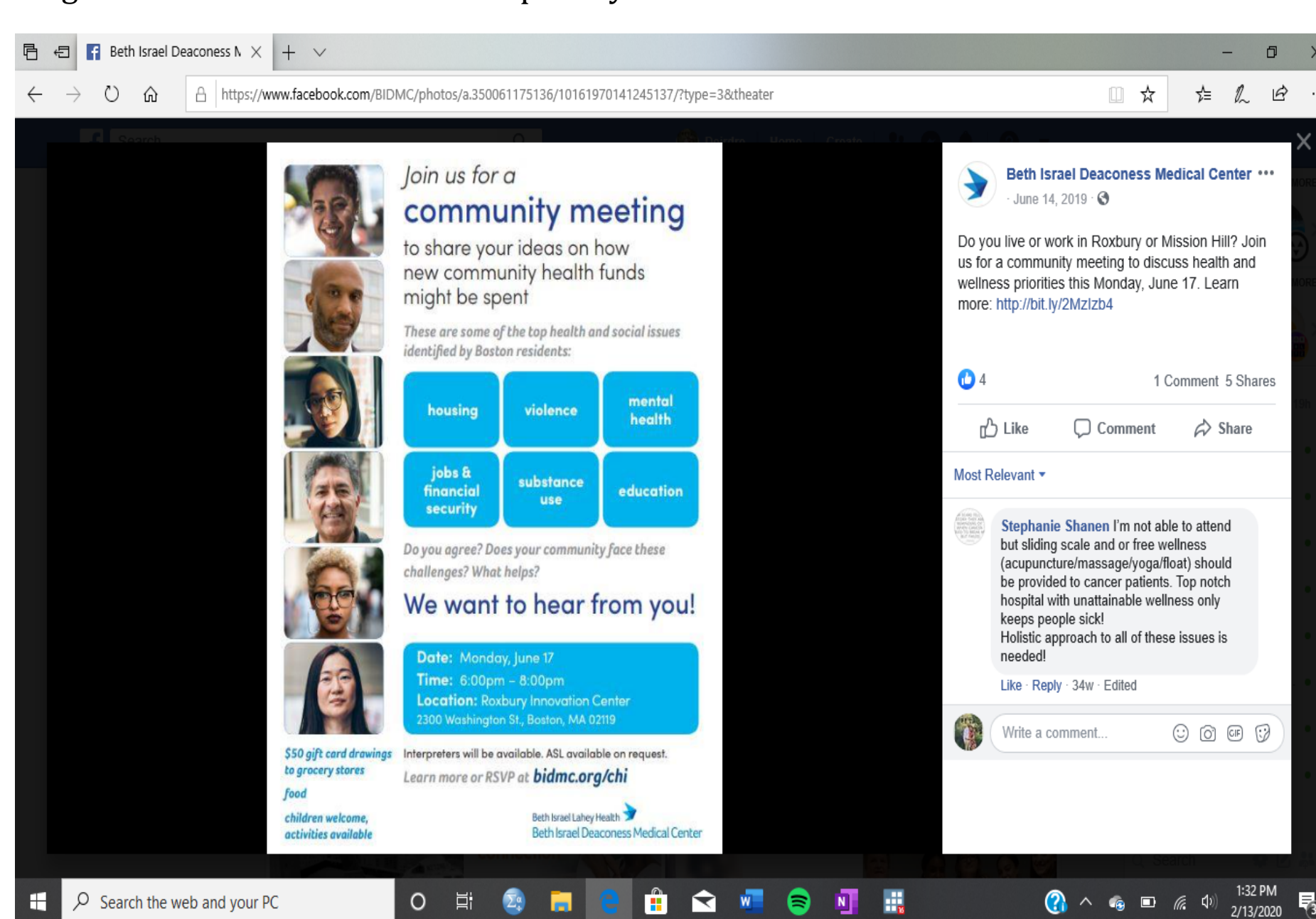


Figure 3: Word cloud containing words most frequently appearing in posts displaying Black or Hispanic individuals.

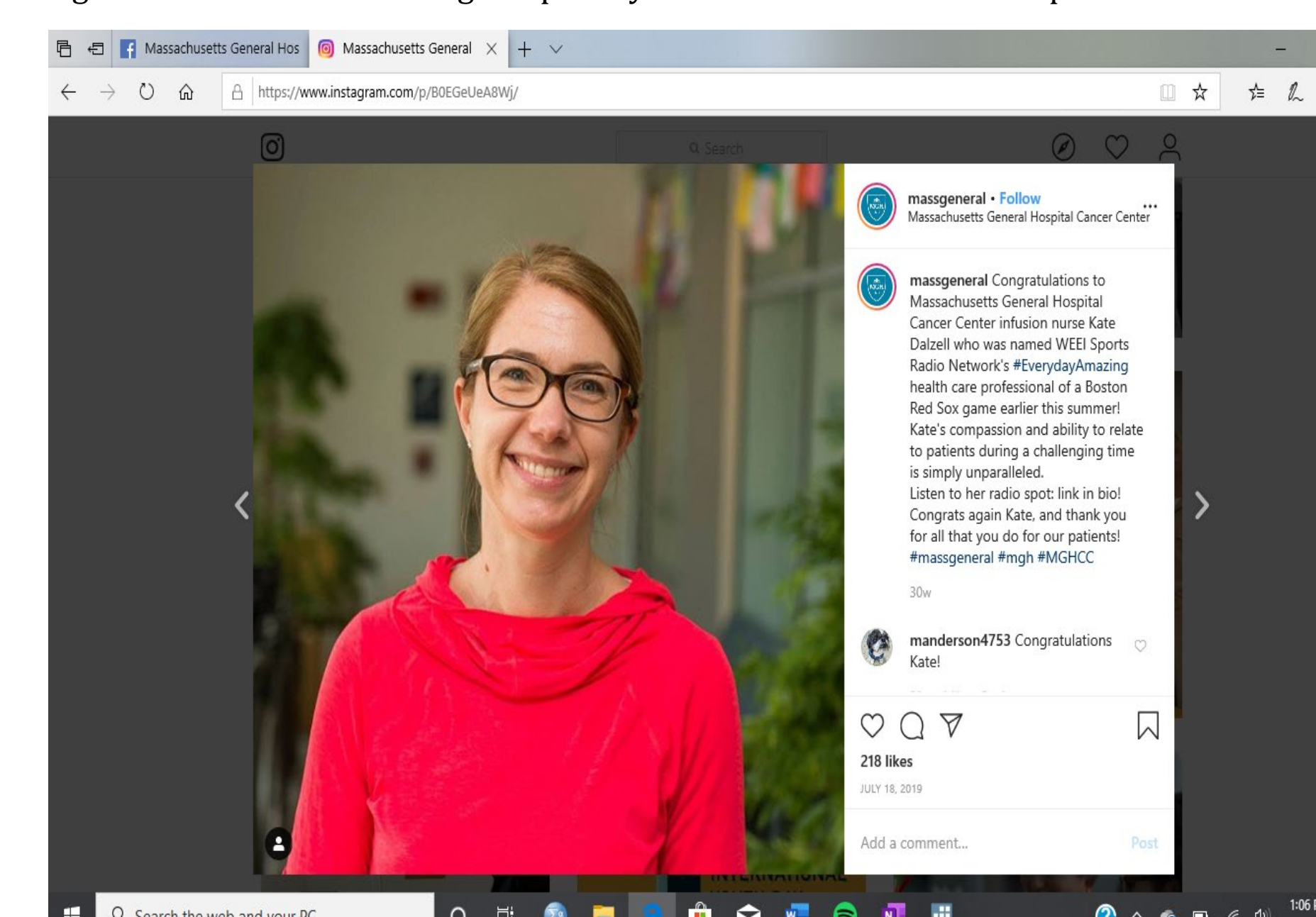


Figure 4: Screenshot of Facebook post by BIDMC.



The theme of *community outreach/involvement* emerged in captions associated with posts displaying a majority of Black or Hispanic individuals. Captions that fit the theme of *community outreach/involvement* included messaging such as appreciation for community health centers, hosting community events like a MGH sponsored Latino Family Festival, and sharing upcoming community initiatives like the example seen above.

Figure 5: Screenshot of Instagram post by Massachusetts General Hospital.



The theme of *employee recognition* emerged in captions associated with posts displaying a majority of White or Asian individuals. Captions that fit the theme of *employee recognition* included messaging such as congratulating health professionals for being honored/awarded, thanking employees for their hard work, or congratulating employees on being recognized by the larger community such as in the example above.

Preliminary Findings & Discussion

Research Question 1: Does the racial composition in hospitals' media communications accurately represent the racial make-up of the communities they serve?

- Answer: No.
- Whites are significantly overrepresented in the media images of the hospitals, while Blacks and Hispanics remain significantly underrepresented. Results are mixed with regards to the representation of Asians; two hospitals significantly overrepresent Asians in their social media images, while two hospitals significantly underrepresent Asians in their Facebook and Instagram images.
- These findings are consistent with those of Meyers et al. (2019), and the literature suggesting medical materials overrepresent whites and underrepresent minority populations (Karniel-Miller et al. 2011; Louis and Wilkes 2018; Martin et al. 2016). While previous research has examined medical textbooks and materials used by medical students, the same argument can be made in regards to hospitals' media communications;
 - Bottom line 1:** The underrepresentation of people of color in medical media can contribute to racial inequality in access to and utilization of health care, as well as health outcomes (Martin et al. 2016).

Research Question 2 & 3: How are the individuals portrayed in the social media posts? Do trends regarding portrayal emerge along racial lines?

- Answer: The top three words used in posts associated with White/Asian individuals are "congratulations" (22), "care" (17), and "health" (14). The top three words used in captions associated with Black/Hispanic individuals were found to be "health" (22), "care" (8), and "community" (8).
- There were two prominent themes that emerged from the caption data, consistent with the findings from phase 1 of text analysis. Among the posts displaying largely White/Asian individuals, the theme of *employee recognition* was consistent across the captions from all four hospitals. Codes associated with the theme of *employee recognition* include *congratulations, thank you, and received award/recognized* (see Figure 5). Among posts associated with Black/Hispanic individuals, the theme of *community outreach/involvement* emerged from the caption data. Codes associated with the theme of *community outreach/involvement* include *community meeting/initiative(s), community health center, and community event/festival(s)* (see Figure 4).
- The theme of *community outreach/involvement* is only tangentially related to concrete health concerns. While these captions provide information on local community health centers, they do not discuss specific illnesses, diagnoses, or treatments but rather broadly address "health" overall. Captions associated with White/Asian-coded individuals, however, frequently discuss specific diagnoses such as various forms of cancer and common women's health issues – such as breast cancer. While cancer-related terminology appears 17 times in captions of White/Asian-coded posts, there are no mentions of cancer in any of the captions observed during this three-month time frame in posts coded as Black/Hispanic.
- There is only one caption that mentions a woman's health issue (childbirth) among the Black/Hispanic posts, posts displaying White/Asian individuals, discuss women's sexual health 14 times.
- Bottom Line 2:** This disparity in communication regarding serious health issues contributes to the racial disparities in health by limiting exposure to, education about, and information on these illnesses – some that already disproportionately affect people of color (Kaiser et al. 2013).
- The theme that emerges largely from posts associated with White/Asian individuals, *employee recognition*, has little to do with health but rather lends itself to understanding the broad issue of representation. As Stuart Hall (1997) states, representation – or using language, signs, and images to say something *meaningful* – informs systems of power in society (Hall 1997).
- Bottom Line 3:** White/Asian physicians, nurses, lab technicians are consistently rewarded for their "hard work" and intelligence, while the omission of this same recognition among Black/Hispanic health care professionals suggests that negative racial stereotypes – such as laziness and non-intellectualness – persistent into the professional sphere of health care occupations (Hall 1997; Jackson 2006).

Preliminary Conclusions & Implications

Findings show White individuals are overrepresented, and people of color underrepresented, in Facebook and Instagram posts of four nationally-ranked Boston-Area hospitals. Furthermore, the content of the captions associated with posts containing White/Asian individuals greatly varies from those of Black/Hispanic individuals.

While White/Asian health care professionals are frequently recognized/thanked for their hard work and intelligence both by other health care professionals and the larger Boston community, this same recognition is not seen in posts displaying Black/Hispanic individuals. Rather, posts portraying Black/Hispanic individuals are often associated with captions mentioning community events, initiatives, and community health centers.

The data does reveal some instances where it appears hospitals are taking measures to promote cultural competency.

While these posts provide some valuable information – such as where to access community health care – they do not offer the same specific health/illness stories and advice as captions attached to White/Asian-coded posts. Breast cancer, a disease that disproportionately kills women of color, and other women's health issues are highlighted with much more frequency in posts associated with White/Asian individuals. This disparity contributes to a lack of information, education, and understanding regarding important health issues, thus reinforcing health disparities between white and Black/Hispanic communities (Kaiser 2013).

As more individuals turn to social media for instrumental purposes – collecting information on how to access services, manage illness symptoms, and find others who may suffer similar ailments – it is critically important for hospitals and other health care centers to monitor their media output and actively strive to diversify their images.

Including people of color in media communications – such as Facebook and Instagram posts – will open the door for people of color to see that there are indeed others who "look like them" receiving care, services, and recognition within the area of health care.

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*A full list of references can be furnished upon request