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Breaking down the monolith: Understanding flu vaccine uptake among African Americans[☆]

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A B S T R A C T

Black adults are significantly less likely to be immunized for seasonal influenza when compared to Whites. This persistent disparity contributes to increased influenza-related morbidity and mortality in the African American population. Most scholarship on vaccine disparities has compared Whites and Blacks. Employing Public Health Critical Race Praxis, this study seeks to shift the focus to explore differences *within* the Black population. Utilizing a nationally-representative 2015 survey of US Black adults ($n = 806$), we explore differences by gender, age, income, and education across vaccine-related measures (e.g., perceived risk, knowledge, attitudes) and racial factors (e.g. racial salience, racial fairness, perceived discrimination). We also explore differences by vaccine behavior in the past five years among those who vaccinate every year, most years but not all, once or twice, and never. Greater frequency of flu vaccine uptake was associated with better self-reported vaccine knowledge, more positive vaccine attitudes, more trust in the flu vaccine and the vaccine process, higher perceived disease risk, lower perceived risk of vaccine side effects, stronger subjective and moral norms, lower general vaccine hesitancy, higher confidence in the flu vaccine, and lower perceived barriers. Logistic regression results highlighted other significant differences among the groups, emphasizing areas to target for improved vaccination rates. We find great diversity within the Black community related to influenza immunization decisions, highlighting the need to “break down the monolith” in future research.

1. Introduction

Immunization is a safe, effective, and low-cost preventive measure. However, adult immunization rates for seasonal influenza remain suboptimal, especially among African Americans. There is a persistent racial disparity in influenza immunization rates where Black adults are significantly less likely to be vaccinated than White adults (Centers for Disease Control and Prevention (CDC), 2016). During the 2015-16 influenza season, only 37% percent of Black adults were immunized, compared to 45% percent of White adults (CDC, 2016). A Black-White disparity in immunization rates has been observed across all ages and in high-risk populations including pregnant women, adults with chronic diseases, and health care workers (Lu et al., 2014). To explore this

disparity, researchers have focused on differences *between* African American and White populations. However, to fully understand this issue, it is important for researchers to expand the scope of analysis to include differences *within* the African American population.

The existing literature has demonstrated that no single factor is responsible for the observed racial differences in vaccination; instead, it appears that multiple pathways function simultaneously to contribute to differential vaccine uptake (Quinn et al., 2017). Racially comparative studies have identified several key factors that are significantly different between racial groups, and contribute to lower uptake among African Americans, including vaccine attitudes and beliefs (Harris, Chin, Fiscella, & Humiston, 2006; Lindley, Wortley, Winston, & Bardenheier, 2006; Wooten, Wortley, Singleton, & Euler, 2012),

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knowledge (Bardenheier et al., 2006), access to vaccination (Lee, Mehrotra, Burns, & Harris, 2009; Lin et al., 2006), trust in health care providers and vaccines (Freimuth, Jamison, An, Hancock, & Quinn, 2017; Musa, Schulz, Harris, Silverman, & Thomas, 2009; Quinn, Kumar, Freimuth, Kidwell, & Musa, 2009; Redelings et al., 2012;), risk perception (Freimuth, Jamison, Hancock et al., 2017), and racial discrimination (Bleser, Miranda, & Jean-Jacques, 2016). These studies have confirmed the significance of age, health status, and socioeconomic status (SES) in vaccine uptake (Nagata et al., 2013; Yeung, Lam, & Coker, 2016). Although gender has also been identified as a significant factor, research on gender and flu vaccine is not consistent. A systematic review by Nagata and colleagues suggested that men are more likely to be vaccinated (regardless of race), while a separate systematic review by Yeung concluded that gender was not a consistent predictor of influenza vaccination (Nagata et al., 2013; Yeung et al., 2016). Taken together, these studies provide a solid foundation for inquiry, but because most fail to stratify by race to explore race-specific patterns of uptake, comparative studies alone cannot capture the dynamics that drive vaccination decisions within the Black community.

Only a handful of studies focus exclusively on vaccination within the Black adult population. This research tends to be qualitative with small samples, making it difficult to draw conclusions about the wider Black community (Cameron et al., 2009; Harris et al., 2006; Wray et al., 2007). These studies identified the most salient concerns within the African American community. For instance, Cameron et al. (2009) found that fear of vaccine side effects was common among older African Americans, and that fear and anxiety contributed to lower vaccine uptake. Similarly, in focus groups, older African Americans related concerns about vaccine safety and efficacy that were exacerbated by a sense of mistrust towards the health care system (but not of their own doctor) (Wray et al., 2007). We identified a single quantitative study with an entirely Black sample, which suggested that barriers, cues to action, and susceptibility were significant factors in vaccine decisions, but it focused on pneumococcal, not influenza vaccine (Fry et al., 2016). Other studies have samples that may be largely African American, but are focused on specific settings such as an urban clinic (Nowalk, Zimmerman, Tabbarah, Raymund, & Jewell, 2006), public housing (Schensul, Radda, Coman, & Vazquez, 2009), the “underserved” community (Vlahov, Bond, Jones, & Ompad, 2012), or the “hard-to-reach” population (Coady et al., 2008). In these instances, the primary focus is on the unifying characteristic of the subpopulation, not on race.

Despite the gaps in the literature, we can predict several patterns in influenza vaccine uptake within the Black community. Age is an important predictor, with older adults more likely to be vaccinated than younger adults (Yeung et al., 2016). Several studies have found a significant correlation between SES and vaccine uptake; as education and income increase, the likelihood of receiving a flu shot also increases (Linn, Guralnik, & Patel, 2010; Mulinari, Wemrell, Ronnerstrand, Subramanian, & Merlo, 2017). Patients who regularly see a provider are more likely to be vaccinated, as are adults with co-morbid conditions (Yeung et al., 2016).

There are factors specific to the Black population that may impact vaccine decision-making. Evidence of health care providers’ differential treatment of African Americans is substantial (Nelson, Stith, & Smedley, 2002; Williams & Wyatt, 2015). Extensive scholarship documents Black attitudes toward health care, emphasizing the role of both historical research abuses (especially the infamous Tuskegee Syphilis Study (TSS)) and modern racial discrimination in fostering a deep distrust (Boulware, Cooper, Ratner, LaVeist, & Powe, 2003; Freimuth et al., 2001; Kennedy, Mathis, & Woods, 2006; Thomas & Quinn, 1991). This distrust is associated with lower participation in preventive health care, including vaccination (Armstrong et al., 2013; Musa et al., 2009). These issues have occasionally emerged in the vaccine disparities literature, as scholars recognize major themes of mistrust, the impact of racism, and historical medical injustices, and their contribution to suboptimal

vaccine uptake among African Americans (Harris et al., 2006). Using a comparative approach, it is more difficult to fully explore these unique concerns as they relate to the Black community.

A failing of many racially comparative studies is the treatment of the minority population as a singular whole, erasing diversity within the group (Ramírez, Ford, Stewart, & Teresi, 2005). Ramírez et al. (2005: p. 1646) explained, “the presumption of social or cultural homogeneity exacerbates inaccurate cultural stereotypes and can lead to misleading conclusions”. In some instances, this is the result of limitations, such as small sample size or convenience sampling; in other instances, it is the product of limited research questions (Jones, 2001). In still others, focus on the individual makes it difficult to extrapolate results to the population level, especially when recognizing the great fluidity within and between races (Green, Evans, & Subramanian, 2017). Jones (2001) argued that to enhance the understanding of race and racism in health disparities, it is imperative to “vigorously investigate” all race-related findings, including acknowledging the diversity within racial groups.

Public Health Critical Race (PHCR) Praxis offers a theoretical foundation to shift the focus of traditional disparities research by foregrounding the role of race and racism in health (Ford and Airhihenbuwa, 2010b; Thomas, Quinn, Butler, Fryer, & Garza, 2011). PHCR Praxis incorporates the trans-disciplinary methodologies of Critical Race Theory into both scholarship and applied practice of public health. Instead of obscuring racial differences, the PHCR paradigm makes race and racism a research focus. This requires recognizing that though race holds no biological significance, it remains a powerful social construct, and continues to be made manifest in the daily lived experiences of individuals as they navigate life in a racialized society (Ford & Airhihenbuwa, 2010a). PHCR Praxis has guided the conceptualization and measurement of race in our study.

A central tenet of PHCR is “centering in the margins,” the process of refocusing analysis away from the dominant societal groups and on to the experiences of socially marginalized groups (Ford & Airhihenbuwa, 2010b). Racially comparative approaches, by their very nature, set up a “deficits approach” to understanding disparities, subconsciously normalizing the experiences of the dominant (i.e., White) population (Daniels & Schulz, 2006). We recognize that racism also impacts other minority groups; however, we believe that by focusing our research exclusively on African Americans, we may begin to recontextualize how we approach health disparities research with African Americans. PHCR incorporates elements of intersectionality theory, which emphasizes the overlapping and interlocking aspects of social categories, including race, gender, and class (Ford & Airhihenbuwa, 2010a). In embracing PHCR, we seek to explore differences within the African American population based on gender, income, and education. In this article, we employ the PHCR framework to re-center the focus of disparities discourse by exploring the differences in vaccine attitudes, beliefs, and behavior within a nationally representative sample of the African American population.

We also developed measures for two of the five racial factors (racial consciousness and racial fairness) based on our exploratory qualitative research, and in accordance with principles of PHCR Praxis. Ford and Airhihenbuwa emphasized the importance of racial consciousness in an era of widespread “colorblindness” where the erasure of racial differences is conflated with the absence of racism (2010a). We designed our racial fairness measure to capture some of the contemporary mechanisms of racism, instead of the overt instances of discrimination that defined racism in the past. Today’s racism is often characterized by more subtle forms of “everyday” racism that may be perceived by minority groups as “unfairness” (Ford & Airhihenbuwa, 2010a).

To operationalize these concepts, Fig. 1 describes the integration of demographics, standard and novel factors associated with vaccine uptake, and racial factors, where the arrows embody the hypothesized flow of direct and (partially and/or totally) mediated relations. The standard vaccine-related factors include attitudes, risk perception,

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