

They Can't Speak the Language: On Black and Latinx Disproportionate Coronavirus Death and Few Said, Doctors

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ABSTRACT

The disastrous effects of COVID-19 provided a dire illumination of the disproportional mortality rate among American Blacks and Latinxs and the absence of same said groups as physicians, scientists, or advanced medical media spokespersons. These pathologies are both mutual and exclusive in that the reasons for each reside in a common absence of a successful pursuit of education, primarily those within the STEM disciplines. This research-based commentary is the outcome of an investigation to determine the Who, What, Where, When, and How of the consequences of the virus. It also attempts to address the aforementioned inequities to finally and permanently change the group's intractable failure by the established school system. The prospect of identifying, cultivating, and increasing the country's knowledge base is paramount, and this work provides a framework to capitalize on this occasion. America's future role in a technological world will depend largely on the caliber and number of STEM citizens.

Keywords: COVID-19, Coronavirus, New York City, Blacks, Latinx, disproportionate deaths

Introduction

The Coronavirus has revealed an inequity in the sparse number of Black and Latinx doctors and the disproportionate Coronavirus related deaths of each group. The inequity has leaders, including New York Governor, Andrew Cuomo, calling for investigations. The authors of this work believe the root of the problem is in the missing or miseducation of subgroups of Blacks and Latinxs. The absence of a STEM-based educational foundation often restricts these groups from achieving the higher education necessary to become physicians, scientists, and/or other medical/technology-related professions. Further, this limited educational exposure often relegates a majority of these groups to higher-risk, lower-paying services-related jobs, many with limited or no medical insurance. The pathologies influence the frequency of available health check-ups and general healthcare knowledge, culminating in less preventative understanding and practices. Increasing the number of Black and Latinx physicians would also bridge linguistic, cultural, and educational gaps between the fastest-growing segment of the U.S population and the healthcare arena.

Indeed, to become a physician, one has to be grounded in the language of science, technology, engineering, and math (STEM). Blacks and Latinxs (B&L) have been at the rear end of the achievement and STEM gaps for a long time (Green, 2018). Such disparity does not bode well for a country soon to attain a majority-minority status. Having a majority-minority nation that is STEM(or similarly) illiterate could harbinger a threat to national security.

Coronavirus Revelation

Based on extensive reporting, the Coronavirus deaths have revealed a gap in white-black health outcomes. The disparity in health care is long known and is a function of the scarcity of B&L doctors (Williams, 2018). Of the nation's approximately 906,000 physicians and surgeons, about 6% are Blacks, and fewer are Latinxs (Williams,

2018). In 2010, there were 105 Latinx doctors per 100,000 Latinxs citizens compared 315 non-Hispanic white physicians per 100,000 non-Hispanic Whites citizens (Sánchez, Nevarez, MD, Schink, Hayes-Bautista, 2015). The ratio of Latinx doctors was expected to decrease in 2020 (Sánchez et al., 2015). The race is a factor in the access and practice of health. It matters in patient-doctor interaction; Latinx and Black doctors are more likely to practice in the “hood” (Anderson, 2008).

Latinxs from the 22 or more subgroups are not homogenous (Snyder, de Brey, & Dillow, 2019). Hence, their heterogeneity results in health care disparities wherein, for example, (a) Mexicans have a deficiency in the access and utilization of healthcare. (b) Latinxs with limited English-language capability visit doctors less. (c) Racial and ethnic minority children experience significant deficits in accessing medical care compared with whites (Shi & Stevens, 2005). Therefore, producing culturally and linguistically competent (CLC) doctors to meet the needs of the Latino community is paramount (Malat & Purcell, 2009; Mendoza, 2010; Vargas Bustamante, Fang, Rizzo, & Ortega, 2009).

The impediment to producing CLC is multifaceted. Medical schools tend to prefer academic metrics like GPA and MCAT scores, which B&L students find challenging. Students may also lack the social and cultural capital. According to DiMaria (2019),

Eighty percent of all medical students in the U.S. have parents who've earned at least one college degree. "These are kids who are very sophisticated in their understanding of higher education," Girotti said. In comparison, about half of the Latinos at the College of Medicine are first-generation college students. "That's a very different kind of student," Girotti said. "You have fewer kids, in general, matriculating into medical school, and there's a financial history of problems tagged with this. Do you have the money to get through the process, are you prepared in the primary and secondary schooling to get ready for the journey?"(p. 1)

In the preceding reference, the author spoke to various factors (acceptance test, social, cultural, and linguistic capital, socioeconomic status, and preparation) that would undergird attending medical school. Other researchers found substantial differences in post-secondary educational attainment between some Hispanic/Latino groups (Garcia & Bayer, 2005; Schneider, Martinez, & Ownes, 2006). More recently, Gandara et al. (2015) reported that the approximately 80% majority of US' Latinx subgroups were the higher-poverty level and lower-educated Mexican (64%), Puerto Rican (9%), and Central American (9%). They further reported that the higher educated and wealthier Cubans (4%) and South Americans (6%), composed 10% of the remaining subgroups. de Brey, Musu, McFarland, Wilkinson-Flicker, Dilberti, Zhang, Branstetter, and Wang (2019) reported that Salvadorans and Guatemalans attained the fewest college degrees, while Venezuelans attained the most.

The discrepancy in Latinx subgroups, wealth, and educational attainment would likely have the higher educated Cubans more primed to become doctors compared to the lower educated Mexicans, Dominicans, Salvadorans, or Guatemalans. However, we caution regarding hasty or broad generalization. Accordingly, notwithstanding Mexicans' reported a low level of education, the concept of the *Ghetto Nerd* speaks to the experience of gifted Mexicans (Carrillo, 2013). Their experiences could mirror that of many bright Mexican children whose giftedness goes unrecognized. Mexican (2011) revealed the exploits of gifted 16 years old Mexican teenager Andrew Almazan Anaya, who was slated to graduate as the youngest psychologist. While we outlined the problem, we also proceed with an approach to address it.

In Search of Bright Latinxs

Though this work incorporates B&L, here we will focus our analysis on Latinxs. Latinxs include Blacks, and these authors have previously written articles that focused on non-Latinx Blacks. Education starts prenatally, and with the end in mind of producing Latinx physicians, there is a need to start at the beginning. An apt parallel is the US' and the global end game to restart their Coronavirus-paralyzed economies. However, the leading public health experts in the United States are warning of the precipitous outcome if the first thing—testing—is not done first. Globally, testing is being promoted as an approach to arrest the Coronavirus pandemic. We posit testing to determine if there are bright Latinx children in NY who speak the language necessary to become future physicians. A Chemistry Professor revealed the language was mathematics. He noted.

I've been thinking in response to your posting on how one might go about increasing doctors in the minority communities. What I've noticed throughout my teaching at [X University] is that minority students have the tendency of not having math skills. I teach general chemistry, mainly for prepharmacy students, though the course itself is rigorous chem major course. Many minority students lack the mathematical skill to become successful in my course. If they know little more math, I can guarantee you they can get through without much of a problem. So, maybe our focus should be math, which is the basis for all logical thinking. Maybe after school activity that specializes in mathematics, is in order. (N. Matsunaga, personal communication, April 23, 2020)

We choose to explore New York for its unenviable status as the epicenter of the US's Coronavirus death swath, and for its large and diverse Latinx population. We explored the publicly available school report card on all Latinx third-grade math students who received Level 4 scores for the 2019 school year. Third grade is when NY students experience their first high stake test. Green (2018) indicated that scores in the Level 4 regions are those obtained by gifted and talented Grade 9 students entering NYC specialized high schools. He wrote,

NYS Level 4: Students performing at this level excel in standards for their grade. They demonstrate knowledge, skills, and practices embodied by the New York State P-12 Common Core Learning Standards for Mathematics that are considered more than sufficient for the expectations at this grade. (p. 13)

Result

Figures 1, 2, and 3 aid the reporting of the result. Figure 1 reveals that the overall majority of the state's brightest Latinx third-grade math students (BLTGMS) were found in NYC five boroughs or counties (Bronx, Brooklyn, Queens, New York/Manhattan & Richmond/Staten Island). Those counties, including Westchester and Rockland, are described as downstate. The Bronx, one of the state's poorest counties, produced the highest number of BLTGMS. The state wealthiest Nassau County was fifth in the production of said students. As shown at the bottom of Figure 1, four counties produced no said students. The state capital, Albany, placed 15th with the production of BLTGMS. The result appears to reveal a discrepancy regarding the link between wealth and educational outcomes, which will be covered in the discussion.

County	Total Tested	Level 4	% Level 4
BRONX	11012	1576	14
KINGS	6793	1383	20
QUEENS	8396	1342	16
NEW YORK	4317	1044	24
NASSAU	3077	624	20
WESTCHESTER	3625	544	15
SUFFOLK	4085	414	10
RICHMOND	1397	201	14
ORANGE	1259	139	11
MONROE	1203	110	9
ERIE	886	109	12
ROCKLAND	1034	103	10
DUTCHESS	602	72	12
ONONDAGA	416	44	11
ALBANY	278	37	13
PUTNAM	254	36	14
ONEIDA	225	30	13
SARATOGA	101	25	25
CHAUTAUQUA	221	23	10
ULSTER	283	18	6
RENSSELAER	127	16	13
BROOME	126	14	11
JEFFERSON	137	13	9
SULLIVAN	221	13	6
SCHENECTADY	212	12	6
NIAGARA	123	11	9
CATTARAUGUS	27	9	33
MONTGOMERY	150	8	5
ONTARIO	101	7	7
COLUMBIA	48	5	10
STEUBEN	20	5	25
TOMPKINS	34	5	15
WAYNE	94	5	5
CHEMUNG	31	4	13
FULTON	30	4	13
GREENE	31	3	10
LIVINGSTON	29	3	10
SCHOHARIE	20	3	15
CAYUGA	28	2	7
GENESEE	26	2	8
MADISON	15	2	13
OTSEGO	20	2	10
SAINT LAWRENCE	15	2	13
WARREN	13	2	15
ALLEGANY	7	1	14
DELAWARE	17	1	6
HERKIMER	9	1	11
LEWIS	8	1	13
ORLEANS	27	1	4
OSWEGO	39	1	3
TIoga	7	1	14
WYOMING	13	1	8
CHENANGO	8	0	0
CLINTON	9	0	0
SENECA	15	0	0
WASHINGTON	20	0	0
Total	51321	8034	11

Figure 1. % and number of NY brightest third grade Latinx math students (2019 school year).

Discussion

If the information is not extracted, raw data alone can be misleading and confusing as much as percentages alone can. Such outcome will also occur based on the volume and the diversity of collected data. In an effort to present an applicable example in the context of the battle against Coronavirus, present the following fictitious scenario: A downstate NYC hospital system sent 11,000 doctors to battle Coronavirus, and 1600 came out alive. In contrast, an upstate hospital system sent 27 doctors, and nine came out alive. In which state (up or down) would you want your physician family member to work the next time such a malady occurs? The percentage survival rate is critical. In the first hospital, the survival rate was 14 out of every 100 doctors (an 86% mortality rate); in the second, it was 35 out of every 100 (a 65% mortality rate).

Indeed, mortality rates are an extreme example. However, the critical need for B&L physicians, scientists, etc., is also extreme and, if thought of as a result of inaction or ambivalence, leads to the demise of education, opportunity, and potential. Bearing in mind the aforementioned pretention, for effect, note the Bronx from a

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percentage framework, it attained an 14% passing rate (see Figure 2), being outperformed by select wealthier counties and [a poorer county] (see Figure 3). However, the “Ah Ha” moment associating wealth with high performance eludes us in that the high poverty Cattaraugus County, and not the state’s wealthiest

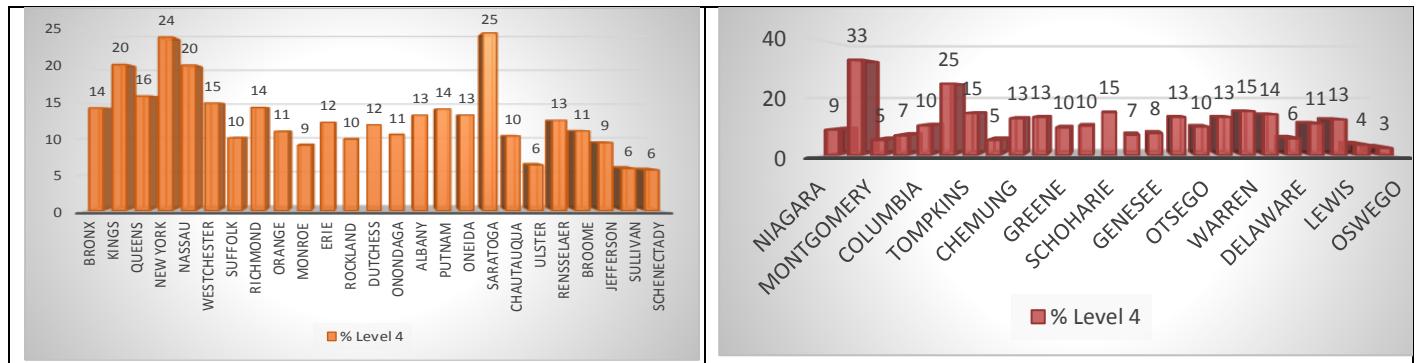


Figure 2. Percentage distribution of New York brightest third grade Latinx math students by for the 2019 school year.
Note. Vertical scales are different for both charts.



Figure 3. The median household income of select NY counties.

Nassau County, attained the highest score. These outcomes parallel the mortality rates of the fictitious doctors. The key questions are; who are the Latinx subgroups in each county that generated such a disparate outcome? Are some counties better at instructing Latinxs than others?

Green and Gordon (2020, in press) provided ways of assessing whether Cattaraugus’ highest statewide percentage of BLTGMS compared to Bronx’s markedly lower percentage production rate resulted from the county’s different Latinx sub-groups. Green et al., revealed that the Bronx had a majority of lower educated Dominicans, while Queens had a majority of higher educated Ecuadorians. To test Green et al. (2020) thesis, their data reveal that Bronx had a population of 120,780 Mexicans and Central Americans (MCA), while Queens had 166,154 (45,374 more) MCA (see Figure 4).

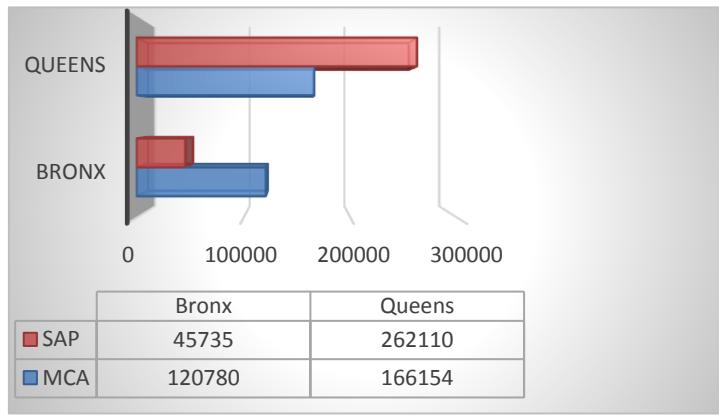


Figure 4. Comparison of select Bronx and Queens’ Latinx subgroups population.

The authors reported that MCA attained the lowest number of high school diplomas while South Americans and Spaniards (SAP) achieved the highest number of said diplomas (U.S. Census 2010). Queens having 45,374 more of the lower educated MCA would suggest it should have the least number of Latinx G&T students compared to the Bronx.

However, in contrast, Queens had 262,110 higher educated South American and Spaniards (SAP) compared to Bronx's 45,735 total, a difference of 216,377. Therefore, Queens' higher distribution of highly educated SAP could result in students who outperformed the borough's higher number of lesser-educated MCA (compared to the Bronx). The outcome would offset any negative impact of having more of said lower-performing students. Such an analytical approach could inform if the reported poverty and low educational attainment of specific Latinx subgroups impacted the county distribution and the state's overall 11% production of BLTGMS. Comparatively speaking, their passing rate was markedly lower than that of the 17% for Blacks, 27% for Multiracials, 28% for Whites, and 46% for Asians. The overall discrepancy in the Latin scores suggested the need for a more in-depth probe to inform mindful school intervention. The Bronx data should be of high concern to leaders of that majority Latinx community.

They cannot Speak the Language

The alternative explanation to the comparatively low distribution of BLTGMS is "they cannot speak the language." In an earlier time, *they* in the quote were pervasively and derogatively used, even by educators, to either criticize Latinxs or to serve as attribution for their failure in school. Armas' (2002) "Language Barriers Cause Problems" reveals some of the associated pathologies non-English speaking Latinxs faced. Regarding this current work, the quote may highlight school pathologies (SP) or deficiencies in children that begin quite early. In the case of SP, the 13.9 million Latinx students were being taught by predominately (80%) White middle class (NCES, 2018) and monolingual teachers per Stein-Smith (2019). Therefore, most teachers do not speak the language of the second largest student group in the nation's schools. Student's inability to speak the language-math-for the pursuit of a STEM career can result from a lack of early preparedness for school (Green, 2018). Schhneider et al. (2006) highlight the issue in a manner that a mindful educator can make the needed corrections. They wrote,

For Hispanics in the United States, the educational experience is one of the accumulated disadvantages. Many Hispanic students begin formalized schooling without the economic and social resources that many other students receive, and schools are often ill-equipped to compensate for these initial disparities. For Hispanics, initial disadvantages often stem from parents' immigrant and socioeconomic status and their lack of knowledge about the U.S. education system. As Hispanic students proceed through the schooling system, inadequate school resources and their weak relationships with their teachers continue to undermine their academic success. (p. 1)

Various studies reported the utility of early positive math exposure as the strongest predictor of student school success (Global Family, 2017; Romano, Babchishin, Pagani, & Kohen, (2010); Nguyen, Watts, Duncan, Clements, Sarama, (Wolfe, & Spitler, 2015). Other works (e.g., D'Arcangelo, 2001) revealed humans are hardwired to perform mathematical calculations, and the "violation of expectation" experiments found six months old babies performing same. [The violation occurs when the babies expect to see, for example, 2 dolls and see a different number, resulting in excessive staring (D'Arcangelo)]. Even so, parents or grandparents who only speak Spanish at home may not be teaching young children math or other lessons. A possible example of early learning by disruption to a normal tendency might simply be a parent's actions of pointing out pictures in a baby book rather than just allowing the infant to continue the instinctual action of trying to eat it.

The baby-book-eating can result from parents' inability to speak the dominant language needed to prepare the infant to succeed in American schools. It may require teachers to help decrease the dilemma and difficulty of addressing parental math phobia. The paradox of teachers not speaking the language now becomes glaring and problematic. Later on, the problem can be overcome through the collaboration of not-for-profits and schools to conduct afterschool programs with culturally and linguistically competent providers. When done, Davis' (2001) *Mathematics at Home: "Practical Activities for Parents and Children"* can be actualized for Spanish speaking parents and their bilingual children. He wrote

Teachers can photocopy the appropriate sheet and send it home for parents and children to work on together. Each activity has a set of explanatory notes for teachers and a photocopiable worksheet. Instructions

to parents are presented, with resources listed. The activities are practical and enjoyable, covering everyday mathematical tasks, such as calculating shopping bills, estimating quantities, and looking at timetables. Children are also encouraged to apply their mathematical skills and understanding of these practical tasks, for example by converting cooking time information into a graph. (p. 1)

The culturally competent providers would ensure copies are also in Spanish, and sports, dancing, or other culturally specific activities related to children's lived experiences are included in the practical tasks.

Conclusion

We offer the observation of disproportional mortality rates among Blacks and Latinxs from Covid-19 and that of a disparity in physicians, scientists, and advanced medical professionals of that same demographics. Reasons for these observations are furnished as are sources reflecting and affecting those observations and suggested remedies. Information is provided to take corrective actions. We hope the information will reach stakeholders in the educational, governmental, and medical communities. An updated assessment and innovative approach have become mandatory to generate meaningful change. Our evaluation and suggested corrections seek a personal and institutional approach. We advocate participants seek a role in the necessary changes to benefit themselves and their children. As informed persons, they must implement personal actions on behalf of themselves and their children. The educational system, and those that fund and structure it, must recognize the inhibiting factors to the successful cultivation of STEM students, that can become STEM professionals, and address those as cause and effect components. The approach is encompassing because the need is the same, and compartmentalized enactments, to date, have failed to make a difference.

Recommendation

The preparation of Latinxs for personal advancement must be concurrent with the preservation and advancement of the nation's Democratic Ideals and national security. As this population becomes the majority in the forthcoming majority-minority era, our knowledge bank must be cultivated, expanded, and deepened from the ranks of our fastest-growing citizens.

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