Data Disaggregation Reveals Disproportionate Levels of COVID-19 Risk Among Filipinxs in the USA

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Abstract

Background Recognizing the disproportionate rates of COVID-19 infection and death experienced by Filipinxs in the USA, this study examines whether data disaggregation reveals meaningful differences between Filipinxs, non-Asians, and other groups often aggregated into the problematic "Asian and Pacific Islander" category across a series of social and health variables associated with COVID-19 risk.

Methods Using data from the California Health Interview Survey (CHIS, 2017–18; $N = 42,330$) and the National Survey on Drug Use and Health (NSDUH, 2018–19; $N = 135,516$), we ran chi-squared tests yielding Wald F-values to compare Filipinxs with other "Asians and Pacific islanders" and non-Asians across 10 social and 4 health-related variables. Health conditions included asthma, diabetes, heart conditions, and high blood pressure.

Results Filipinxs were much more likely to report diabetes (CHIS: 12.6%; NSDUH: 14.4%) than other Asian/PI respondents (8.4%; 8.0%) or non-Asians (10.8%; 10.1%), as well as asthma and high blood pressure. Filipinxs were also disproportionately employed in the healthcare and service occupations (CHIS: 36.7%) in comparison to other Asian/PI respondents (19.0%) and non-Asians (22.4%).

Discussion Across several variables, Filipinxs have less in common with other Asians and Pacific Islanders than with non-Asians. Combining these groups can obscure patterns that affect health and the risks of contracting or dying from COVID-19.

Keywords Filipinxs · COVID-19 · Data disaggregation · Asians and Pacific Islanders · Healthcare occupations

Introduction

News and public health reports have suggested that a disproportionate number of those infected with COVID-19 in the USA have been Filipinx, and that Filipinxs contracting COVID-19 may have a higher mortality rate [1, 2]. Though most public health research and state reports do not disaggregate Filipinxs from other Asians and Pacific Islanders, data from California reveal that although Filipinxs comprise 16% of the state's population, they made up about 22% of the state's COVID-19 deaths. Furthermore, Filipinxs, comprising about 20% of the state's Asian adults between 18 and 64, comprised about 42% of COVID-19 deaths among Asians in that age group. By contrast, Chinese Californians, about 27% of non-elderly adult Asians in the state, accounted for about

9% of deaths [3]. The COVID-19 dashboard in Hawaii, one of the few other states that disaggregates its data, indicates that, as of August 2021, Filipinxs accounted for 19.7% of cases and 22.7% of deaths, despite comprising 16.0% of the state's population [3]. About 26.4% of RNs in the US who have died from COVID-19 have been Filipinx, although Filipinxs make up just 4% of that workforce [4]. These patterns add urgency to research describing the distinct risk factors facing Filipinxs in the USA.

Public health researchers have increasingly called for studies that disaggregate respondents by ethnicity [3, 6, 7]. The common practice of combining Pacific Islanders and Asians of all ethnicities into a single group for analysis is particularly problematic because of the differences in health risks, social variables, and historical conditions that have shaped their experiences in the USA and their health outcomes. Filipinxs disproportionately experience obesity, hypertension, diabetes, and cardiovascular disease [8], all of which may increase the risks associated with COVID-19 [9, 10]. The Philippines has been among the top five countries

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of origin for immigrants to the USA for the past four decades [11]. Filipinxs make up the majority of immigrant healthcare workers in the USA and have a long and distinct history in California in particular [12].

Responding to calls for data disaggregation in studies of Asians and Pacific Islanders [3, 7], this brief report takes advantage of two large, high-quality, representative surveys to describe some of the distinct social and health conditions that may be affecting Filipinxs-Americans during the COVID-19 pandemic. Building upon research by Adia and colleagues [7] using the 2011–2017 California Health Interview Survey (CHIS), we use the 2017–2018 waves of that survey, with a few added social variables, as well as the National Survey of Drug Use and Health (NSDUH) 2018–2019 to describe a limited set of health and social variables that may help to explain why COVID-19 has impacted Filipinxs differently than other Asians and Pacific Islanders as well as non-Asians in the USA. The primary contributions of this study are the national comparisons using the NSDUH, which have not appeared before in print. However, the CHIS data demonstrates how distinct, state-level data may not be identical, allows us to build off earlier research [7], best reflects one of the largest populations of Filipinxs in the USA, and also adds a critically important variable not available on the NSDUH, whether the respondent worked in a healthcare or service provision setting.

Methods

The NSDUH is a large survey ($N = 67,791$ in 2018 and $N = 67,625$ in 2019) conducted by the Substance Abuse and Mental Health Services Administration (SAMHSA). NSDUH uses a stratified, multi-stage probability sampling design with deliberate oversampling of younger people (down to age 12) that allows sound comparisons between different ethnic groups, even when they comprise a relatively small proportion of the population [12]. The size and quality of this data set make it particularly well suited to disaggregated analyses of minoritized populations in the USA. Data disaggregated by race are available only in a restricted-use data set. However, SAMHSA provides a relatively robust Restricted-Use Data Analysis System (RDAS) that combines two survey years (in this case, 2018 and 2019) and uses other protections to avoid compromising anonymity. These protections suppress unweighted case counts and prevent running analyses on selected subsamples. Hence, our analyses of the NSDUH reflect the entire sample down to age 12. We conducted Wald Chi-square tests to evaluate whether Filipinxs were distinct from other Asian/Pacific Islander groups and non-Asian/PI groups across a set of social and health variables relevant to COVID-19 risk. We recoded the NEWRACE1 variable to examine separately Filipinxs, Non-Asians, and other Asians

and Pacific Islanders. A weighting variable (DASWT_1) was included to ensure that parameter estimates were representative of the US population age 12 and older.

The California Health Interview Survey, conducted by the UCLA Center for Health Policy Research in cooperation with the California Health Authority, uses address-based sampling to conduct web and telephone-based surveys designed to yield parameter estimates representative of many smaller sub-regions and sub-populations, as well as the state as a whole. Though reports on Filipinx health based on this data set have appeared in print, the data set has some qualities that make it an important basis for comparison. The survey is conducted in multiple languages, including Tagalog. It includes an important variable about the workplace and allows for a snapshot of the largest Filipinx population in the USA. The center agreed to share special use research files to allow us access to disaggregated ethnicity and health data not available in the freely downloadable public use files. Access to raw data from the combined 2017–2018 waves ($N = 42,330$) allowed us to code variables to be similar to the NSDUH data and create comparable statistics. In this case, the estimates are representative of adults (18 and over) in California. All analyses of CHIS were conducted using SPSS version 24 (SPSS Statistics for Windows, Armonk, NY: IBM Corp.).

For both data sets, we used the two most recent waves preceding the start of the COVID-19 pandemic to capture the most current social and health information available. These large samples are sufficient for making sound estimates of population parameters. As these variables can change over time, adding earlier years would have made our findings less representative of the most current social conditions facing Filipinxs. Non-Asians represented 93.9% of NSDUH and 84.1% of CHIS weighted counts. Filipinxs comprised 1.1% of the weighted counts on the NSDUH and 3.7% on the CHIS. The "other Asians and Pacific Islanders" (3.7% of NSDUH and 12.2% of CHIS) category included Native Hawaiians and other Pacific Islanders (0.2% NSDUH; 0.4% CHIS), Chinese (1.2%; 4.4%), Japanese (0.2%; 0.7%), Asian Indian/South Asian (1.9%; 2.2%), Korean (0.4%; 1.4%), Vietnamese (0.4%; 1.9%), and other Asians or Asians belonging to two more groups (0.6%; 1.6%).

We ran chi-square tests yielding Wald F-values to compare Filipinxs with other Asians and Pacific islanders and non-Asians across a series of dichotomous variables reflecting social contexts and health risks that could affect COVID-19 transmission or vulnerability. While aggregating Asians and Pacific Islanders is a common practice [13], the various groups within these categories have their own unique histories and cultures that vary substantially. The large sample sizes utilized by this study allow us to disaggregate Filipinxs from these groups to see whether aggregation may disguise meaningful health and social differences. Additionally, comparing Filipinxs to other Asians and Pacific Islanders and

to non-Asians allows us to evaluate whether Filipinxs have more in common with the category into which they are often aggregated than other ethnic groups more generally.

The social variables we analyzed included whether the respondent reported being born outside the USA, working full time, being married, living in poverty, receiving food stamps, possessing a bachelor's or higher degree, having a household income over 70 (CHIS) or 75 (NSDUH) thousand dollars, being a smoker, having health insurance, and working in a service or health care setting (CHIS only). Health-specific risk variables included reported asthma, diabetes, a heart condition, and high blood pressure.

Results

Results depicted in Table 1 show Filipinx-Americans have health risks distinct from other Asians and Pacific Islanders, as well as non-Asians. To avoid redundancy with the table, we report in this section only the clearest and most notable findings. Filipinxs from both samples not only reported diabetes (12.6% CHIS and 14.4% NSDUH) and high blood pressure (32.0 and 22.1%) at higher rates than other Asians and Pacific Islanders (8.4 and 8.0% for diabetes; 21.9 and 8.5% for high blood pressure); they reported these conditions more than non-Asians as well (10.8 and 10.1% for diabetes; 30.5 and 18.0% for high blood pressure). Findings

were similar for reported asthma, with Filipinxs reporting asthma at higher rates (19.1 and 9.9%) than other Asians and Pacific Islanders (10.9 and 6.3%) on both surveys but higher than non-Asians (7.2 and 10.1%) only on the CHIS survey. Filipinxs were slightly less likely to report having a heart condition (4.1%) than other Asians and Pacific Islanders (4.5%) on the CHIS but more likely to report one on the NSDUH (7.3 versus 3.0%). Heart disease percentages were lower for Filipinxs (4.1 and 7.3, repeated for clarity) than for non-Asians (7.2% CHIS and 10.1% NSDUH) across both surveys.

Across the social variables, Filipinxs and other Asians and Pacific Islanders differed significantly from non-Asians across many variables, being more likely to report having been born outside the USA, having a bachelor's or higher degree, earning over $70,000/$75,000, and having health insurance coverage. For example, about half of Filipinxs (55.4% CHIS; 49.4% NSDUH) report having a bachelor's or higher degree, with other Asians and Pacific Islanders reporting even higher proportions (57.2%; 67.7%) and non-Asians reporting far lower proportions (36.0%; 30.5%). Both groups were less likely than non-Asians to report living in poverty, using food stamps, and smoking. The proportion of respondents working full time was similar for all three groups, though the slightly lower proportion of non-Asians working full-time was statistically significant. Marital status was the variable that showed the widest variation when

Table 1 Comparing Filipinxs to other Asians/Pacific Islanders and to non-Asians across health and social variables (weighted percentages)

Item	Filipinxs		Other Asian/PI		Non-Asians		F-Value Wald chi-square test[b]	
	CHIS	NSDUH	CHIS	NSDUH	CHIS	NSDUH	CHIS	NSDUH
	%	%	%	%	%	%		
Ever told had asthma	19.1	9.9	10.9	6.3	16.4	9.9	34.52***	21.89***
Ever told had diabetes	12.6	14.4	8.4	8.0	10.8	10.1	7.76***	6.46**
Ever told heart condition	4.1	7.3	4.5	3.0	7.2	10.1	42.28***	99.38***
Ever told high blood pressure	32.0	22.1	21.9	8.5	30.5	18.0	43.41***	69.71***
Born outside the USA	53.7	79.0	67.2	72.8	25.7	12.4	1850.98***	348.19***
BA or higher	55.6	49.4	57.2	62.7	36.0	30.5	126.53***	151.14***
Working full-time	55.4	52.3	54.9	52.4	54.1	49.6	25.63***	3.37*
Income over 70 K/75 K	58.9	54.5	54.4	54.6	46.3	39.6	16.98***	57.63***
Food stamps last year	12.7	5.3	10.0	6.2	17.7	13.6	19.49***	76.28***
Has health ins. last year	93.7	93.0	94.2	93.8	90.6	90.3	2.11	19.96***
Married	40.4	61.50	56.6	58.2	49.4	48.1	37.10***	35.63***
Living in poverty	9.5	6.8	14.0	13.0	16.0	14.3	8.92***	12.71***
Tobacco use	7.8	9.6	7.9	10.0	11.1	22.0	18.84***	146.70***
Work healthcare or service	36.7	–	19.0	–	22.4	–	20.33***	–

[a] All chi-squared tests had 2 degrees of freedom

[b] All Wald chi-squared statistics are based on unweighted data and had 2 degrees of freedom

$^*p < 0.05$; $^{**}p < 0.01$; $^{***}p < 0.001$

comparing the two surveys. Among CHIS respondents, just 40.4% of Filipinx respondents reported being married, compared to 56.6% for other Asians and Pacific Islanders and 49.4% for non-Asians. In contrast, among NSDUH respondents, Filipinx respondents reported the highest rates of marriage (61.5%), compared to 58.2% for other Asians and Pacific Islanders and 48.1% for non-Asians. While this suggests Filipinxs in California inhabit social contexts distinct from the Filipinx population in the USA more generally, additional speculation about this issue is beyond the scope of this paper. Finally, the CHIS revealed that Filipinxs were much more likely to report working in healthcare and service occupations (36.7%) than non-Asians (22.4%) and other Asians and Pacific Islanders (19.0%).

Discussion

Filipino-Americans experience some COVID-19-relevant health risks at higher rates than other Asians and Pacific Islanders. Notably, Filipinxs report experiencing asthma, diabetes, and high blood pressure at greater rates than non-Asians, who in turn have higher rates than other Asians and Pacific Islanders. In other words, across these variables (and the working in healthcare or service variable), Filipinxs have less in common with the problematic but frequently aggregated "Asian and Pacific Islander" category than they do with other US racial and ethnic groups more generally. Researchers should recognize that, in some cases, including Filipinxs in the larger disaggregated category may obscure larger differences between other Asians and Pacific Islanders and non-Asians. Additionally, some scholars have argued that failure to disaggregate data may have contributed to putting Filipinx health care workers and the Filipinx community at increased risk during the COVID-19 pandemic [3]. In contrast to the health variables, many of the social differences between other Asians and Pacific Islanders and non-Asians are also present when comparing Filipinxs and non-Asians. Filipinxs and other Asians and Pacific Islanders have higher incomes, are less likely to be in poverty or receive food stamps, are more likely to have college degrees and health insurance, and are less likely to use tobacco than non-Asians, all of which are associated with reduced COVID-19 risk [14, 15]. They are more likely than non-Asians to report being born outside the USA, a factor generally associated with greater COVID-19 risk. Among the social variables, the most notable COVID-19 risk factor for Filipinx-Americans was that they were substantially more likely than non-Asians and other Asians and Pacific Islanders to work in the healthcare and services industries.

Our findings confirm previous research using disaggregated data to examine Filipinx health in comparison to other groups. In particular, we see that higher rates of asthma,

high blood pressure, and diabetes found in California [7] are mirrored in the nationally representative NSDUH sample. Additionally, previous claims of the high proportion of Filipinx-Americans working in healthcare and social service settings [16] are borne out in the representative sample of Californians, along with the health disparities that put them at greater risk.

We note that although many of the patterns in the CHIS and NSDUH are similar, readers should interpret the differences between the two datasets with caution. The two data sets use different sampling methodologies and are representative of different populations. The CHIS included non-English versions of the questionnaire, and the NSDUH included respondents as young as 12. While some of the differences may reflect real differences between Filipinxs in California from the rest of the USA, others may be methodological artifacts.

This article examines social or health disparities that may help to explain the disproportionate rates of COVID-19 infection and death among Filipinx-Americans. In particular, higher rates of diabetes and high blood pressure likely put Filipinxs at higher risk of infection and death from COVID-19 than other groups. Asthma rates were also higher among Filipinxs, however, recent research has called into question whether this health condition is associated with COVID-19 risks [17]. The disproportionate employment of Filipinxs in healthcare has arguably increased their exposure to COVID-19 during the current pandemic, particularly in light of other research showing how the history of US imperialism has created inequalities in the work experiences of Filipinx nurses in the USA, placing them in higher-risk settings [16].

The chief limitation of the present study is that respondents were not asked specifically about their experiences with COVID-19, meaning that the patterns revealed by our analyses may not be causally related to COVID-19 and that we cannot evaluate which variables contribute most significantly to COVID-19 infection. This problem will surely be corrected in future research, as questions about COVID-19 exposure and experiences make their way onto future waves of these and other surveys. Additionally, though this study provides a snapshot of the patterns associated with possible COVID-19 risk factors across these groups, responses are self-reported, which is imprecise and could result in inaccuracies, especially if members of minoritized communities differ in their interpretation of the questions or their willingness to reveal personal information to researchers.

Finally, we wish to acknowledge that aggregating Asians and Pacific Islanders is a problematic practice, as these groups vary dramatically in their histories, cultures, and contemporary social contexts, a fact that is obscured by aggregation. We hope, by demonstrating that Filipinxs are no more similar to these commonly aggregated groups across many variables than are non-Asians, to reinforce the case

for continued research that disaggregates these groups when possible. We see the same argument as applying to other ethnic and racial groups as well. Of course, disaggregation poses its own challenges. Limited sample sizes sometimes make it difficult to examine groups separately with precision. When it is possible to disaggregate data, examining many groups simultaneously can make data analysis, presentation, and reporting cumbersome, and can risk failing to honor the distinct histories and social conditions facing each group. As new conventions for how best to disaggregate analyses on race and ethnicity emerge, we think there will continue to be space for analyses of specific groups in the context of the distinct challenges they face. Though describing the unique historical and policy factors that have shaped the experiences of Filipinx-Americans is beyond the scope of this brief report, our findings shed light on how health disparities and social contexts may have shaped the Filipinx-American community's experience of the COVID-19 pandemic, leaving Filipinxs at greater risk of becoming infected by and dying from the virus than many of the other racial and ethnic groups with which they are often combined, as well people in other groups.

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