Age and Sex Distributions of 31 Common Racial Groups in Hawai‘i: A Shiny Web Application

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Abstract

Hawai‘i is the most ethnically diverse state with the highest proportion of multiracial individuals in the United States. The Stepwise Proportional Weighting Algorithm (SPWA) was developed to bridge the categorization of multiracial Census data into single-race population estimates for common races in Hawai‘i. However, these estimates have not been publicly available. A Shiny web application, the Hawai‘i Single-Race Categorization Tool, was developed as a user friendly research tool to obtain the age and sex distributions of single-race estimates for common racial groups in Hawai‘i. The Categorization Tool implements the SPWA and presents the results in tabular and graphic formats, stratified by sex and age. It also allows the categorization of partial Native Hawaiians as Native Hawaiians in the population estimation. Using this tool, the current paper reports population estimates and distributions for 31 common racial groups using Hawai‘i Census 2010 data. Among the major Census races, Asian had the largest population (631 881; 46.5%) in Hawai‘i, followed by White (431 635; 31.7%) and Native Hawaiian and Other Pacific Islander (227 588; 16.7%). Among Census detailed races within Asian, Filipino had the largest population estimate (244 730; 18.0%), followed by Japanese (227 165; 16.7%) and Chinese (103 600; 7.6%). Native Hawaiian accounted for 12.3% of the Hawai‘i population (166 944). After recategorizing part-Native Hawaiians as Native Hawaiians, Native Hawaiian increased by 150.0%, with the greatest increase among the young. This publicly available tool would be valuable for race-related resource allocation, policy development, and health disparities research in Hawai‘i.

Keywords

Hawai‘i, censuses, population estimation, racial group, Shiny App

Abbreviations

AIAN = American Indian or Alaskan Native
NH = Native Hawaiian
NHOPI = Native Hawaiian or Other Pacific Islander
Shiny App = Shiny web application
SPWA = Stepwise Proportional Weighting Algorithm
SOR = Some Other Race

Introduction

In 1997, the Office of Management and Budget made revisions to the Census, allowing respondents to choose multiple racial categories.[1] This change in racial reporting has made the data from the 2000 and 2010 censuses incomparable to prior ones. Single-race population estimates are essential for race-related resource allocation and policy making, health statistics reporting, and disparities research.

The Stepwise Proportional Weighting Algorithm (SPWA) was developed as a multi-race to single-race bridging method to generate single-race population estimates using multi-race Census data.[2] The algorithm allocates proportions of the multiracial population to their respective single races to create populations of individuals who are only 1 race. The resulting estimates would allow the potential comparison of single-race data collected before 2000 to the multi-race data collected afterward.

Although single-race data can be retrieved from the Centers of Disease Control and Prevention's WONDER database, the estimates are only provided for the 6 Census major races.[3] Due to Hawai‘i's ethnically diverse population, it faces the unique challenge of obtaining single-race estimates for Census detailed races such as Native Hawaiian (NH), Filipino, or Japanese. Additionally, multi-race NHs are often classified as NH in vital and hospital records in Hawai‘i, which further complicates the population estimation for Hawai‘i. This paper uses the term *partial NH adjustment* to describe the reclassification of multi-race NH as NH.

To the authors' knowledge, there are no publicly available data on single-race population estimates for most of Hawai‘i‘s common racial groups. The purpose of this study is to estimate the age and sex distributions for 31 common racial groups in Hawai‘i. The *Hawai‘i Single-Race Population Categorization Tool,* a *Shiny* web application Version 1.7.4 (Posit.PBC, Boston, MA), was developed to implement the SPWA. This paper describes the capabilities of the *Categorization Tool,* including its user input interface and table and graph outputs for selected common racial groups with specific age and sex stratifications. The population estimation results of the 31 most common racial groups in Hawai‘i is presented, and the age and sex distributions of some of the major Hawai‘i racial groups are also discussed.

Methods

Data

This study used the 2010 State of Hawai‘i Census data, which included racial counts stratified by age and sex.[4] The structure of Census major and detailed race categories are listed in the first column of **Table 1**. This list of 31 common racial groups in Hawai‘i included the 6 major Census racial categories (Level-1): Asian, White, Native Hawaiian and Other Pacific Islander (NHOPI), Black, American Indian and Alaska Native (AIAN),

Table 1. Single-Race Population Estimates by Sex and Age Groups for Common Racial Groups in the State of Hawai'i: Estimated from the 2010 Census Data using the Stepwise Proportional Weighting Algorithm

	Total	%[a]	Male	Female	Female %	0-18 years	%[b]	19-64 years	%[b]	≥65 years	%[b]
Level-1 racial groups											
Asian	631 881	46.5	298 836	333 045	52.7	131 105	20.7	381 053	60.3	119 724	18.9
White	431 635	31.7	229 010	202 624	46.9	88 708	20.6	287 636	66.6	55 290	12.8
NHOPI[c]	227 588	16.7	115 022	112 566	49.5	79 330	34.9	131 532	57.8	16 726	7.3
Black[d]	28 595	2.1	17 053	11 543	40.4	8996	31.5	18 562	64.9	1037	3.6
Some Other Races	24 195	1.8	12 974	11 221	46.4	6933	28.7	15 753	65.1	1508	6.2
AIAN[e]	16 407	1.2	8348	8059	49.1	5656	34.5	9899	60.3	853	5.2
Level-2 racial groups within Asian											
Filipino	244 730	18.0	118 795	125 935	51.5	62 341	25.5	150 443	61.5	31 946	13.1
Japanese	227 165	16.7	106 255	120 910	53.2	32 869	14.5	131 363	57.8	62 934	27.7
Chinese	103 600	7.6	49 474	54 126	52.2	24 285	23.4	61 968	59.8	17 347	16.7
Korean	32 276	2.4	13 241	19 035	59.0	6160	19.1	20 892	64.7	5223	16.2
Vietnamese	10 910	<1.0	5052	5858	53.7	2659	24.4	7306	67.0	945	8.7
Okinawan	3465	<1.0	1657	1808	52.2	687	19.8	2204	63.6	575	16.6
Asian Indian	3057	<1.0	1585	1471	48.1	647	21.2	2127	69.6	283	9.3
Thai	2540	<1.0	797	1743	68.6	489	19.3	1899	74.8	152	6.0
Laotian	2085	<1.0	1002	1083	51.9	528	25.3	1401	67.2	156	7.5
Indonesian	596	<1.0	247	350	58.7	123	20.6	401	67.3	<100	12.2
Cambodian	541	<1.0	249	292	54.0	138	25.5	383	70.8	<100	3.7
Burmese	227	<1.0	113	113	49.9	<100	18.9	163	71.8	<100	9.3
Pakistani	216	<1.0	132	<100	38.9	<100	26.9	146	67.6	<100	5.6
Sri Lankan	201	<1.0	109	<100	45.8	<100	17.4	140	69.7	<100	12.9
Mongolian	140	<1.0	<100	<100	55.2	<100	14.3	105	80.0	<100	5.7
Nepalese	132	<1.0	<100	<100	49.4	<100	17.4	112	79.5	<100	3.0
Level-2 racial groups within NHOPI											
Polynesian	200 183	14.7	101 569	98 614	49.3	68 084	34.0	116 105	58.0	15 993	8.0
Micronesian[f]	26 884	2.0	13 217	13 667	50.8	11 086	41.2	15 085	56.1	713	2.7
Melanesian[g]	521	<1.0	236	285	54.7	159	30.5	342	65.6	<100	3.8
Level-3 racial groups within Chinese											
Chinese[h]	102 613	7.5	49 059	53 554	52.2	24 131	23.5	61 280	59.7	17 201	16.8
Taiwanese	987	<1.0	415	572	58.0	153	15.6	688	69.7	146	14.8
Level-3 racial groups within Polynesian											
Native Hawaiian	166 944	12.3	84 399	82 545	49.4	55 179	33.1	97 401	58.3	14 363	8.6
Samoan	25 965	1.9	13 395	12 570	48.4	10 006	38.5	14 716	56.7	1243	4.8
Tongan	6120	<1.0	3244	2876	47.0	2439	39.9	3347	54.7	334	5.5
Tahitian	1154	<1.0	532	623	54.0	460	39.9	641	55.5	<100	4.7

[a] Percentage of the total Hawai'i Population (1 360 301). [b] Percentage of the total for the racial group. [c] Native Hawaiian and Other Pacific Islander. [d] Black and African American. [e] American Indian and Alaska Native. [f] Micronesian includes: Guamanian or Chamorro, Mariana Islander, Marshallese, Palauan, Carolinian, Kosraean, Pohnpeian, Saipanese, I-Kiribati, Chuukese, Yapese. [g] Melanesian includes: Fujian, Melanesian, Papua New Guinean, Solomon Islander, Ni-Vanuatu. [h] Chinese except Taiwanese.

and Some Other Race (SOR); 19 detailed Census race categories (Level-2): Filipino, Japanese, Chinese, Korean, Vietnamese, Okinawan, Asian Indian, Thai, Laotian, Indonesian, Cambodian, Burmese, Pakistani, Sri Lankan, Mongolian, Nepalese, Polynesian, Micronesian, and Melanesian; and 6 additional Census detailed races categories (Level-3): Chinese except Taiwanese, Taiwanese, Native Hawaiian, Samoan, Tongan, and Tahitian.

Shiny Web Application (Shiny App): The Categorization Tool

The *Hawai'i Single-Race Categorization Tool* includes a conceptual infographics video, a race and demographics (age and sex) selection panel, graphical outputs, and downloadable summary data tables. Single-race population estimates and sensitivity intervals for all races were calculated for each of the age/sex groups (for example, males aged 0, males aged 1, …, females aged 99, females aged ≥100) based on the SPWA[2] and stored in the Shiny App. Single-race population estimates of all the age/sex groups were summed to obtain a total single-race population estimate. This process was performed both with and without grouping partial NHs as single-race NHs. The decimal estimates were rounded to the closest integers for reporting purposes. All calculations were conducted in R version 4.2.0.[5] The *Shiny* package[6] was used to create the web application. The *Tidyverse* packages[7] were incorporated to manipulate, shape, and visualize the data. For efficient data storage and fast initialization of the tool, the *Arrow* package[8] was used to compress and query the data. The *Hawai'i Single-Race Population Categorization Tool* is hosted on *shinyapps.io* (https://jabsom-dqhs.shinyapps.io/hawaii_single_race_categorization_tool/).

Users can specify the target demographics by adjusting the age range slider and sex checkboxes on the tool's parameter input panel (**Figure 1**). The user's selections determine what common racial groups to report and compare by any specific age and sex subgroups. The server of the Shiny App then aggregates the single-race estimates based on users' specifications. Help-dialogues explaining what each setting means are available throughout the page. Users can activate these help-dialogues by clicking on the encircled question mark buttons.

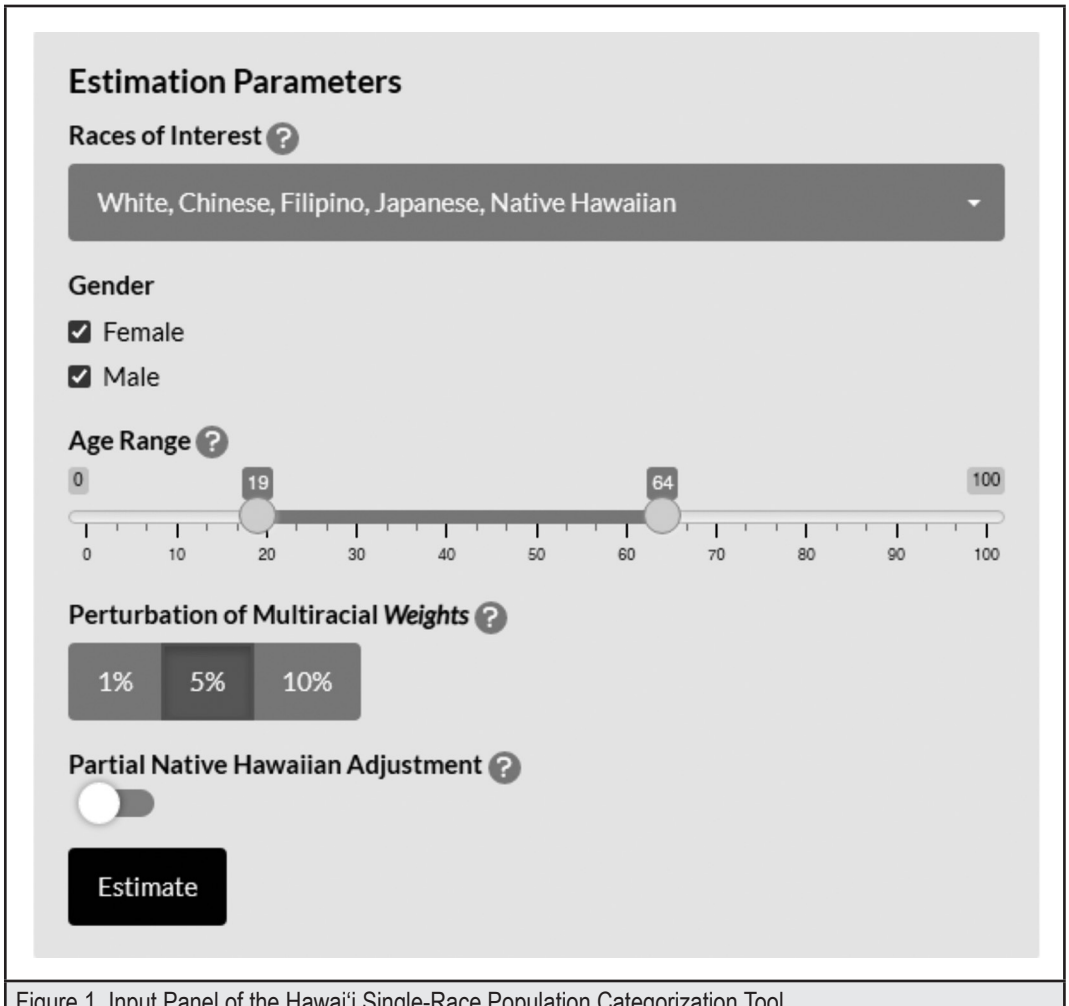


Figure 1. Input Panel of the Hawai'i Single-Race Population Categorization Tool

The graphic and table outputs of the *Categorization Tool* include a bar chart comparing the single-race estimates for each race selected in descending order and a downloadable table of the values displayed in the graph (**Figure 2**). Each bar represents a single-race estimate which is comprised of 2 counts - those who are that race alone, and an allocation of the multiracial population. Overlayed onto each bar is the respective sensitivity interval derived from the perturbation-based analysis.[2] The values in the graph can be downloaded as a comma-delimited file. The *Categorization Tool* also generates the age distributions of the selected racial groups. The graphic output panel includes line and stacked bar charts showing age distributions of each single-race estimates, with and without the partial NH adjustments. All graphics generated by the *Categorization Tool* can be downloaded in PNG format.

Hawai‘i 31 Common Racial group Estimates and Age and Sex Distributions

The single-race estimates for the 31 common races were extracted from the *Categorization Tool*, then separated by sex and age groups (0-18 years, 19-64 years, and 65 years and older) with and without the partial NH adjustment. The proportions of the total population and the sex and age groups were computed for each race. The age distributions of the most common racial groups in Hawai‘i (Chinese, Japanese, Filipino, NH, and White) were generated using the *Categorization Tool* and compared among them.

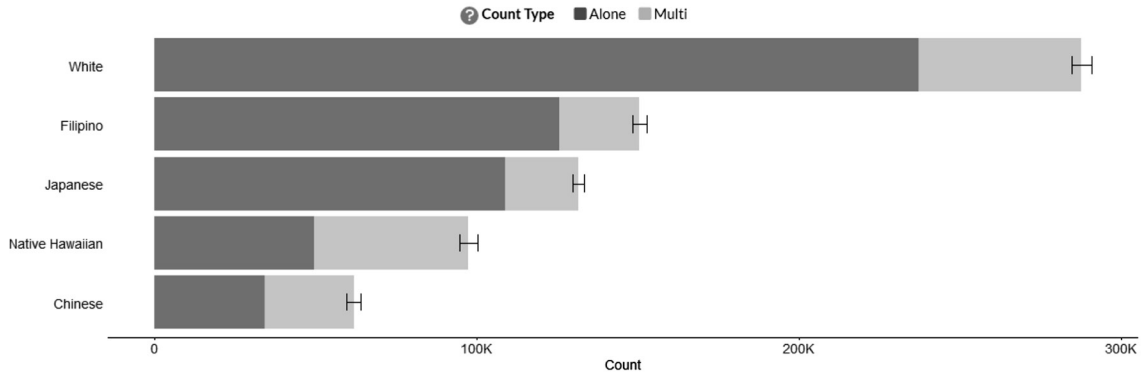
Results

Table 1 shows the population estimates for 31 common races in Hawai‘i. Among the Census major races (Level-1), Asian was the largest group, accounting for 46.5% of the total Hawai‘i population (1 360 301), followed by White, NHOPI, Black, SOR, and AIAN. The same rank order was observed in both sex groups and in the age 0-18 years and 19-64 years groups, but the fourth and fifth-ranked races (Black and SOR) reversed in the age 65 years and older group. In the detailed Asian racial groups (Level-2), Filipino had the largest population estimate, accounting for 18.0% of the total Hawai‘i population, followed by Japanese, Chinese, and Korean. The same rank order was found in both males and females, and in the age 0-18 years and 19-64 years groups. Among the age 65 years and older group, Japanese had the largest estimated population, accounting for 27.7% of individuals of this age group. Within NHOPI, Polynesians had the largest population estimate, accounting for 14.7% of the total Hawai‘i population and 88.0% of the NHOPI population. Among the detailed racial groups within Polynesian (Level-3), NH had the largest population estimate, accounting for 83.4% of Polynesian and 73.4% of NHOPI, respectively.

Table 2 shows the partial NH adjusted population estimates for the same 31 common races. While the same rank order was observed for the Census major races (Level-1), the adjusted NHOPI estimate increased by 150.0% from its unadjusted estimate. Since the total population is fixed, the estimates for all the other Level-1 races decreased. The greatest reduction was found in AIANs (-37.1%), and the smallest reduction was found in Asians (-8.4%). The estimates for Whites, Blacks, and SOR decreased by 11.0%, 12.5%, and 14.9%, respectively. The same rank order was also found in both sex groups and in the age 19-64 years old group. In the 0-18 years age group, NHOPIs had the largest size, followed by Asians and Whites. All the NHOPI sex and age group estimates increased, ranging from 147.0% for those 65 years and older to 196.8% for the 0-18 years age group. Among the Asian detailed races (Level-2), the greatest reduction was found in Chinese (-16.6%), followed by Okinawans (-16.0%), Indonesians (-11.7%), and Asian Indians (-9.9%). Among the detailed NHOPI races, Polynesians increased to 157.6%, especially in the 0-18 year age group (171.7%). The estimates for Micronesians and Melanesians decreased by 5.4% and 18.0%, respectively. The NH population itself had its estimate increased by 173.7%. The other detailed racial groups, Samoans, Tongans, and Tahitians, decreased by 23.0%, 16.6%, and 60.8%, respectively.

Figure 3 illustrates the detailed age distributions of the 5 most common races in Hawai‘i: Chinese, Japanese, Filipino, NH, and White. A pair of line charts presented on top show the unadjusted (left) and adjusted estimates (right). Each chart overlays the age distribution of each race allowing the comparison by race and partial NH adjustment status. The unadjusted estimates of White were higher than all the other races from age 0 to 73 years. Starting at age 74 years, however, Japanese showed the largest population estimate. For Whites, the working-age segment (19 to 65 years old) was larger than both the 0-18 years age group and the 65 years and older group. This working-age segment for Whites showed 3 peaks: 1 in young adults and 2 in middle-aged adults, with the highest peak found at around age 24. For Japanese, the middle-aged segment also appeared to be larger than the other age segments, with the highest estimate found at around age 55. The age distribution had a peak in middle-aged adults at around age 40 for Filipinos and at around age 52 for Chinese. For NH, the younger age segment appeared to be larger than the adult-age segments, with a peak at about age 3. The partial NH adjustment affected estimates for all age segments for every race, especially for the infant- and child-age segments. Larger increases in the NH population were observed at younger ages. Accordingly, the 4 other races had bigger decreases in their population at younger ages. There was no apparent change to the estimates of the elderly segment. The estimate for Filipinos decreased by up to 14.5%, which was relatively small compared to the other 3 races. The estimate decreased by up to 30.7% for Chinese, 24.0% for Japanese, and 23.6% for White. However, the adjusted estimates of White were still the highest, showing 3 peaks in the working-age segment, with the highest peak remaining at age 24. Japanese still had the largest population estimate starting at about 74 years of age.

A set of 4 stacked bar charts presented in the middle of **Figure 3** show the age distribution grouped by partial NH adjustment status and sex. Each chart stacks the age distribution by race so that the cumulative single-race estimates can be compared by NH adjustment status or sex. The stacked bar charts showed that the elderly Japanese population was mostly females. The other races appear to have a similar sex distribution across age. A line chart overlaying the partial NH adjusted and unadjusted single-race estimates is presented at the bottom of **Figure 3**. The separation between adjusted and unadjusted estimates was prominent in the individual race graphs.



Race	Single-Race Estimate	Minimum	Maximum	Alone	Multi
White	287,636	284,615	290,693	237,085	50,551
Filipino	150,443	148,306	152,660	125,683	24,760
Japanese	131,363	129,601	133,131	108,893	22,470
Native Hawaiian	97,401	94,665	100,213	49,528	47,873
Chinese	61,968	59,513	64,033	34,185	27,783

Showing 1 to 5 of 5 entries

Download the currently displayed single-race estimates.

Figure 2. Graphic and Tabular Outputs of the Hawai'i Single-Race Population Categorization Tool for Selected Racial Groups

Note: The error bars in the plot indicate the range of the sensitivity interval. The table shows the minimum and maximum numbers of the interval. *Alone* represents the count of individuals of that race alone, and *Multi* represents the count allocated from the multiracial population to that race.

Table 2. Single-Race Population Estimates by Sex and Age Groups for Common Racial Groups in the State of Hawai'i: Estimated from the 2010 Census Data using the Stepwise Proportional Weighting Algorithm after Adjusting for Multi-race Native Hawaiians

	Total	%[a]	Male	Female	Female %	0-18 years	%[b]	19-64 years	%[b]	≥65 years	%[b]
Level-1 racial groups											
Asian	578 670	42.5	272 309	306 362	52.9	108 857	18.8	353 243	61.0	116 571	20.1
White	384 300	28.3	205 381	178 919	46.6	68 909	17.9	262 881	68.4	52 510	13.7
NHOPI[c]	341 385	25.1	171 876	169 510	49.7	127 232	37.3	190 790	55.9	23 363	6.8
Black[d]	25 028	1.8	15 178	9850	39.4	7015	28.0	17 071	68.2	943	3.8
Some Other Races	20 599	1.5	11 173	9426	45.8	5528	26.8	13 870	67.3	1200	5.8
AIAN[e]	10 318	<1.0	5326	4992	48.4	3187	30.9	6579	63.8	552	5.3
Level-2 racial groups within Asian											
Filipino	227 973	16.8	110 397	117 577	51.6	54 819	24.1	142 026	62.3	31 129	13.7
Japanese	212 422	15.6	98 784	113 638	53.5	26 467	12.5	123 738	58.3	62 216	29.3
Chinese	86 422	6.4	41 061	45 361	52.5	17 902	20.7	52 554	60.8	15 966	18.5
Korean	29 420	2.2	11 802	17 618	59.9	4946	16.8	19 404	66.0	5070	17.2
Vietnamese	10 509	<1.0	4858	5651	53.8	2467	23.5	7113	67.7	928	8.8
Okinawan	2909	<1.0	1389	1520	52.3	470	16.2	1890	65.0	549	18.9
Asian Indian	2755	<1.0	1441	1314	47.7	542	19.7	1956	71.0	257	9.3
Thai	2350	<1.0	705	1645	70.0	386	16.4	1814	77.2	149	6.3
Laotian	1998	<1.0	962	1037	51.9	474	23.7	1371	68.6	153	7.7
Indonesian	526	<1.0	213	313	59.5	<100	18.1	367	69.8	<100	12.4
Cambodian	514	<1.0	237	277	53.9	124	24.1	370	72.0	<100	3.7
Burmese	217	<1.0	110	108	49.6	<100	18.4	157	72.4	<100	9.2
Pakistani	201	<1.0	123	<100	38.6	<100	25.4	138	68.7	<100	6.0
Sri Lankan	195	<1.0	106	<100	46.1	<100	16.4	137	70.3	<100	13.3
Nepalese	130	<1.0	<100	<100	49.3	<100	16.9	103	79.2	<100	3.1
Mongolian	129	<1.0	<100	<100	56.0	<100	13.2	105	81.4	<100	5.4
Level-2 racial groups within NHOPI											
Polynesian	315 530	23.2	159 186	156 345	49.5	116 916	37.1	175 971	55.8	22 644	7.2
Micronesian[f]	25 423	1.9	12 497	12 926	50.8	10 211	40.2	14 517	57.1	696	2.7
Melanesian[g]	427	<1.0	191	236	55.3	106	24.8	303	71.0	<100	4.2
Level-3 racial groups within Chinese											
Chinese[h]	85 466	6.3	40 660	44 807	52.4	17 760	20.8	51 883	60.7	15 824	18.5
Taiwanese	956	<1.0	402	554	57.9	143	15.0	671	70.2	143	15.0
Level-3 racial groups within Polynesian											
Native Hawaiian	289 970	21.3	145 849	144 121	49.7	108 569	37.4	160 282	55.3	21 119	7.3
Samoan	20 006	1.5	10 394	9612	48.0	6469	32.3	12 372	61.8	1164	5.8
Tongan	5102	<1.0	2744	2359	46.2	1774	34.8	3005	58.9	323	6.3
Tahitian	452	<1.0	199	253	56.0	103	22.8	311	68.8	<100	8.4

[a] Percentage of the total Hawai'i Population (1 360 301). [b] Percentage of the total for the racial group. [c] Native Hawaiian and Other Pacific Islander. [d] Black and African American. [e] American Indian and Alaska Native. [f] Micronesian includes: Guamanian or Chamorro, Mariana Islander, Marshallese, Palauan, Carolinian, Kosraean, Pohnpeian, Saipanese, I-Kiribati, Chuukese, Yapese. [g] Melanesian includes: Fujian, Melanesian, Papua New Guinean, Solomon Islander, Ni-Vanuatu. [h] Chinese except Taiwanese.

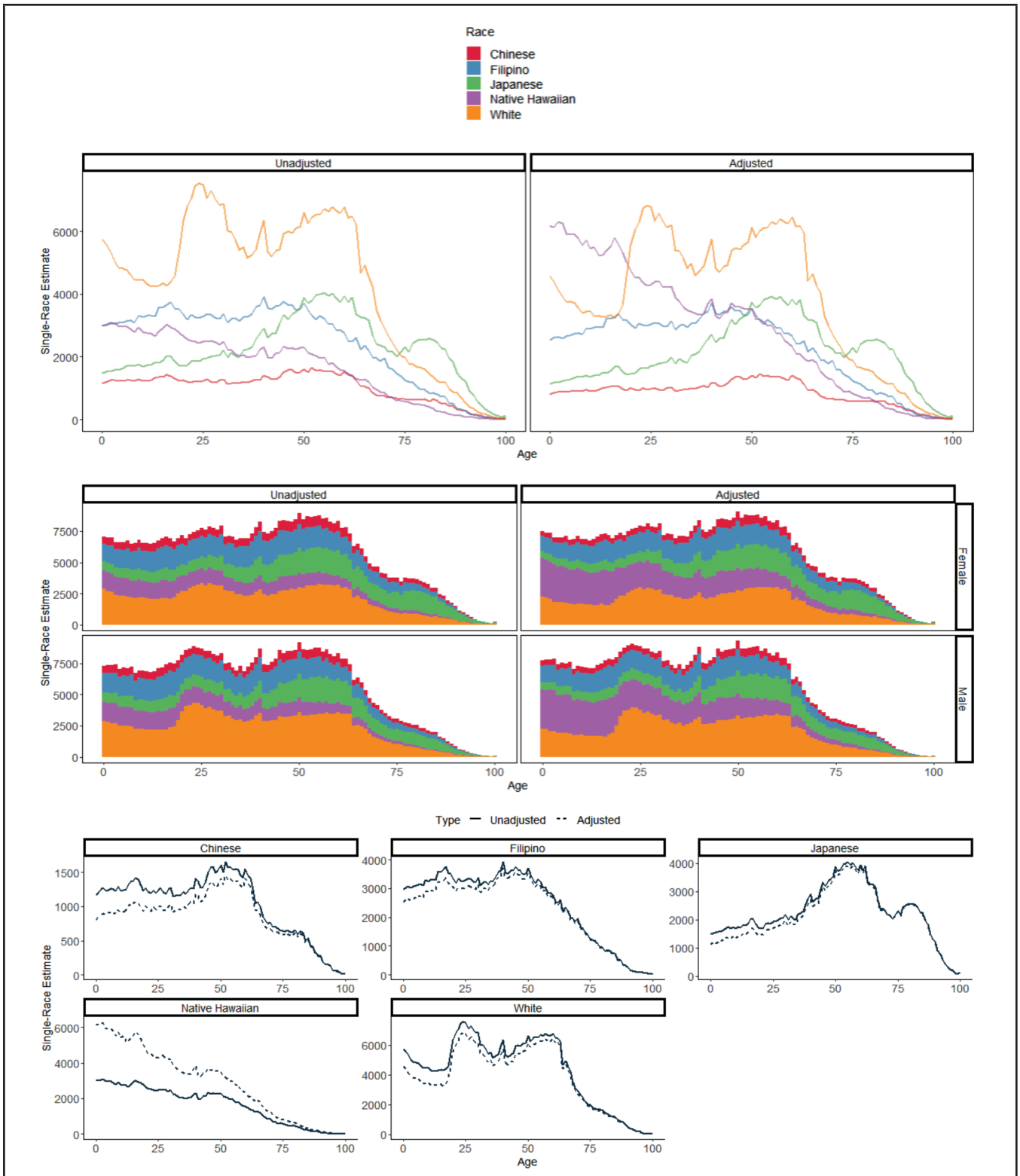


Figure 3. Age Distributions of Selected Racial Groups in Hawai'i, with and without the Partial Native Hawaiian (NH) Adjustment

Discussion

The graphs in the Shiny App *Categorization Tool* allowed comparisons of the single-race estimates to be made by age and sex. Notably, Japanese had the highest estimated population after the age of 74 years, which were mostly composed of females, and NH had greater population increases at younger ages after the partial NH adjustment. Using the partial NH adjustment, the NH estimate highlighted the NH representation in the state, but the estimates of all other races were reduced as the total population of Hawai'i must remain fixed. In addition to the visuals, single-race estimates for sex and major age subgroups were generated from the *Categorization Tool* for 31 common races in Hawai'i.

The partial NH adjustment resulted in more extensive changes in the population estimates for the younger ages. NHOPI is one of the fasting growing racial groups in the US, and NHOPI in Hawai'i represents about 30% of all NHOPI in the US.[9] Our results show that the largest age segments in the NH population are infants and children, and many of them are multiracial individuals. This can be seen by the largest increase in the population estimate after the partial NH adjustment. Given that many studies have reported health disparities in the NH and NHOPI communities,[10-12] the health characteristics of these racial groups could shift in the future due to the increased percentage of multiracial individuals. Therefore, proper determination of the population size and tracking the growth of the racial/ethnic groups experiencing health disparities are important from a public health perspective.

Out of privacy concerns, the Census Bureau sets up a reporting threshold of 100 and any counts lower than 100 are reported as missing values. Many smaller racial groups exist in Hawai'i. Unfortunately, the current study can only include 31 common racial groups. For each racial group, the SPWA estimation required both counts of individuals who reported that race alone and of those who reported that race and some other race(s). Five Asian detailed races did not meet this criterion and were excluded from this study. Excluding the 5 races could result in overestimation for the other 16 Level-2 races under Asian. However, since population sizes for those races were remarkably smaller than Filipino, Japanese, and Chinese, the impact on the 16 races was considered minor. Lastly, Census race data is self-reported. As a result, misclassification and under-reporting errors (eg, multiracial individuals not reporting all races) could result in biases in the estimates. The race categories used in the 2010 Census questionnaire only reflect a social definition of race recognized in the US and are not an attempt to define race biologically, anthropologically, or genetically. [9] Also, 2010 Census questionnaire surveyed race and Hispanic origin (ethinicity) as 2 separate questions. In the current analysis, we focused on only the 2010 Census data on race categorization.

The *Hawai'i Single-Race Population Categorization Tool* provides the most comprehensive Hawai'i population estimates to date. The *Categorization Tool* is publicly available to anyone with internet access. It is user-friendly, allowing the users to specify the targeted race and relevant demographics, and generates downloadable estimates and visuals. The perturbation analysis results allow the user to gauge the sensitivity of the population estimates. The 2020 decennial Census data for detailed races were unavailable at the time of this work. The categorization tool will be updated when the data becomes available to provide the most recent population estimates in Hawai'i. Also, the categorization tool will be continuously improved through engagement of the NHOPI communities and based on user feedback to better serve the reporting needs. The Shiny App *Categorization Tool* is designed to be a useful and effective tool for public health practitioners and for health service and health disparities researchers in Hawai'i.

Conflict of Interest

None of the authors identify a conflict of interest.

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