

Prevalence of Sudden Sensorineural Hearing Loss in Native Hawaiian Population

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Introduction

Sudden sensorineural hearing loss (SSNHL) is defined as a hearing loss of 30 dB of hearing loss or more over at least three consecutive frequencies that develops over three days or less. The majority of cases are idiopathic. There are suggestions of viral infections, autoimmunity and vascular impairments as possible contributions to underlying pathogenesis of SSNHL ¹. A 2013 study reported that the estimated incidence of ISSNHL in the USA was 11 to 77 per 100,000 people per year ². There are an estimated 1.4 million Native Hawaiian and Other Pacific Islanders (NHPI) that live in the United States. This particular population experiences significant disparities in health care, reflected by their higher rates of chronic diseases including hypertension, asthma, diabetes and cancer mortality³. In addition to the disproportionate burden of chronic illnesses, they also face barriers to access to consistent healthcare. It is hypothesized that the NHPI are significantly more likely to experience sudden sensorineural hearing loss compared to all other races.

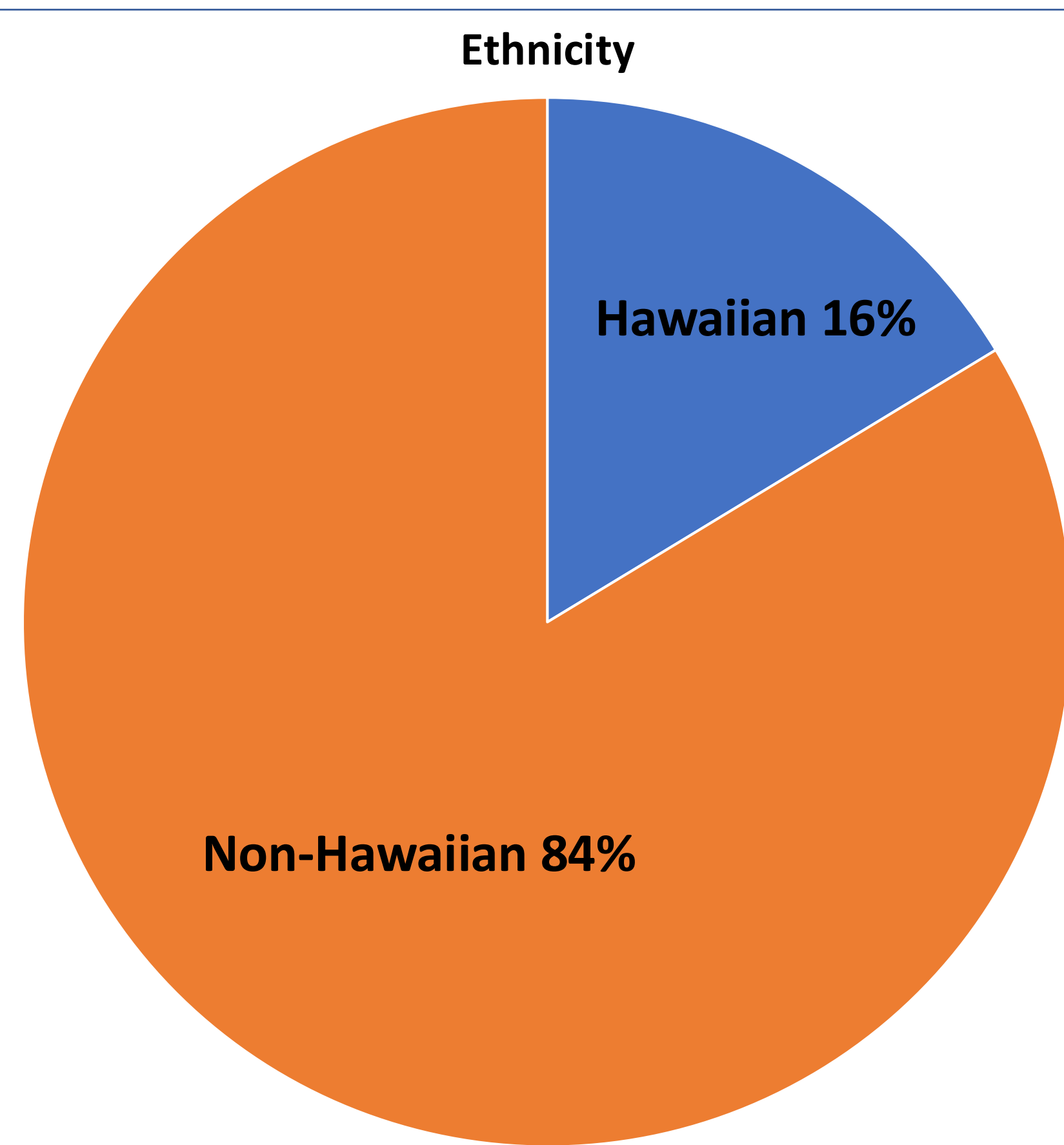


Figure 1. 257,467 patient charts were analyzed, of which 42,013 were Hawaiian while the remaining 215,454 were categorized as non-Hawaiian

Methods and Materials

This is a retrospective chart review at a tertiary medical center in Honolulu Hawaii from 2015 to 2024 reviewing the prevalence of sudden sensorineural hearing loss (SSHNL) and race. Patients' charts were reviewed for ICD-10 codes which included right, left or bilateral SSHNL and associated their documented race.

Results

In total, 257,467 patient charts were analyzed, of which 42,013 were Hawaiian while the remaining 215,454 were categorized as non-hawaiian. 97 Hawaiians had history of SSNHL while 645 non-hawaiians had history of SSNHL. A chi-square test of independence was performed to examine the relation between Hawaiian race and SSNHL. Preliminary results from the study are remarkable for a significant relation between the variables, $\chi^2(1, N = 257467) = 5.71$, $p = .016$. Significant at $p < .05$.

Table 1. Diagnosis of SSNHL each year

Year	Diagnosis per year
2015	31
2016	35
2017	44
2018	54
2019	53
2020	91
2021	79
2022	85
2023	108
2024	153

Ethnicity	Total members	Total SSNHL Dx	Percentage
Hawaiian	42,013	97	0.23%
Non-Hawaiian	215,454	645	0.30%
Total	257,467	742	

Table 2. Total number of members reviewed for ICD-10 codes for SSNHL and the total number of SSNHL diagnosis per population

Discussion and Conclusion

At our tertiary care medical center, a notable increase in the number of Native Hawaiian and Pacific Islander (NHPI) patients presenting with sudden sensorineural hearing loss (SSNHL) was observed over the course of our study period. Upon further analysis, our data demonstrated a statistically significant elevated risk of SSNHL among NHPI individuals compared to other ethnic groups. This finding is particularly concerning given the already well-documented healthcare disparities experienced by Native Hawaiian populations, including limited access to preventive care, delays in diagnosis, and underrepresentation in clinical research.

At our tertiary care medical center, we observed an increase in Native Hawaiian and Pacific Islander (NHPI) patients presenting with sudden sensorineural hearing loss (SSNHL). Our analysis revealed a statistically significant elevated risk of SSNHL among NHPI individuals compared to other ethnic groups. This finding is concerning, given the existing healthcare disparities faced by Native Hawaiians, including limited access to care and delayed diagnoses.

These results highlight the need to examine potential barriers to timely and effective treatment in this population. Factors such as cultural, geographic, and socioeconomic challenges may contribute to delayed presentations and worse outcomes. Although our current data do not account for comorbid conditions, we recognize that chronic diseases like diabetes mellitus and hypertension which are more prevalent in NHPI communities may influence the development of SSNHL.

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