

Prevalence of Physical Activity Levels by Ethnicity Among Adults in Hawaii, BRFSS 2001

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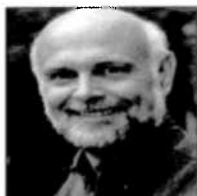
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Abstract

Background: Few studies have examined the differences in physical activity levels between subgroups of Asian or Pacific Islanders living in the United States. This study compared levels of physical activity for three subgroups of Asian or Pacific Islanders residing in Hawaii.

Methods: Data on Native Hawaiian/Part Native Hawaiian (N=585), Filipino (N=548), Japanese (N=871), and White (N=1728) adults were obtained from the Hawaii 2001 Behavioral Risk Factor Surveillance System (BRFSS), which contained more detailed questions on ethnicity than are collected by most states. Six physical activity categories were compared: inactive, insufficient (some activity but less than recommended activity), moderate activity (≥ 30 minutes of moderate activity ≥ 5 days a week), vigorous activity (≥ 20 minutes of vigorous activity ≥ 3 days a week), recommended activity (meeting either moderate or vigorous activity requirements), and a recently suggested target of ≥ 60 minutes of moderate activity 7 days a week or ≥ 20 minutes of vigorous activity ≥ 4 days a week.

Results: Among Asians or Pacific Islanders, Native Hawaiians / Part Native Hawaiians were most active (38.9% moderate and 23.9% vigorous), followed by Japanese (32.1%, 20.4%) and Filipinos (31.8%, 18.6%). Whites were more active than any of these three subgroups (47.2%, 35.4%).

Conclusions: Differences in physical activity levels between subgroups of Asians or Pacific Islanders in Hawaii suggests that aggregated data for all subgroups obscures important information about disparities in activity levels. State efforts to reduce disparities in activity levels should take into account differences between Asian or Pacific Islander subgroups.

Introduction

The United States is committed to eliminating health disparities through the implementation of community health initiatives aimed at achieving objectives in *Healthy People 2010*.¹ In the U.S., differences are frequently seen between racial or ethnic subpopulations on a variety of measures, including access to care, disease outcomes, diet, and physical activity. A primary focus area of *Healthy People 2010* is to increase the proportion of Americans who engage in daily physical activity.¹

At present, there is a lack of information on disparities in physical activity levels between Asians or Pacific Islanders (APIs), a group that increased by 204% from 1980-2000 through immigration and childbirth.² Research among APIs is complicated by the group's substantial diversity, as it has over 22 self-identified ethnic subgroups (e.g., Vietnamese, Korean, Chinese, Samoan, Asian Indian). Correspondingly, it may be difficult for researchers to obtain an adequate sample to perform analyses by subgroup.³ Previous studies on physical activity have either aggregated API subgroups in one race category,⁴ focused on just one subgroup,⁵ or not included API as one of their minority groups researched.⁶

Differences among physical activity levels between three API subgroups in Hawaii were characterized using data from the Hawaii 2001 Behavioral Risk Factor Surveillance System (BRFSS). Hawaii's BRFSS provided more detailed data by API ethnicity than the BRFSS in most other states. Six physical activity categories were studied: inactive, insufficient, moderate activity,^{7,8} vigorous activity,⁹ recommended activity,^{7,8} and a recently suggested higher target,¹⁰ henceforth called "recent target".

Methods

The BRFSS is a monthly, random telephone survey of noninstitutionalized civilian adults aged ≥ 18 years that is managed by state health departments in collaboration with the Centers for Disease Control and Prevention (CDC).¹¹ Surveyors collect state specific data through a standard set of questions focused primarily on risk behaviors linked to chronic disease. States may add their own questions to the standard BRFSS and in 2001 Hawaii included an ethnicity question that disaggregated the API ethnic category into 22 self-identified groups. Responses to the standard BRFSS race/ethnicity question did not necessarily match the Hawaii race/ethnicity question. The responses to the Hawaii race/ethnicity question were used because it had greater detail.

In 2001 the Hawaii BRFSS had 4500 respondents. Non-Latino/Non-Hispanic Caucasians (henceforth

called Whites; n=1728) and three API subgroups: Native Hawaiian/Part Native Hawaiian (NH/PH) (n=585), Filipino (n=548), and Japanese (n=871) were included in the analysis. These were the four largest ethnic/racial groups in the Hawaii BRFSS and each exceeded the minimum sample (≥ 50) required for subcategorical analysis.

The six categories of physical activity were derived from the BRFSS physical activity module that assessed frequency and duration of lifestyle-related activities in the past week;¹² these questions are available on the Internet at <http://www.cdc.gov/brfss/brfsques.htm>. *Inactive* was considered no activity, and *insufficient* was some activity but less than *recommended activity*. *Moderate activity* (e.g., brisk walking, household activities, bicycling) had to be performed ≥ 30 minutes ≥ 5 days a week.^{7,8} *Vigorous activity* (e.g., jogging, swimming, mowing the lawn with a non-motorized pushmower) required ≥ 20 minutes of such activity ≥ 3 days a week.⁹ *Recommended activity* was classified as meeting either moderate or vigorous activity requirements.^{7,8} *Recent target* was met by either ≥ 60 minutes of moderate intensity activity 7 days a week or ≥ 20 minutes of vigorous-intensity activity ≥ 4 days a week.¹⁰

Statistical Analyses Prevalence estimates and 95% confidence intervals (CI) were calculated using SUDAAN.¹³ All data were age adjusted to the 2000 standard US population.¹⁴ Prevalence rates of the six physical activity levels by race/ethnicity were calculated and stratified by sex (male, female), age (18-34, 35-54, ≥ 55 years), education (\leq high school or General Educational Development (GED) credential / some college or higher), employment status (employed [self-employed/employed for wages], unemployed [out of work/homemaker/ student/retired/unable to work]), and body mass index (BMI) categories (calculated as kg/m^2 from self-reported weight and height: normal [<25.0] and overweight/obese [$\geq 25.0 \text{ kg}/\text{m}^2$]). The data were separated into these categories to facilitate interpretation and ensure sufficient samples for analysis.

Results

The total sample for this report was 3732 adults. Based on the weighted data of those who were White or in one of the three API subgroups of interest, 49.4% were male and 50.6% were female; 30.3% were aged 18-34; 38.1% were 35-54, and 31.6% ≥ 55 (mean = 48 years). Just over three-fifths (60.7%) had some education beyond high school and 66.3% were employed.

Differences in physical activity levels were seen between the three ethnic groups of interest (Table 1). NH/PH were most active (38.9% moderate, and 23.9% vigorous), followed by Japanese (32.1%, 20.4%) and Filipinos (31.8%, 18.6%). Whites however, were more active (47.2%, 35.4%) than any of the three API subgroups.

Fewer adults met the recent target and the vigorous level than the moderate level. Filipino adults had the lowest prevalence of high levels of physical activity, with only 16.7% meeting the recent target and 18.6% the vigorous level (Table 1).

Prevalence of recommended physical activity varied by subgroup and demographics (Table 2). Among Filipinos, those who were overweight/obese met recommendations at a higher level than those of normal weight (42.2% vs. 38.6%); this difference was not seen among the other two API groups or among Whites. In both Filipinos and Japanese, a higher proportion of unemployed met the recommended activity level than did the employed (45.2% vs. 41.1% and 48.8% vs. 38.6%, respectively). As for age, prevalence of recommended activity among Whites declined after 34 years; for NH/PH, Filipinos, and Japanese the rates were similar between the 18-34 and 35-54 age groups but lower for those 55 or older (Table 2).

Discussion

The results from this analysis suggest that meaningful disparities in physical activity levels exist between API subgroups in Hawaii. Results indicated that certain correlates of physical activity in API subgroups differ from the patterns usually observed in other populations.^{6,15} For example, unemployed Filipinos and Japanese and overweight / obese Filipinos are more likely than their comparison groups (employed, normal weight) to meet requirements for either moderate or vigorous activity.

Overall, APIs met recommendations at a lower level than Whites, and the API subgroups were all significantly below Whites in meeting the vigorous and recent target levels. Consistent with our results, previous studies have reported non-Whites engaging in lower levels of physical activity than Whites.^{6, 16, 17} Further research is needed to understand why differences might exist between subgroups of APIs and how the correlates identified influence rates of physical activity.

Several limitations in this analysis should be noted. First, because only four ethnic or racial groups had large enough samples for analy-

Table 1.— Age-adjusted levels of physical activity among adults in Hawaii (18+) by race or ethnicity, BRFSS 2001

	Inactive % (95% CI)	Insufficient % (95% CI)	Moderate % (95% CI)	Vigorous % (95% CI)	Recent Target % (95% CI)
White	9.6 (7.9-11.4)	29.3 (26.4-32.2)	47.2 (44.0-50.4)	35.4 (32.4-38.5)	34.3 (31.2-37.4)
NH/PH	15.0 (11.2-18.8)	34.7 (29.4-40.1)	38.9 (33.4-44.3)	23.9 (19.3-28.5)	25.1 (20.4-29.7)
Filipino	16.4 (11.4-21.5)	42.5 (36.3-48.7)	31.8 (25.6-37.9)	18.6 (14.0-23.1)	16.7 (12.1-21.3)
Japanese	12.3 (9.4-15.1)	45.0 (40.2-49.8)	32.1 (27.4-36.8)	20.4 (16.5-24.3)	19.1 (15.2-22.9)

Note: Inactive: No moderate or vigorous activity; insufficient: moderate physical activity for <30 minutes per day or <5 days per week or vigorous physical activity for <20 minutes per day or <3 days per week; moderate: ≥ 30 minutes of moderate-intensity activity 5+ days per week; vigorous: ≥ 20 minutes of vigorous-intensity activity on 3+ days per week; recent target: ≥ 60 minutes each day of moderately intense physical activity or ≥ 20 minutes of vigorous-intensity activity ≥ 4 days per week (based on new suggestions by the Institute of Medicine). Age adjustment is to the 2000 standard US population. CI, 95% confidence interval.

ses, the team was not able to analyze differences among other API subgroups in Hawaii. Second, the BRFSS is based on self-reported data, which is subject to recall bias. Third, the results did not provide any information on the relationship of language ability,¹⁸ migration history,^{18,19} acculturation,²⁰ or perceptions²¹ of physical activity to the activity levels among API subgroups, which would provide the community health practitioner with a more in-depth understanding of this population group.

In conclusion, the results from this analysis illustrate that physical activity rates and correlates of rates differ between API subgroups. Public health practitioners should address these differences when designing physical activity programs that work towards the elimination of health disparities.

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Note: At the time of the research, Carrie M. Mampilly (formerly Carrie M. Yamamura) was with the Division of Nutrition and Physical Activity and Association of Schools of Public Health

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Table 2.— Age-adjusted levels of meeting recommended activity among adults in Hawaii (18+) by selected characteristics, BRFSS 2001

Selected Characteristic	Race or Ethnicity			
	White % (95% CI)	NH/PH % (95% CI)	Filipino % (95% CI)	Japanese % (95% CI)
Gender				
Male	67.3 (63.0-71.6)	59.0 (50.0-68.1)	46.8 (38.0-55.6)	47.2 (40.1-54.2)
Female	54.5 (50.1-58.9)	42.9 (36.1-49.7)	34.6 (26.8-42.4)	38.3 (31.9-44.6)
Age				
18-34	69.5 (63.6-75.5)	54.8 (45.9-63.7)	42.9 (31.6-54.3)	43.5 (32.9-54.0)
35-54	57.8 (53.3-62.3)	53.6 (44.7-62.6)	44.9 (35.0-54.9)	44.1 (36.6-51.7)
55+	56.4 (50.4-62.4)	40.5 (29.2-51.8)	33.7 (22.5-44.8)	39.9 (33.8-46.1)
Education				
GED/ ≤ high school	58.4 (52.1-64.7)	45.3 (38.0-52.6)	37.3 (28.9-45.6)	44.5 (35.1-53.9)
Some college or higher	62.1 (58.5-65.6)	55.8 (47.7-63.8)	46.0 (36.8-55.1)	42.4 (36.7-48.1)
Employed				
Yes	63.3 (59.3-67.2)	52.0 (44.3-59.8)	41.1 (33.6-48.7)	38.6 (32.6-44.6)
No	55.3 (48.8-61.7)	40.5 (30.0-50.9)	45.2 (32.0-58.4)	48.8 (38.0-59.6)
BMI category				
Not overweight or obese	64.5 (60.3-68.6)	55.2 (44.5-65.9)	38.6 (30.3-46.9)	44.6 (38.1-51.1)
Overweight or obese	57.9 (53.3-62.5)	47.8 (41.2-54.3)	42.2 (33.6-50.7)	40.7 (33.4-48.1)

Note: Percentages are estimates of those who engaged in either ≥30 minutes of moderate-intensity activity on 5+ days per week or ≥20 minutes of vigorous-intensity activity on 3+ days per week. Estimates are age adjusted to the 2000 standard US population. BMI categories were calculated from self-reported weight and height. Overweight or obese was a BMI (kg/m²) of ≥25.0. CI, 95% confidence interval; GED, General Education Development credential; BMI, body mass index.