Sleep, Physical Activity, and General Health Status: US Pediatricians and the General US Adult Population

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ABSTRACT

OBJECTIVE: To examine US pediatricians and US adults on 3 self-reported health measures (sleep, physical activity, and general health status) and to assess factors related to these measures for each group.

METHODS: Pediatrician data were collected through a 2012 American Academy of Pediatrics Periodic Survey (response rate = 64.0%). US population data originated from the 2012 National Health Interview Survey (response rate = 61.2%). Analytic samples included those currently working and ≥ 30 years old and were restricted to post-trainees (pediatricians; n = 854) and US adults with at least a bachelor's degree (n = 5447). Accounting for sample demographic differences, predicted probabilities compared the proportions reporting ≥ 7 hours of sleep, meeting physical activity recommendations, and reporting very good or excellent health. Multivariable logistic regression examined characteristics associated with health measures for pediatricians and US adults separately.

RESULTS: When the US population demographic profile was adjusted to resemble the pediatrician sample, 7 in 10 pediatricians (71.2%; confidence interval [CI], 68.0−74.5) and US adults (69.9%; CI, 67.8−72.0) reported ≥ 7 hours of sleep. Pediatricians were more likely than US adults to meet physical activity recommendations (71.4%; CI, 68.0−74.8 vs. 62.9%; CI, 60.6−65.2) and less likely to report very good or excellent health (74.3%; CI, 71.2−77.3 vs. 80.2%; CI, 78.3−82.1). In pediatrician and US population multivariable models, self-identified Asians and those working ≥ 50 hours were less likely to get ≥ 7 hours of sleep (P < .05).

CONCLUSIONS: Most US pediatricians and US adults reported getting the recommended amounts of sleep and physical activity and rated their health as very good or excellent. Those working fewer hours reported more sleep. Organization-directed approaches may be needed to help physicians maintain and improve their health.

KEYWORDS: exercise; health behavior; health status; pediatricians; physical activity; sleep

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WHAT'S NEW

The majority of US pediatricians and the US population meet sleep and physical activity recommendations and report very good or excellent health. Pediatricians report more physical activity and are less likely to report very good or excellent health than the general population.

PHYSICIAN HEALTH AND wellness are important issues attracting growing interest in the United States. Much of the current literature utilizes burnout as a measure of wellness[1] and focuses less on the physical health of pediatricians.[2] Previous research demonstrates that physical health is a critical aspect of pediatrician well-being; a 2013 study of early-career pediatricians reported that better self-reported general health was associated with improved work-life balance and career and life satisfaction.[3]

Pediatricians can act as role models for both their patients and colleagues. Studies have shown that physicians who engage in healthy personal habits are more likely to promote healthy behavior to their patients and peers.[4,5] Those who are in good physical health themselves are perceived as more credible and trustworthy by patients than practitioners with poor health.[6−8] Although pediatricians promote the health and wellness of their patients, little research has focused on the health of pediatricians themselves[9,10] and how their health compares to that of the general population. Although previous research has compared the general population and physicians on burnout[11,12] as well as physical activity,[13] to our knowledge no studies have examined the physical health of the general population versus pediatricians, specifically. This study examines the self-reported sleep, physical activity,

and general health status of US pediatricians and US adults and assesses the personal and work factors related to these health measures for both groups.

METHODS

DATA SOURCES

We analyzed cross-sectional data from 2012 using 2 separate data sources that asked identical questions on sleep, physical activity, and general health status. For US pediatricians, the prevalence of these health measures was examined using the American Academy of Pediatrics (AAP) Periodic Survey of Fellows. For the US population, the prevalence was assessed using the National Health Interview Survey (NHIS).

PERIODIC SURVEY OF FELLOWS

Pediatrician data were collected in 2012 via the AAP Periodic Survey of Fellows #81. Since 1987, the AAP has conducted Periodic Surveys on topics of importance to pediatrics.[14] Each survey uses a unique random sample of US non-retired members of the AAP. The 2012 Periodic Survey was an 8-page self-administered survey sent to 1627 members. An original mailing and 6 follow-up mailings to non-respondents were conducted from March through September; a $2 bill was included in the first mailing as a token of appreciation. After the second and fifth mailing, non-respondents were contacted by email and offered the option to respond online. A total of 1042 surveys were received (response rate = 64.0%).

The survey addressed several aspects of pediatricians' life and career experiences, including personal health. Pediatricians were asked about their own sleep, physical activity, and general health status using the same questions from the NHIS. The analytic sample (n = 854) was restricted to post-trainees who were 30 years or older and currently working. The survey was approved by the AAP institutional review board.

NATIONAL HEALTH INTERVIEW SURVEY

We conducted secondary data analysis of the 2012 NHIS for US population data. Administered by the Centers for Disease Control and Prevention's National Center for Health Statistics, the NHIS is an annual cross-sectional in-person survey of a representative sample of the US civilian non-institutionalized population. As the leading source of information on a broad range of health topics, the NHIS has consistently been collecting data on sleep habits since 2004, physical activity since 1997, and general health status since 1982. For the 2012 adult sample, the final response rate was 61.2%. The analytic sample (n = 5447) was restricted to working adults 30 years or older with at least a bachelor's degree. To produce population-based estimates for the NHIS data, data records were assigned a sampling weight. Survey estimation procedures were applied, and the Taylor series linearization method adjusted the standard errors for the complex survey design.

For both surveys, respondents with missing data for all 3 of the health measures (sleep, physical activity, and general health status) were excluded from analysis (ie, anyone who had valid data for at least 1 of these dependent variables was included).

MEASURES

SLEEP

Respondents to the NHIS and Periodic Survey were asked the question, "On average, how many hours of sleep do you get in a 24-hour period?" The reported number of hours of sleep was categorized into 2 groups based on published NHIS data: ≥ 7 hours of sleep or <7 hours.[15]

PHYSICAL ACTIVITY

The US Department of Health and Human Services has established guidelines on regular physical activity to help individuals maintain or improve their health. For adults, the 2008 federal recommendations for aerobic physical activity are as follows: 150 minutes per week of light or moderate-intensity aerobic physical activity, 75 minutes per week of vigorous-intensity aerobic physical activity, or an equivalent combination of both activities.[16] The following 2 questions were asked on both surveys: "How often do you do <u>vigorous</u> leisure time physical activities (exercise, sports, physically active hobbies, ...) for at least 10 minutes that cause heavy sweating or large increase in breathing or heart rate?" and "How often do you do <u>light or moderate</u> leisure time physical activities (exercise, sports, physically active hobbies, ...) for at least 10 minutes that cause only light sweating or a slight to moderate increase in breathing or heart rate?" Periodic Survey respondents provided frequency (number of times per week) and duration (number of minutes) for both vigorous and light or moderate leisure time activities; NHIS responses were recoded to match these units of measurement.[17] Physical activity was dichotomized based on the 2008 federal recommendations and NHIS reports (met/exceeded the recommendations or did not meet the recommendations).[16,18]

GENERAL HEALTH STATUS

Respondents to the 2 surveys were also asked, "In general, would you say your health is poor, fair, good, very good, or excellent?" We collapsed the responses into 2 categories based on NHIS reports (very good/excellent or poor/fair/good).[19]

DEMOGRAPHIC CHARACTERISTICS

The demographic characteristics we examined across both surveys included age (30−39 years, 40−49 years, 50−59 years, or ≥ 60 years), sex (male or female), marital status (not married or married/living with partner), employment status (employee or owner), hours worked per week (<50 hours or ≥ 50 hours), years in current position (<2 years, 3−5 years, 6−9 years, or ≥ 10 years), and geographic region (Northeast, Midwest, South, or West). We also examined respondents' race and ethnicity, which we categorized as white (white, non-Hispanic), Asian (Asian and Pacific Islander; non-Hispanic), and

"other" (due to sample size restrictions, this category includes all other respondents, including those identifying as Hispanic, black, or other/multiple race).

ANALYSIS

Due to their different sampling designs, we did not combine the Periodic Survey and NHIS datasets. We describe 1) demographic characteristics of US pediatricians and working US adults of similar age who have at least a bachelor's degree and 2) overall proportions of pediatricians and the US population who reported getting 7 or more hours of sleep in a 24-hour period, meeting the federal physical activity recommendations, and being in very good or excellent health.

We used multivariable logistic regression to generate adjusted predicted probabilities[20] for sleep, physical activity, and general health status for pediatricians and the US population separately. We generated predicted probabilities in 2 ways: first, we held all demographic characteristics (listed above) at their respective sample means (pediatrician and US population samples) and, second, we held all demographic characteristics at the means of the pediatrician sample (US population sample only). Given that there are some differences in the demographic profile of the pediatrician sample and the US population sample, the latter method allowed us to see if differences in health outcomes could be attributed to demographic differences between the 2 samples.

Finally, we conducted multivariable logistic regression to examine the association of the demographic characteristics (described above) and each of the 3 health measures (sleep, physical activity, and general health status) for pediatricians and the US general population separately. All analyses were conducted using Stata version 14 (StataCorp, College Station, Tex).

RESULTS

NON-RESPONSE ANALYSIS: US PEDIATRICIANS

We assessed non-response bias for pediatricians based on demographics available in the AAP administrative database. Using 1-sample proportion tests for gender and region and a *t*-test for age, we compared the analytic sample to the eligible target sample. Although the analytic sample was older than the target sample (mean ages of 48.5 years and 45.1 years, respectively; $P < .001$), there were no significant differences by gender or region.

DEMOGRAPHIC CHARACTERISTICS: US PEDIATRICIANS AND THE US POPULATION

The demographic characteristics for pediatricians and the US population are shown in Table 1. The pediatrician

Table 1. US Pediatrician and US Population Demographic Characteristics, 2012

		US Pediatricians (n = 854) % (n)	US Population (n = 5447) % (n)
Age (y)			
	30−39	26.0 (221)	29.7 (1620)
	40−49	27.4 (233)	28.8 (1567)
	50−59	29.0 (247)	26.5 (1441)
	60 and over	17.6 (150)	15.0 (819)
Sex			
	Female	59.7 (510)	47.6 (2591)
	Male	40.3 (344)	52.4 (2856)
Race and ethnicity			
	White, non-Hispanic	74.2 (631)	74.4 (4051)
	Asian, non-Hispanic	13.9 (118)	8.6 (926)
	Other (Hispanic, black, or other/multiple race)*	11.9 (101)	17.0 (470)
Marital status			
	Married/civil union/living with partner	87.1 (741)	75.5 (4100)
	Not married/partnered	12.9 (110)	24.5 (1333)
Employment status			
	Employee/other	69.2 (580)	88.8 (4807)
	Owner	30.8 (258)	11.2 (609)
Hours worked per week			
	<50	56.5 (475)	73.9 (4004)
	≥50	43.5 (365)	26.1 (1412)
Years in current position			
	<2	12.8 (107)	15.7 (851)
	2−5	27.0 (226)	26.9 (1454)
	6−9	14.2 (119)	16.5 (891)
	10 or more	46.0 (386)	40.9 (2208)
Region			
	South	34.1 (291)	34.2 (1863)
	West	22.2 (190)	22.6 (1232)
	Northeast	22.1 (189)	20.9 (1136)
	Midwest	21.6 (184)	22.3 (1216)

*Hispanic, black, and other/multiple race were combined due to the small sample size in the US pediatrician sample (n = 46, 28, and 27, respectively).

sample was mostly female (59.7%), and the US adult sample was mostly male (52.4%). The majority of pediatricians (74.2%) and US adults (74.4%) self-identified as white, were married (87.1% and 75.5%, respectively), were employees (69.2% and 88.8%, respectively), and worked fewer than 50 hours per week (56.5% and 73.9%, respectively).

HEALTH MEASURES: UNADJUSTED DESCRIPTIVE DATA

Among pediatricians, 26.8% reported 6 hours of sleep, 39.9% reported 7 hours, and 25.8% reported 8. Similar proportions of the US population reported 6 hours (22.5%), 7 hours (40.5%), and 8 hours (27.8%) of sleep. The mean number of sleep hours for pediatricians was 6.9, and US adults reported a mean of 7.8 hours. The unadjusted percentage reporting 7 or more hours of sleep was 69.0% for pediatricians and 71.6% among US adults.

On average, pediatricians reported 321 minutes of weekly physical activity; 6% reported 0 minutes. The mean number of physical activity minutes for US adults was 404, with 14% reporting no physical activity. The overall unadjusted percentage of pediatricians who met the physical activity recommendations was 70.6%, whereas 64.5% of US adults met the recommendations.

Three in 10 pediatricians (30.0%) reported excellent health. The most commonly reported health status among pediatricians was very good (43.6%), and 21.5% said their health was good. For US adults, almost 4 in 10 reported excellent (39.7%) and very good (39.1%) health, and 18.4% said their health was good. Less than 5% of pediatricians and the US population reported fair or poor health.

HEALTH MEASURES: US PEDIATRICIANS VERSUS US POPULATION

The Figure presents unadjusted and adjusted percentages for pediatricians and US adults who reported 7 or more hours of sleep, met the 2008 federal physical activity recommendations, and reported very good or excellent health. For pediatricians, the adjusted predicted probability of getting at least 7 hours of sleep was 71.2% (95% confidence interval [CI], 68.0−74.5), and for the US population the predicted value was 69.9% (95% CI, 67.8−72.0) when holding all variables at the pediatrician means. The adjusted predicted probability of meeting the federal recommendations for physical activity for pediatricians was 71.4% (95% CI, 68.0−74.8), but the predicted value for the general population, while holding all variables at the means of the pediatrician sample, was only 62.9% (95% CI, 60.6−65.2). Additionally, the adjusted predicted probability of reporting very good or excellent health status for pediatricians was 74.3% (95% CI, 71.2−77.3), but the predicted value for the US population, holding all variables at the pediatrician means, was greater at 80.2% (95% CI, 78.3−82.1). These findings show that when the demographic characteristics of the general population are adjusted to resemble the pediatrician sample there are significant differences in self-reported physical activity and health status.

DEMOGRAPHIC CHARACTERISTICS ASSOCIATED WITH US PEDIATRICIAN HEALTH MEASURES

SLEEP

In multivariable analysis for pediatricians, those who worked fewer than 50 hours per week were more likely to get 7 or more hours of sleep compared to those who worked 50 hours or more (adjusted odds ratio [aOR] = 2.31; 95% CI, 1.67−3.20). Pediatricians identifying as Asian (aOR = 0.50; 95% CI, 0.32−0.77) and those in the "other" race/ethnicity category (aOR = 0.56; 95% CI, 0.34−0.91) were less likely to report getting at least 7 hours of sleep than pediatricians identifying themselves as white. Pediatricians in the 50 to 59 age group were less likely than those 60 and older to report 7 or more hours of
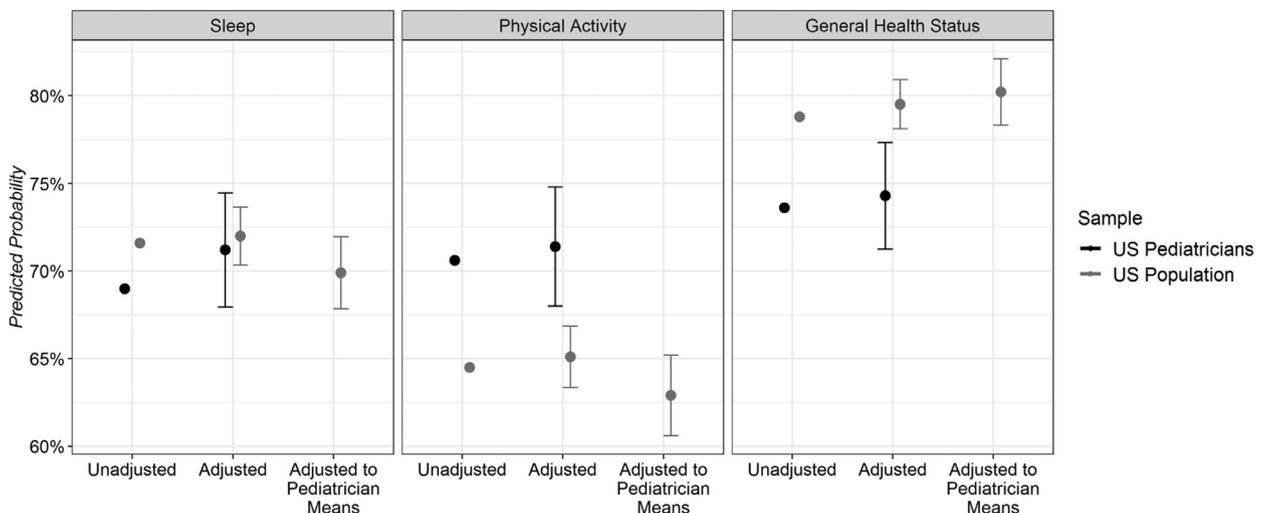

Figure. *Predicted probability of physical health outcomes. Error bars display 95% confidence intervals. Unadjusted data show descriptive results. Adjusted data show predicted probabilities generated from a logistic regression model, holding all other variables at their means of the respective sample. Adjusted to Pediatrician Means data show predicted probabilities generated from a logistic regression model, holding all variables at the means of the pediatrician sample.*

sleep, and those who had been in their current position between 6 and 9 years were less likely than pediatricians in their position for less than 2 years to report getting at least 7 hours of sleep (Table 2).

PHYSICAL ACTIVITY

In the logistic regression model for aerobic physical activity, pediatricians 50 to 59 years of age were more likely to meet the recommended amount of activity than those 60 years or older (aOR = 2.58; 95% CI, 1.53−4.33), and females reported less exercise than males (aOR = 0.59; 95% CI, 0.41−0.85). Additionally, pediatricians identifying as Asian were less likely to meet the recommendation than pediatricians who identified as white (Table 2).

GENERAL HEALTH STATUS

In the multivariable model for general health status, pediatricians who had been in their position for 6 to 9 years were more likely to report very good or excellent health than those who had been in their position for less than 2 years (Table 2). None of the other predictors in the model was statistically significant.

DEMOGRAPHIC CHARACTERISTICS ASSOCIATED WITH US POPULATION HEALTH MEASURES

SLEEP

Similar to US pediatricians, the number of hours worked and race were both associated with hours of sleep reported by US adults (Table 3). Those working fewer than 50 hours per week were more likely to get 7 or more hours of sleep compared to individuals who worked 50 hours or more (aOR = 1.91; 95% CI, 1.63−2.25). Those who identified as Asian and those in the "other" category were significantly less likely to report 7 hours of sleep or more each night than those who self-identified as white.

PHYSICAL ACTIVITY

In the general population, age, sex, race, and geographic region were associated with meeting the federal exercise recommendations (Table 3). Those in the 3 younger age groups (30−39, 40−49, and 50−59 years old) were all more likely to report getting the recommended amount of physical activity than those 60 years or older. Females were less likely than males, and those living in the West were more likely than those from the South, to get the recommended exercise each week. Those who identified as Asian and those in the "other" race/ethnicity category reported significantly less physical activity compared to people identifying as white.

GENERAL HEALTH STATUS

General health status was associated with age, race, marital status, and geographic region among the US adult population. Those 30 to 39 years old (aOR = 2.33; 95% CI, 1.83−2.98) and 40 to 49 years old (aOR = 1.56; 95% CI, 1.21−2.01) were more likely than those in the 60 years

and older group to report a favorable health status. Those in the "other" race/ethnicity category were less likely than those who identified as white to say their health was very good or excellent (aOR = 0.56; 95% CI, 0.46−0.68). Married or partnered respondents were also slightly more likely to report better health than those who were not married (aOR = 1.18; 95% CI, 1.00−1.39). Additionally, those living in the Northeast region of the United States were more likely than those from the South to report very good or excellent health (Table 3).

DISCUSSION

The health of pediatricians is an important area of research, as previous studies have shown that physicians can serve as models of healthy behavior for their patients. Using data collected in 2012 from the AAP Periodic Survey and the NHIS, we found that over two-thirds of US pediatricians and the US population reported getting at least 7 hours of sleep in a typical 24-hour period, over 60% of each reported meeting federal physical activity recommendations, and over 70% of both perceived their general health as very good or excellent. When adjusting for the demographic differences between the 2 populations, pediatricians were more likely than the US population to report meeting federal physical activity recommendations but less likely to perceive their general health as very good or excellent. This suggests that the statistically significant differences between pediatricians and the US population on these 2 health outcomes are not attributable to the demographic characteristics available for this analysis.

According to the National Heart, Lung, and Blood Institute, adults should get between 7 and 8 hours of sleep each night.[21] Sleep is a core component of the AAP Section on Integrative Health's blueprint for physician preventive health.[2] Our study found that pediatricians reported similar hours of sleep in a typical 24-hour period compared to the US population, with majorities reporting 7 or more hours of sleep. Previous work showed that pediatric residents get even less sleep; 4 in 10 residents have reported getting less than 7 hours per night.[22] The cumulative effects of sleep loss have been associated with a wide range of health problems, and insufficient sleep has been linked to an increased likelihood of accidents and medical errors.[23] Almost one-third of pediatricians in our study reported not getting the recommended amount of sleep, and this was particularly true among pediatricians who reported working at least 50 hours per week.

After adjusting for demographic differences, our findings show that pediatricians get more exercise than US adults. Perhaps this is due to greater awareness of the benefits of exercise for physical health. However, there is still a relatively large percentage of pediatricians who do not meet the federal recommendations for weekly physical activity, showing that even physicians who are more aware of guidelines for good health are sometimes unable to meet these recommendations. This may in part be due to the strain put on pediatricians at home and at work and the

Table 2. Factors Associated with Sleep, Physical Activity and General Health Status for US Pediatricians, 2012

	≥ 7 Hours of Sleep (n = 842)		Meets Federal Recommendations for Physical Activity (n = 768)		Very Good/Excellent Health Status (n = 842)	
	%*	aOR, 95% CI	%*	aOR, 95% CI	%*	aOR, 95% CI
Age (y)						
60 and over (referent)	74.2	...	64.4	...	66.7	...
30−39	73.3	0.75, 0.40−1.38	64.5	1.46, 0.79−2.69	78.6	1.84, 1.00−3.40
40−49	70.4	0.85, 0.50−1.44	70.1	1.68, 0.99−2.85	76.0	1.44, 0.86−2.42
50−59	61.6	0.59, 0.37−0.96[†]	80.2	2.58, 1.53−4.33[†]	71.2	1.08, 0.67−1.73
Sex						
Male (referent)	65.7	...	75.9	...	72.9	...
Female	71.2	1.20, 0.86−1.68	67.1	0.59, 0.41−0.85[†]	74.1	0.95, 0.67−1.35
Race and ethnicity						
White, non-Hispanic (referent)	72.4	...	72.7	...	74.2	...
Asian, non-Hispanic	59.3	0.50, 0.32−0.77[†]	61.3	0.60, 0.38−0.94[†]	72.8	0.96, 0.60−1.53
Other (Hispanic, black, or other/multiple race)	61.4	0.56, 0.34−0.91[†]	68.1	0.78, 0.47−1.29	70.7	0.75, 0.46−1.24
Marital status						
Not married/partnered (referent)	71.3	...	70.7	...	67.6	...
Married/partnered	68.8	0.98, 0.60−1.59	70.4	0.79, 0.48−1.30	74.4	1.32, 0.83−2.10
Employment status						
Owner (referent)	70.6	...	69.1	...	72.6	...
Employee/other	68.1	0.88, 0.62−1.27	70.8	1.39, 0.95−2.02	74.0	1.11, 0.77−1.60
Hours worked per week						
≥ 50 (referent)	58.9	...	69.9	...	72.6	...
<50	77.6	2.31, 1.67−3.20[†]	71.1	1.33, 0.95−1.87	74.7	1.22, 0.87−1.70
Years in current position						
<2 (referent)	77.4	...	61.5	...	69.2	...
2−5	69.3	0.72, 0.41−1.28	67.0	1.25, 0.74−2.10	76.3	1.53, 0.90−2.60
6−9	64.4	0.49, 0.26−0.93[†]	71.8	1.51, 0.81−2.82	80.2	2.09, 1.10−3.97[†]
10 or more	67.6	0.55, 0.30−1.00	74.3	1.74, 0.98−3.11	71.2	1.48, 0.85−2.57
Region						
South (referent)	65.7	...	69.1	...	73.8	...
West	72.5	1.41, 0.92−2.18	72.9	1.20, 0.76−1.88	69.3	0.76, 0.50−1.15
Northeast	69.0	1.12, 0.73−1.70	66.9	0.84, 0.54−1.29	75.4	1.09, 0.70−1.69
Midwest	70.6	1.43, 0.93−2.21	74.3	1.19, 0.75−1.87	76.1	1.19, 0.76−1.88

aOR indicates adjusted odds ratio, CI, confidence interval.

*Unadjusted.

[†]$P < .05$.

Table 3. Factors Associated with Sleep, Physical Activity, and General Health Status for US Population, 2012

	≥ 7 Hours of Sleep (n = 5296)		Meets Federal Recommendations for Physical Activity (n = 5265)		Very Good/Excellent Health Status (n = 5343)	
	%*	aOR, 95% CI	%*	aOR, 95% CI	%*	aOR, 95% CI
Age, in years						
60 and over (referent)	74.8	. . .	58.7	. . .	72.9	. . .
30−39	73.6	0.97, 0.76−1.23	67.8	1.64, 1.30−2.07[†]	83.8	2.33, 1.83−2.98[†]
40−49	69.2	0.79, 0.63−0.99[†]	64.0	1.36, 1.08−1.71[†]	78.9	1.56, 1.21−2.01[†]
50−59	70.0	0.81, 0.64−1.02	64.6	1.33, 1.05−1.68[†]	76.4	1.25, 0.96−1.63
Sex						
Male (referent)	71.5	. . .	68.1	. . .	79.6	. . .
Female	71.6	0.95, 0.82−1.10	60.6	0.70, 0.61−0.81[†]	77.9	0.92, 0.78−1.09
Race and ethnicity						
White, non-Hispanic (referent)	73.5	. . .	67.1	. . .	80.9	. . .
Asian, non-Hispanic	69.0	0.72, 0.55−0.95[†]	51.8	0.45, 0.35−0.56[†]	76.8	0.77, 0.58−1.02
Other (Hispanic, black, or other/multiple race)	64.5	0.62, 0.51−0.75[†]	59.7	0.70, 0.59−0.83[†]	70.8	0.56, 0.46−0.68[†]
Marital status						
Not married/partnered (referent)	68.8	. . .	65.6	. . .	76.1	. . .
Married/partnered	72.4	1.19, 1.01−1.40[†]	64.1	0.90, 0.78−1.03	79.7	1.18, 1.00−1.39[†]
Employment status						
Owner (referent)	71.6	. . .	66.7	. . .	78.9	. . .
Employee/other	71.5	1.04, 0.81−1.32	64.4	0.93, 0.75−1.14	78.8	0.95, 0.73−1.24
Hours worked per week						
≥ 50 (referent)	61.7	. . .	65.3	. . .	81.1	. . .
<50	74.9	1.91, 1.63−2.25[†]	64.4	1.06, 0.89−1.25	78.2	0.87, 0.71−1.06
Years in current position						
<2 (referent)	72.3	. . .	65.6	. . .	78.7	. . .
2−5	71.7	1.02, 0.82−1.27	66.1	1.02, 0.80−1.30	78.5	0.98, 0.75−1.27
6−9	72.1	1.03, 0.78−1.36	62.7	0.88, 0.67−1.15	79.2	1.04, 0.79−1.38
10 or more	70.9	0.97, 0.78−1.21	63.9	0.96, 0.78−1.18	78.8	1.19, 0.91−1.54
Region						
South (referent)	70.7	. . .	62.7	. . .	76.7	. . .
West	74.0	1.15, 0.93−1.42	69.9	1.42, 1.15−1.75[†]	78.0	1.02, 0.81−1.29
Northeast	69.3	0.88, 0.69−1.13	61.7	0.94, 0.76−1.17	81.9	1.31, 1.05−1.65[†]
Midwest	72.5	1.01, 0.81−1.27	64.4	1.02, 0.83−1.25	80.0	1.10, 0.86−1.40

aOR indicates adjusted odds ratio; CI, confidence interval.

*Unadjusted.

[†]P < .05.

stress they experience trying to maintain a balance.[3,24,25] Physicians' work schedules and family commitments are self-reported barriers to getting sufficient exercise.[26]

Our data reveal that when adjusting for the demographic differences between the 2 groups, the US population is more likely than the pediatrician population to report very good or excellent general health. Due to the nature of their work and their in-depth knowledge of health issues, pediatricians may have a more nuanced assessment of their health. However, studies have shown self-assessed health status to be a valid indicator of health and an accurate predictor of future health and mortality.[27,28] Our findings are similar to previous studies that have found that most physicians report very good or excellent health. According to Starmer et al,[3] more than 7 in 10 early-career pediatricians rated their health as very good or excellent, whereas a study of physicians and dentists in New Zealand found that over 6 in 10 said the same.[29]

There are several limitations to this study. The Periodic Survey was administered only to members of the AAP, so our findings may not be generalizable to all pediatricians. However, according to the AAP, about 60% of US board-certified pediatricians between the ages of 27 and 70 were members in 2016; therefore, AAP members represent the majority of board-certified pediatricians. Our non-response bias analyses showed that older pediatricians were more likely to respond; although there were statistically significant age differences between the analytic and target samples, the substantive differences were relatively small, and age was controlled for in our models. The data from both the Periodic Survey and NHIS are self-reported with no independent measures of sleep or physical activity; however, self-reported questionnaires can be valid tools that provide valuable information.[30] Social desirability bias could also have affected the validity of our research findings. Responses to the NHIS may be more prone to this bias, as it is an in-person survey (the Periodic Survey was mailed to respondents, thus allowing more anonymity), which could explain the US population reporting better general health than pediatricians.

We were also limited by the number and nature of questions asked on both surveys. For example, we did not examine generalists versus subspecialists because this is not applicable to the US population and thus was not on the NHIS. We only focused on physical health measures, as the Periodic Survey did not include any questions on mental health. Not all survey questions used for the demographic characteristics were asked in exactly the same way on each instrument; however, the 3 outcome measures were identical. Additionally, the NHIS sample included those with a bachelor's degree or higher, whereas those in the pediatrician sample had received several more years of education. However, restricting the NHIS sample to a higher level of education would have excluded much of the general adult population and greatly reduced the sample size. Finally, because they had different sampling schemes, we were not able to merge the 2 survey samples and therefore could only compare pediatricians to the US population indirectly.

CONCLUSION

According to our findings, about 7 out of 10 US pediatricians and US adults get the recommended amount of sleep. In our study, 7 in 10 pediatricians and more than 6 in 10 adults met the physical activity recommendations, and almost 75% of pediatricians and 80% of US adults rated their general health as very good or excellent. Physical health is important for physicians on both a personal and a professional level. Organization-directed approaches may be needed to help physicians reach their optimal personal health in order to lead their patients by example and, in turn, improve their patients' health.

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