Original Article

Work and health habits of Thai physicians

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ABSTRACT

Background: Physicians usually have a high responsibility in caring for people. Many times, they encounter work-life imbalances that can impact both their personal health and the quality of medical services they provide. **Objective:** To evaluate the works and health habits of Thai physicians. **Methods:** Thai physicians who participated in the hospital's Corporate Social Responsibility "Save Doctors' Heart" project, conducted between February 14, 2022 and October 31, 2022, were invited to participate in the study. Data collected was personal data, work habits, including workplace, work hours, and health habits, including fiber in the diet, exercise, sense of well-being, history of health surveillance, and health coverage system. The characteristic features associated with their work and health habits were studied. **Results:** The responses to each question varied among the 1,244 physicians who agreed to join the study. The median age was 45.0 years (IQR 39,56 years). Almost all (98.6%) were still active in medical practice, with >1 workplace in 14.7%. Nearly half (44.5%) worked >40 hours per week. Most reported a moderate to high fiber diet (80.8%), but only 29.7% exercised >3 days per week. Some degree of stress was revealed in 82.1%, being moderate to severe in 25.8%. The younger physicians with less exercise were significantly associated with moderate/severe stress. Only slightly more than half (53.0%) had a good sense of well-being. Nearly 30% had irregular health surveillance. The two most common reasons were unavailability/no time and having no symptoms. **Conclusion:** Thai participating physicians were still active professionally and had mixed health habits. Most consumed a moderate to high fiber diet and had regular health surveillance; however, with less exercise and some degree of stress. More than half were self-assessed to have a good sense of well-being.

Keywords: Habits, health, healthcare workers, physician

Introduction

In 2020, the World Health Organization reported the number of doctors was 3.53 per 1,000 global population, with only 1.0 in Thailand.[1] Slightly different, the National Statistical Office of Thailand reported one doctor per 1,680 Thai population.[2] Doctor inadequacy varies by country or region and is certainly magnified with disease outbreaks, epidemics, or pandemics transpire, such as COVID-19.

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Doctors should be in good health to provide optimal health services. However, data have shown nutritional and lifestyle of doctors have led to health problems impacting their medical services.[3-6] Few studies reported that the doctors who had healthy nutrition and lifestyle behaviors had better attention and behavior in counseling the patients for healthy lifestyles.[3,4] Concerning the health of doctors themselves, several studies have reported that medical staff often experience higher stress, dissatisfaction with their mental health and physical well-being, high prevalence of medical illnesses, or low quality of life.[4-7] One study from Thailand reported psychological and physical disorders, particularly metabolic syndrome among healthcare professionals.[8] However, data specific to the doctors were not available.

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We assumed that doctors, with distinct roles within medical fields, may have unique features and lifestyle patterns of health habits, diet, physical activity, stress, sense of well-being, etc. However, there have been no specific studies in Thailand that focused on the personal life and work habits of Thai doctors. Hence, this study aimed to assess the work and health habits or lifestyles of Thai doctors as well as their associated features.

Materials and Methods

Our hospital initiated the corporate social responsibility (CSR) "Save Doctor's Heart project" between February 14, 2022 and October 31, 2022. Thai doctors aged 35–75 without preexisting heart diseases were invited to have cardiac and general health checkups at our hospital. This study ran parallel to the CSR project focusing on the work and health habits of the doctors. Approval from the Hospital Institutional Review Board was obtained for the research (COA-MPIRB 003/2022).

The individuals who joined our CSR project were invited to the study. Data of the doctors, who had read an information sheet about the study and verbally consented to participate by voluntarily giving information, were collected from electronic medical charts and a one-page questionnaire about personal, work, and health habits, which were self-answered upon entering the study.

Data collected from the primary health assessment included age, health habits of alcohol and caffeine consumption, smoking, frequency of exercise, and stress level. Personal and working data included gender, marital status, monthly family incomes, workplace(s) number, weekly work hours, health coverage system, dietary fiber, history of health surveillance, and personal characteristics for the sense of well-being. The sense of well-being was assessed by the "Well-Being is a Skill" questionnaire which assessed an individual's skills leading to the overall sense of happiness, contentment, and satisfaction with life. The skills were self-assessed resilience to a difficult life, a positive outlook on life, attention to problem-solving, and generosity.[9] A 5-point Likert scale with the words "poor" to "excellent" was used to rate each skill and a final sense of well-being score was obtained by summing all responses.

To assess the association between work and health habits, the clinical characteristics of the participants were grouped as follows: (1) monthly family income as more or less than 200,000 Baht (approximately 5,730 USD) based on a Thai doctor's average monthly income of 228,000 Baht[10]; (2) primary workplace as private or public; (3) weekly work hours as <40 hours or more; (4) exercise as >3 days/week or less; (5) stress as mild or moderate/ severe; (6) history of health surveillance as regular (timely manner) or irregular (as indicated or at convenience); (7) dietary fibers as good (moderate/high) or fair (minimal/low). The sense of well-being was categorized as "good" (higher scores than the median score), or else as poor. Overall lifestyle was arbitrarily determined as healthy with the presence of >3 following

features: <40 weekly work hours, moderate to high fiber diet, exercise >3 days/week, no or mild stress, and a good sense of well-being score, or else as unhealthy.

Statistical analyses were performed with IBM SPSS Statistics for Windows, Version 26.0 (IBM Corporation, Armonk, NY, USA). Continuous variables were presented as mean ± standard deviation (SD) for normally distributed data or otherwise with median (IQR), and categorical variables, as frequency and percentage. A univariate analysis to identify factors that may be associated with weekly work hours and a multivariate regression analysis to explore independent factors considered significant by univariate analysis (P-value < 0.05) or of clinical importance were performed. A P-value < 0.05 was considered statistically significant.

Results

A total of 1,532 doctors registered for the CSR project. However, 111 did not confirm their registration, and 53 were duplicate registrations. 28 were excluded due to being younger than 35 years, and 27 canceled the appointment due to a recent health check-up. Out of 1,313 doctors who participated in the CSR project, 1,244 agreed to join in the study.

Personal and work data

The median age of 1,244 doctors was 45.0 years (IQR 39, 56 years). Slightly more than half were female (55.2%). Regarding the questions about personal and work habits, various numbers of responses were obtained. More than two-thirds were married or ever married, and slightly more than half had higher-than-average incomes of Thai doctors. Among doctors who provided data on work, almost all (98.6%) were still in medical practice. Older age was significantly associated with inactive medical work, 5.4% ($n = 5/93$) compared to younger age ($n = 4/562$) ($P = 0.004$). On the other hand, those who were over 60 years old were still in medical service (88/93; 94.6%). Among those who were still in medical service, 62.4% were in private practice whereas 37.6% were in public service. The two most common primary workplaces were private hospitals (37.5%) and public hospitals (34.2%). Other primary workplaces were private clinics, public health units, freelancers, or not specified. About 15% ($n = 95$) of the doctors worked in two or more places. Summing up the work hours of each, the median was 40.0 hours/week (IQR 35, 50 hours). On the other hand, 55.5% worked <40 hours per week. Table 1 shows the personal and work data of the doctors in the study.

Health habits data

Table 2 reveals the health habits of Thai doctors participating in the study. Various number of doctors responded to each health habit item. Regarding fiber diet and exercise, 80.8% reported a moderate or high-fiber diet but only 29.7% had exercise >3 days/week. Significantly higher frequencies of moderate/high-fiber diet were among older doctors or had

Table 1: Personal data and work habit of Thai physicians

Characteristic features		*n*	%
Personal			
Age in years (*n*=1,244)	35–45	649	52.1
	46–59	390	31.4
	>60	205	16.5
Gender (*n*=1,244)	Female	687	55.2
	Male	557	44.8
Marital status (*n*=730)	Single	236	32.3
	Married	463	63.4
	Separate/divorced	31	4.3
Family income, Baht (approximate USD*) (*n*=686)	<100,000 (<2,860)	200	29.2
	100,000–200,000 (2,860–5,730)	94	13.7
	>200,000 (>5,730)	392	57.1
Work habits			
Number of workplaces (*n*=646)	1 place	551	85.3
	> = 2 places	95	14.78
Primary workplace (*n*=646)	Private hospital	242	37.5
	Public hospital	221	34.2
	Private clinic	133	20.6
	Public health unit	22	3.4
	Others, not otherwise specified	28	4.3
Secondary workplace (*n*=646)	None	551	85.3
	Yes	95	14.7
Work hours per week (*n*=705)	<40	391	55.5
	>40	314	44.5

*34.9281 Baht – 1 USD. https://www.bot.or.th/thai/_layouts/application/exchangerate/exchangerate.aspx

Table 2: Health habits and findings of Thai physicians

Health habits and findings		*n*	%
Dietary fiber (*n*=725)	Minimal	5	0.7
	Low	134	18.5
	Moderate	457	63.0
	High	129	17.8
Caffeine consumption (*n*=1,050)	No	329	31.3
	Yes	721	68.7
Alcohol (*n*=1,198)	No	1071	89.4
	Yes	127	10.6
Smoking (*n*=1,187)	No	1,178	99.2
	Yes	9	0.8
Exercise (*n*=1,186)	None	253	21.3
	1–2 days/week	581	49.0
	>3 days/week	352	29.7
Stress (*n*=1,176)	No	211	17.9
	Mild	662	56.3
	Moderate	288	24.5
	Severe	15	1.3
Sense of well-being* (*n*=726)	Poor	341	47.0
	Good	385	53.0
Lifestyle** (*n*=725)	Unhealthy	121	29.2
	Healthy	513	70.8

* Sense of well-being score of 13 used as a cut-off to determine poor (score <13) or good (score >13).
**Lifestyle determined as very healthy with the presence of >3 following features: <55 weekly work hours, moderate to high fiber diet, exercise >3 days/week, no or mild stress, and good sense of well-being score, or else as unhealthy

exercise >3 days/week group than the other comparative groups: 88.0% (*n* = 95/108) vs. 79.6% (*n* = 492/618) for age (*P* = 0.046) and 92.0% (*n* = 138/150) vs. 77.9% (*n* = 433/556) for exercise (*P* < 0.001).

For the self-assessment of stress, 82.1% reported some degree of stress, being a mild degree in 56.3% whereas the other 25.8% had moderate or severe stress. Factors significantly associated with moderate/severe stress were younger (age 35–60 years) and having exercise <3 days/week: 27.6% vs. 15.6% for age (*P* < 0.001) and 28.3% vs. 19.9% for exercise (*P* = 0.003). Although female gender, single status, lower family monthly income, and >40 weekly work hours tended to have moderate/severe stress more frequently than their counterparts, the differences were not statistically significant (data not shown).

Regarding the sense of well-being, the median summed score of the four personal characteristics was 13.0 (IQR 12, 14). More than half (53.0%) were determined as having a good sense of well-being. The doctors who had moderate/high-fiber diets were found to feel well-being more frequently than those with no/low fiber diet: 54.8% (*n* = 321/586) vs. 45.3% (*n* = 63/139) (*P* = 0.045). Moderate to severe stress was also found less frequently among the doctors having higher scores of well-being, it was not statistically significant (data not shown). Of 725 doctors who had complete data (weekly work hours, dietary fiber, exercise, stress, and sense of well-being) to determine lifestyle, 70.8% (*n* = 513) were determined as having a healthy lifestyle.

Table 3 shows data of the doctors who responded to the questions of health system coverage and health surveillance. The two most common health system coverages were civil servant medical service (39.4%) and social security service (23.1%). Of note, 22.8% had two or more health coverage systems. Of those who reported a pattern of health surveillance, 71.2% reported regular health surveillance. Among those who had irregular health surveillance, the two most common barriers were time constraints or inconvenience (63.2%) or having no symptoms (17.6%). We did not find any clinical features of the doctors associated with irregular health surveillance.

We explored the doctors' features that may potentially be associated with their weekly work hours. The significant factors associated with >40 weekly work hours by both uni- and multi-variate analyses were younger age, male gender, single/divorced status, higher monthly family income, >2 primary workplaces, and exercise 0–2 days/week [Table 4].

Discussion

Our study found many crucial issues involving the work and health habits of Thai doctors. Although the number of respondents varied in each aspect of the assessment, over half

Table 3: Health system coverage and history of health surveillance

Health system coverage and history of health surveillance	n	%
Health system coverage (*n*=719)		
Universal coverage	14	1.9
Civil servant medical service	283	39.4
Social security service coverage	166	23.1
Personal insurance	87	12.1
Employer coverage	1	0.1
Other public service	4	0.6
Multiple coverages	164	22.8
History of health surveillance (*n*=723)		
Regular	515	71.2
Irregular	208	28.8
Reason for irregular health surveillance (*n*=182)		
No time/inconvenience	115	63.2
No symptoms	32	17.6
Forget about	4	2.21
No coverage	3	1.6
Other, NOS	10	5.5
One or more reasons	18	9.9

of the doctors in the hospital CSR project responded to most questions. These rates were generally acceptable for any survey studies (60 +/- 20%).[11]

We found most of our doctors were middle-aged and still working. A higher percentage of doctors aged >60 no longer worked in the medical field compared to those younger (5.4% vs. 0.7%). However, nearly 95% of those over 60 years were still in medical service. This was much higher than a previous survey that less than 40% of primary healthcare services in the USA who were above 60 years old still work.[12] The difference in the upper age limit in medical practice is in many factors, such as the adequacy of the doctor compared to the population, competency, and financial and social status of the doctors themselves. For example, the age of 60 was a retirement age for civil servant officers in Thailand[13] in contrast to data from a systematic review which demonstrated that Western doctors were commonly retired between 60 and 69 years old.[14] Financial obligation was the most common reason for their delayed retirement. The intention of an individual may also contribute to their work life. In Thailand, 56% of doctors aged 55–59 in public health services in Bangkok were still willing to continue working after retirement.[15] We are not aware of mandatory age retirement in private practice. With a highly competitive private practice environment, high-competency doctors are required. Since older age, doctors had long periods of clinical practice, and more experience and competency rendered them to remain active professionally.

Our study comprised more female doctors (55%) which was consistent with data from the Human Resource Office of the Permanent Secretary System in Thailand which reported a 1:1.2 ratio of male per female doctors in public facilities.[16] For a

higher frequency of doctors in private practice, we postulated that the private practitioners might not have as expansive health coverage as the civil servant officers who usually have a Medical Benefits system,[17] so they tended to join this CSR project in a higher proportion.

Regarding the number of workplaces, the three significant features that were associated with >2 workplaces could be either a cause or an effect. Doctors working in public health units with lower income would lead them to have another workplace to supplement their income. However, working in >2 places would result in longer weekly work hours and higher monthly incomes.

Regarding the doctor's health habits, we disregarded caffeine or alcohol consumption due to the type and quantity with a degree of the health impact that we could not assess. Likewise, smoking habits reported in less than 1% were excluded from our analysis because we were aware that it might be under-reported. Smoking is a vice that most doctors who should be health leaders would rather keep confidential. For dietary fiber consumption, the results were compatible with the expectation that an older individual (higher life experience or indigestion) who exercises regularly (more conscientious about health) would also take a good quality diet (high fiber diet in particular).

In this study, around 26% of doctors experienced moderate to severe stress, especially young doctors and those who had less exercise. It is quite logical that younger doctors, who often have greater work responsibilities, would be more prone to stress. Additionally, the lack of regular exercise, which not only promotes physical health but also enhances mood and mental well-being through the secretion of endorphins,[18] was identified as another significant contributing factor to a higher degree of stress.

When we assembled weekly work hours, dietary fiber, exercise, stress, and sense of well-being to indicate lifestyle patterns, 70% were determined as having a healthy lifestyle. Other studies used various indicators to assess the healthy lifestyle of medical practitioners, such as stress, well-being, and mental health.[5,6] Although different in the target indicators, the studies reached similar conclusions. One study investigated the relationship between lifestyle and quality of life among primary healthcare practitioners in Saudi Arabia. Lower quality of life was found among doctors with obesity, unhealthy diets using butter and animal fat for cooking, and frequent eating out (>3 times/week) whereas those with a higher quality of life ate more vegetables and had a higher level of exercise.[6] Our study also demonstrated a significant association between a good diet and a better sense of well-being. The cause of this finding was not clear; we postulated that these doctors might be more health-conscious with a better diet and a healthier way of life. Differences among reports may lie not only in the characteristics of the doctors but also in the socio-environment and cultural background. Furthermore, stress, sense of well-being, and lifestyle were probably inter-related. Each should be explored in further study and modified for a healthy lifestyle.

Table 4: Weekly work hours according to characteristic features of the participating physicians								
Features (*n*)		*n*	Weekly work hour		OR (95% CI)	*P*	aOR (95% CI)	*P*
			<40 (*n*=391)	>40 (*n*=314)				
Personal features	Age, years (*n*=705) >60	98	77 (78.6)	21 (21.4)	1	<0.001	1	<0.001
	35-60	607	314 (51.7)	293 (48.3)	3.42 (2.06-5.69)		2.62 (1.47-4.66)	
	Gender (*n*=705) Female	380	224 (58.9)	156 (41.1)	1	0.044	1	0.019
	Male	325	167 (51.4)	158 (48.6)	1.36 (1.011–1.83)		1.53 (1.07–2.19)	
	Marital status (*n*=703) Married	445	263 (59.1)	182 (40.9)	1	0.011	1	0.025
	Single/divorced	258	127 (49.2)	131 (50.8)	1.49 (1.10–2.03)		1.52 (1.05–2.19)	
	Family income (Baht) (*n*=667) > 200,000 (> 5,730 USD)	384	190 (49.5)	194 (50.5)	1	<0.001	1	<0.001
	< 200,000 (<= 5,730 USD)	283	178 (62.9)	105 (37.1)	0.58 (0.42-0.79)		0.49 (0.34–0.70)	
Work habit	Primary workplace (*n*=635) Private	393	225 (57.3)	168 (42.7)	1	0.955	-	-
	Public	242	138 (57.0)	104 (43.0)	1.01 (0.73–1.40)		-	-
	Number of workplace (*n*=635) 1	544	334 (61.4)	210 (38.6)	1	<0.001	1	<0.001
	> 2	91	29 (31.9)	62 (68.1)	3.40 (2.12–5.45)		4.67 (2.71–8.04)	
Health habit	Dietary fiber (*n*=704) Minimal/low	137	71 (51.8)	66 (48.2)	1	0.339	-	-
	Moderate/high	567	320 (56.4)	247 (43.6)	0.83 (0.57–1.21)		-	-
	Exercise (*n*=685) > 3 days/week	144	97 (67.4)	47 (32.6)	1	<0.001	1	0.015
	0-2 days/week	541	282 (52.1)	259 (47.9)	1.90 (1.29–2.79)		1.72 (1.11–2.65)	
	Stress (*n*=685) No/mild	506	290 (57.3)	216 (42.7)	1	0.081	-	-
	Moderate/ severe	290	89 (49.7)	90 (50.3)	1.36 (0.97–1.91)		-	-
	Sense of well-being (*n*=704) Poor	327	185 (56.6)	142 (43.4)	1	0.648	-	-
	Good	377	206 (54.6)	171 (45.4)	1.08 (0.80–1.46)		-	-
	Lifestyle (*n*=664) Healthy	59	36 (61.0)	23 (39.0)	1	0.412	-	-
	Unhealthy	605	333 (55.0)	272 (45.0)	1.278 (0.74–2.21)		-	-
	History of health surveillance (*n*=703) Regular	498	271 (54.4)	227 (45.6)	1	0.358	-	-
	Irregular	205	120 (58.5)	85 (41.5)	0.85 (0.61–1.18)		-	-

OR, odds ratio; aOR, adjusted odds ratio

For the health surveillance practice, nearly 30% of doctors who did not have regular health check-ups were consistent with one survey study in the USA that 39% of doctors did not have regular health surveillance.[12] However, their study found the underlying reasons were a lack of time, difficulties accessing healthcare services, concerns about confidentiality, and lack of encouragement[12] whereas the most common reasons in this study were no availability/inconvenience or having no symptoms.

We also studied clinical features of the doctors who worked >40 hours per week, which is a standard weekly working hour in Thailand, because this longer duration of work might have an impact on one's life or being. Significant associated factors with >40 work hours were younger age, male gender, single/divorced marital status, higher family income, >2 workplaces, and less frequent exercise. The underlying reasons for the associations were quite plausible. Younger age and male gender work for longer hours because they are physically active or in the period of financial establishment especially being the family leader in Thai culture. However, those who were single may be more available with less family issues, so tended to dedicate more to their work. Likewise, doctors who worked >2 places should have

longer work hours and less available free time or be exhausted, so leading to less exercise, especially if they were not persevering with this healthy physical activity.

We were aware of some limitations of our study. Being a survey study, data from the electronic medical charts or direct responses of the doctors were incomplete such as alcohol or smoking behavior. Aside from the missing information, these personal data could not be verified. The values of each finding may vary by the nature of a survey study.

Nevertheless, the study had some strengths. This was the first study reporting the works and health habits of Thai doctors. Furthermore, the number of doctors who voluntarily participated was quite large. These data should somehow reflect the situation of work and health habits of Thai doctors. Some unfavorable features should be recognized by all stakeholders and be improved accordingly to maintain the health of doctors themselves.

Conclusion

Most Thai doctors who participated in our CSR project were still

active in medical practice. Most had weekly work hours within a standard practice of 40 hours. Slightly more than half were doing well financially. Mixed health habits of fiber diet, exercise, stress, and sense of well-being were demonstrated. Over two-thirds had a healthy lifestyle. Although most had at least one health coverage, irregular health surveillance was revealed in nearly 30% of the doctors. Regardless being the cause or the effect, the features that were significantly associated with working >40 hours should be recognized. Dissemination of these messages to the Thai doctors and the medical community is essential to promote the doctors' health, so they can serve as role models and maintain their leadership in health promotion to the public.

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