Original Article :

Chronic Health Conditions and Their Sociodemographic and Lifestyle Determinants Among Physicians in Qassim, Saudi Arabia

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Received on Jan 10, 2026, accepted for publication on Feb 17, 2026, dx.doi.org/10.5455/mjhs.2026.03.005

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Abstract

Background and Aims:
At least a quarter of adults in Saudi Arabia have a chronic health condition, but little is known about the health of physicians specifically. Among physicians working in Saudi Arabia, I assessed the rate of chronic conditions and identified any correlations with sociodemographic or lifestyle factors.

Methods:
Over 300 physicians from hospitals across the Qassim region of Saudi Arabia participated in this cross-sectional study. They completed a questionnaire that inquired about demographic characteristics, lifestyle choices (physical activity, smoking), sleep quality, and chronic health conditions. Descriptive statistics, chi-square tests, and logistic regression are presented.

Results:
Most (62.7%) of the 370 physicians were expatriates, a third coming from Egypt and Sudan. Men (68.1%), married individuals (71.9%), and those living with their families (76.2%) made up the majority of respondents. Specialists (39.2%) and residents (36.5%) were more common professional ranks than consultants (24.3%). The majority (65.8%) of physicians were active or very active, while only 10.5% were current smokers However, they reported suboptimal sleep, with 51.4% rating their sleep as fair and 20.8% rating it poor or terrible. The rates of chronic conditions were low overall; hypertension was 16.8%, asthma 7.8%, diabetes 5.1%, and heart disease was 3.0%..

Conclusion:
The majority of physicians in Qassim reported healthy lifestyle choices and a relatively low prevalence of chronic disease. However, given the high levels of occupational stress, long working hours, and inadequate sleep quality, targeted interventions could be instituted to improve physician well-being and sustain workforce performance.

Keywords:
Physicians in Saudi Arabia, Health and lifestyle analysis, Demographic characteristics, Work-life balance, Chronic health conditions

Introduction:

Physicians worldwide have varying levels of chronic health problems, both physical and mental (e.g., burnout). Risk factors of chronic disease, such as work-related demands/stress and unhealthy lifestyle practices, often reduce physicians' quality of life[1,2]. The prevalence of depersonalization, low sense of personal accomplishment, and emotional exhaustion have been reported as high as 89.9%, 87.1%, and 86.2%, respectively[3]. Healthcare Professionals, especially the physicians facing long working hours, extended duty shifts and high workload pressure, Studies have shown the physicians frequently work beyond the standard hours, with man experiencing shift work and on-calls that can extends to 24 hours or more[4].This work pattern has been associated with increased risk of chronic health conditions, including cardiovascular diseases, metabolic disorders and mental health issues[5,6]. The demanding nature of medical practice combined with irregular sleep patterns and limited time foe self-care, create a unique occupational risk profile for physcians[7]. Despite these risks, medical training often does not emphasize prevention or management of lifestyle-related diseases, and both physicians and the public often underestimate the burden of chronic conditions. There is generally insufficient awareness and recognition of these problems[8].

In Saudi Arabia, one out of four adults have at least one non-communicable disease[9,10]. Lifestyle-related chronic conditions, including cardiovascular disease, diabetes, and hypertension, are highly prevalent[9,11,12]. Clear risk factors for those diseases are low fruit and vegetable consumption, obesity, and lack of physical activity[1,13]. One hurdle to improving lifestyle choices in Saudi Arabia is the widespread reliance on self-medication and complementary medicine for chronic health problems instead of heeding advice from conventional medical professionals[14].

It is unclear if the worrisome health status of the general Saudi populace is also true among healthcare professionals, particularly in a region like Qassim, where evidence is limited. While previous research in Saudi Arabia has documented a high prevalence of overweight and obesity, poor sleep quality, and other chronic health conditions among physicians[15], how those correlate with sociodemographic and lifestyle factors has not been extensively explored.

This current study aimed to assess the prevalence of chronic conditions among physicians in the Qassim region of Saudi Arabia and to identify the sociodemographic and lifestyle factors associated with these conditions. This can provide critical insight for targeted interventions aimed at

improving physician health and sustaining quality healthcare delivery.

Methods:

Study Design and Setting:

TPhysicians working in various medical specialties in Qassim province, Saudi Arabia, participated in this cross-sectional study. The study compared self-reported chronic conditions among Saudi and non-Saudi physicians, including consultants, working in several hospitals: Al-Rass General Hospital (Al-Rass), Al-Qassim National Hospital, Buraidah Central Hospital, Dr. Sulaiman Al Habib Hospital (Buraidah), King Fahad Specialist Hospital, Maternity and Children Hospital (Buraidah), and Hayat National Hospital and King Saud Hospital (Unaizah). The questionnaire took participants approximately 15 to 20 minutes to complete.

Sample Size, Sampling, and Data Collection:

The sample size was calculated using Epi Info version 7.2 assuming a 95% confidence level, 50% expected prevalence and 5% margin of error resulting in a required sample size of 384 physicians.

Participating physicians came from a variety of specialties, including gynecology, internal medicine, intensive care, obstetrics, pediatrics, radiology, surgery, and other consultant-level positions. The sample was identified via convenience sampling as hospital employees may have limited time and availability[16]. Participants were recruited directly from the hospitals, and they were invited to complete the paper self-administered questionnaire if they were full-time employees within the chosen hospitals (inclusion criteria). Part-time physicians or those working outside the Qassim region were excluded.

Survey Instruments and Measurements:

The structured questionnaire collected data on self-reported chronic conditions, sociodemographics (age, nationality, gender, marital status, living conditions, and medical specialty), and lifestyle. Self-reported surveys have been validated for epidemiological research and are particularly useful when assessing behaviors and chronic disease prevalence[17,18]. The score for sleep quality (out of 10) was converted to the following categories: 0 was terrible. 1-3 was poor, 4-6 was fair, 7-9 was good, and 10 was excellent.

Self-Reported Chronic Diseases:

Participants reported the presence of the following chronic conditions: asthma, chronic bronchitis/emphysema (COPD), diabetes mellitus, eczema, heart disease, hypertension, and peptic ulcer disease. Follow-up questions included whether they had ever received a diagnosis of the condition by a physician, the duration of the illness, and whether they were currently

taking medication for the condition.

Major Lifestyle Risk Factors:

Participants were asked about their current smoking status and whether they had smoked at least 100 cigarettes in their lifetime. Those who answered "yes" to the question, "Do you currently smoke any tobacco products, such as cigarettes, cigars, or pipes?" were categorized as current smokers. Smoking assessment criteria were based on standardized epidemiological definitions used in global surveys[19].

Statistical Analysis:

Statistical Package for the Social Sciences (SPSS, version 25; IBM Corp., Armonk, NY, USA) was used for all statistical analyses. Descriptive statistics summarized means, medians, and standard deviations for continuous variables, and proportions for categorical variables. Comparative analyses between Saudi and non-Saudi physicians were conducted using chi-square tests and logistic regression. A p-value of ≤0.05 was considered statistically significant, consistent with established biomedical research practices[20].

Ethical Considerations:

The study was reviewed and approved by BLINDED FOR REVIEW and conformed to the ethical guidelines of the 1975 Declaration of Helsinki. Written informed consent was obtained from all participants before enrollment. Physicians were informed of their right to withdraw at any stage without penalty. All data were anonymized to ensure confidentiality and privacy in accordance with international ethical standards for human subject research[21].

Results:

Nationality Representation:

The workforce in Qassim, Saudi Arabia is diverse. Thirteen nationalities were represented in the sample, but the majority were Saudi (37.3%), Egyptian (23.2%), and Sudanese (13.0%). Mauritania contributed only one participant (0.3%) (Table 1).

Table 1: Distribution of the Sample by Nationality and Gender (n =370) .

Nationality	Gender		Total
	Men (n=253)	Women (n=117)	
Saudi Arabian	93 (67.4%)	45 (32.6%)	138 (37.3%)
Egyptian	62 (72.1%)	24 (27.9%)	86 (23.2%)
Sudanese	22 (45.8%)	26 (54.2%)	48 (13%)
Pakistani	26 (68.4%)	12 (31.6%)	38 (10.3%)

Yemeni	11 (91.7%)	1 (8.3%)	12 (3.2%)
Syrian	9 (81.8%)	2 (18.2%)	11 (3%)
Nigerian	10 (100%)	0 (0%)	10 (2.7%)
Indian	6 (75%)	2 (25%)	8 (2.2%)
Algerian	3 (42.9%)	4 (57.1%)	7 (1.9%)
Jordanian	4 (100%)	0 (0%)	4 (1.1%)
Palestinian	2 (66.7%)	1 (33.3%)	3 (0.8%)
Bangladeshi	2 (100%)	0 (0%)	2 (0.5%)
Lebanese	2 (100%)	0 (0%)	2 (0.5%)
Mauritanian	1 (100%)	0 (0%)	1 (0.3%)
Total	253 (68.4%)	117 (31.6%)	370 (100%)

Gender Distribution:

In the sample, 68.4% were men and 31.6% were women (Table 1). Men comprised most of the Egyptians (72.1%) and Saudis (67.4%), while among the Sudanese, there was a higher proportion of women (54.2%) than men (45.8%). In fact, there was a near gender balance among the Sudanese and Algerian physicians. Participants of other nationalities (Bangladeshi, Jordanian, Lebanese, Mauritanian, and Nigerian) were exclusively men (100%).

Marital Status and Living Conditions:

Most participants were married (71.9%), 27.6% were single, and 0.5% divorced. There was a significant association between marital status and nationality (p=0.001). Most respondents (76.2%) lived with their families, 23.2% lived alone, and only 0.5% lived with colleagues (Table 2).

Table 2: Demographic Characteristics of Participants in the Sample (n=370).

Demographic feature	Statistical values	
	Frequency	Percentage %
Gender		
Men	253	68.4
Women	117	31.9
Marital status		
Single	102	27.6
Married	266	71.9
Divorced	2	0.5
Current living condition		
Alone	86	23.2

With coworkers	2	0.5
With family	282	76.2
Current position		
Consultant	90	24.3
Resident	135	36.5
Specialist	145	39.2
Secondary jobs		
No	357	96.5
Yes	13	3.5
Physical activity		
Highly active	50	13.6
Active	193	52.2
Neither inactive nor active	95	25.7
Inactive	28	7.6
Highly inactive	4	1

Professional Roles and Secondary Employment:

Specialists (39.2%) were the most common, followed by residents (36.5%) and consultants (24.3%). Only 3.5% reported holding secondary jobs.

Physical Activity:

Only 7.6% of participants classified themselves as physically inactive; most were moderately active, active, or highly active (25.7%, 52.2%, and 13.6%, respectively) (Table 3).

Table 3: Relationship Between Physical Activity and the Nationality of Participants (n=370).

Physical activity level	Saudis (%) (n=138)	Non-Saudi Nationalities (%) (n=232)	Total (%)
Highly active	13.0	13.8	13.5
Active	37.7	60.8	52.3
Neither inactive nor active	34.1	20.7	25.7
Inactive	13.0	4.3	7.6
Highly inactive	2.2	0.4	0.8

There was a significant association between physical activity and nationality (p=0.001). A higher proportion of Saudi physicians were inactive compared to expatriate physicians.

Smoking Habits and Chronic Conditions:

Most participants were non-smokers (80.8%), with 10.5% being current smokers, and 8.6% past smokers (Fig. 1). Only 16.5% reported smoking at least 100 cigarettes in their lifetime. Regarding chronic conditions, 16.8% had hypertension, 5.1% diabetes, 3.0% heart disease, 7.8% asthma, 5.1% peptic ulcer, and 4.1% had eczema, while no respondents reported COPD (Table 4).

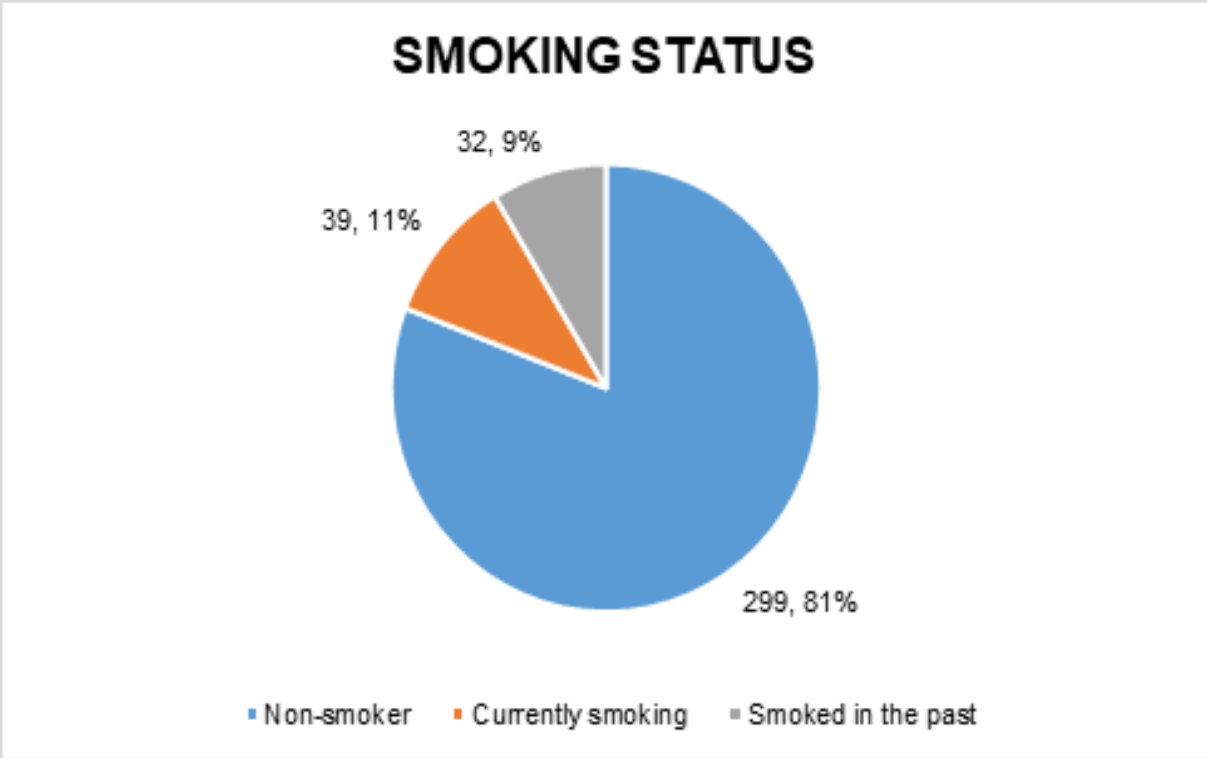


Figure1: Distribution of the Sample by Smoking Status (n =370).

Table 4: Self-reported Chronic Conditions and Medication Use Among the Sample (n=370).

Condition / Medication Use	Statistical value			
	Frequency		Percent %	
	Yes	No	Yes	No
Told by doctor that you have high blood pressure (hypertension)	62	308	16.8	83.2
Currently use medication for high blood pressure hypertension	44	18	71	29
Told by a doctor that you have diabetes	19	351	5.1	94.9
Currently use medication for diabetes	12	7	63.2	36.8
Told by a doctor that you have heart disease	11	359	3.0	97.0
Currently use medication for heart disease	5	6	45.5	54.5
Told by a doctor that you have asthma	29	341	7.8	92.2
Currently use medication for asthma	14	15	48.2	51.8
Told by a doctor that you have chronic bronchitis/emphysema (COPD)	0	370	0	100
Currently use medication for chronic bronchitis/emphysema (COPD)	0	370	0	100
Told by a doctor that you have peptic ulcer	19	351	5.1	94.9
Currently use medication for peptic ulcer	14	5	73.7	26.3
Told by a doctor that you have eczema	15	355	4.1	95.9
Currently use medication for eczema	6	9	40	60
Told by a doctor that you have other health problems	33	337	8.9	91.1
Currently use medication for other health problems	16	17	48.5	51.5

Sleep Quality:

More than half (51.4%) of the participants reported fair sleep quality, 24.6% had good, 18.6% had poor, 3.2% had excellent, and 2.2% reported terrible sleep (Fig. 2).



Figure 2: Quality of Sleep in the Past Seven Days as Reported by the Participants (n=370).

Discussion:

Medical professionals from 13 different countries participated in this study, with less than half (37.3%) of the sample being from Saudi Arabia. The second largest group of participants came from Egypt (23.2%), followed by Sudan (13.0%). Mauritania had the lowest representation, contributing only one physician (0.3%). The sample represents professionals from Arab and non-Arab countries across Asia and Africa and is the result of Saudi Arabia's active recruitment policies that aim to diversify its healthcare workforce. Such diversity brings various perspectives and experience to clinical practice, which can improve the quality of care[22].

Certain nationalities showed a balanced gender distribution, while others were exclusively men or women. However, overall, men (68.1%) outnumbered women (31.9%). This is consistent with the gender imbalance that persists among physicians worldwide. Previous research has found that the medical field remains male-dominated, with the ingrained stereotype of women being less competent[23]. This distribution parallels other studies where workforce representation varied across specialties, with women being underrepresented in

surgical fields but more present in family and reproductive medicine[23,24].

Significant associations were found between nationality and marital status. Most physicians (71.9%) were married, 27.6% were single, and 0.5% were divorced. Professional demands, cultural practices, and career satisfaction strongly influence marital stability[25,26], and any of those effects could be present in the current sample. Divorce was rare in this cohort (0.5%), which aligns with earlier findings of lower divorce rates among healthcare professionals[27] despite the challenges introduced by divorce, such as psychological strain, loneliness, and healthcare costs[28–31]. Among medical professionals, burnout and occupational stress may contribute to marital breakdown[32]. Nonetheless, the relatively low divorce rate in this study suggests that family stability may be the priority of the physicians despite the challenges of their work. Only 23.2% of participants lived alone, while two physicians (0.5%) reported residing with colleagues. The majority of physicians living with their families (76.2%) may benefit from better health outcomes and reduced mortality risk compared to those who live alone[33–35]. As studies have shown, living in supportive environments makes one more resilient to occupational stress[36,37].

Specialists (39.2%) and residents (36.5%) constitute the largest portion of participants, with consultants representing 24%. Moonlighting was not common overall (3.5%), but Saudi doctors were significantly more likely to have secondary jobs (84.6%) than other nationalities. The trend of holding a secondary job has been linked to financial debt, job dissatisfaction, and systemic staffing shortages in healthcare settings[32]. While additional employment may supplement income, the resulting burnout is a concern and can affect patient safety and quality of care[38,39].

Most physicians (65.8%) were physically active, while 7.6% reported very limited physical activity. Physical activity levels varied across nationalities, with Saudi physicians more likely to report inactivity. Workload and time constraints are cited as barriers to regular exercise for many healthcare workers[40]. Importantly, physicians' own health behaviors strongly influence the way they counsel patients[41]. Physically active physicians are more likely to advise patients about exercise, and the advice is reinforced when a doctor models this healthy behavior[42].

Most respondents (80.8%) did not smoke; only 8.6% reported actively smoking, which is significantly lower than the rate among the general population. However, with its association with cardiovascular disease, respiratory illness, and reduced

professional performance, smoking remains an occupational health concern[32,43]. Studies reveal that most physicians are not formally educated on lifestyle modifications or preventive measures[44,45]. Incorporating lifestyle medicine into medical school curricula may improve both physician and patient outcomes[46].

Regarding chronic conditions, most physicians reported having none, and the prevalence of COPD, diabetes, heart disease, and peptic ulcer were very low overall. However, underreporting can be an issue with self-reported surveys, particularly for conditions such as diabetes, where up to 50% of cases may remain undiagnosed[47]. Undiagnosed diabetes has been linked to increased cardiovascular mortality and worse long-term outcomes[48]. The low prevalence of asthma and eczema in this study may explained by literature suggesting under diagnosis and misclassification of asthma in clinical settings[49,50].

More than half of the participants reported only fair sleep quality; just 3.2% rated it as excellent. Poor sleep quality has been strongly linked to occupational stress and long working hours in multiple studies of healthcare workers[51]. Physicians in the current study reported working between 4 and 18 hours per day, so their reports of impaired sleep quality are not surprising. Organizational support systems are needed to mitigate physician stress and fatigue[52].

Some limitations of this study should be considered. First, participants were selected using convenience sampling based on their availability rather than through random selection. This approach can introduce bias, as the sample may not accurately represent the broader population of physicians working in Saudi Arabia. This also limits the applicability of the results to a wider healthcare context. Second, the self-reported data on chronic conditions may include some inaccuracies. Participants may have underreported or overreported their health status because of various factors, such as social desirability bias or a lack of awareness about their health conditions. This can affect the validity of findings regarding the true prevalence of chronic conditions. Third, the questionnaire did not include an exhaustive list of chronic conditions, so significant health concerns affecting physicians, such as mental health disorders, may have been overlooked.

Conclusions:

This study provides a comprehensive assessment of the demographic characteristics, lifestyle habits, and health status of physicians in Qassim, Saudi Arabia. Qassim has a diverse workforce that is predominantly composed of expatriates, with notable representation from Egypt and Sudan. Most of the

physicians were men, married, and generally maintained a healthy lifestyle. They reported regular physical activity and low rates of smoking and chronic illnesses. However, a significant number had fair to poor sleep quality, which may reflect high stress and work demands. It is important that employers foster a better work-life balance to safeguard physicians' mental and physical well-being.

Acknowledgement

The author would like to thank all participants for their support and contributions to this study.

Conflict of interest: The author declares no conflict of interest related to this work.

Financial support: None.

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