

Socioeconomic Status and Health-Related Expenditure in Saudi Arabia: A Descriptive Study

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ABSTRACT

Introduction: Global economic, climate, and environmental changes are among the main factors affecting the health economies of developing and developed countries and they have a significant impact on the rate of individual and family expenditure on health services and adherence to a healthy lifestyle. Aside from the formal governmental reports, there is a lack of studies that focus on the rate of per capita and family spending on the individual's health; and studies that compare the consumption patterns and the rate of expenditure across Saudi regions.

Objectives: The study aims to describe the socio-economic status of the population in three major regions of the Kingdom of Saudi Arabia (Riyadh, Makkah, and Hail) in respect to the rates of health-related expenditure among the population of those three regions.

Method: The study utilized a descriptive research design where secondary data gathered by the General Authority for Statistics in KSA in the year 2018 was utilized according to the purpose of the study. Comparison between the data of the three region was highlighted and discussed.

Results: The findings revealed that the average expenditure of families on health services was very minimal (1.3%) across all three regions. When comparing household spending on health, all the three regions scored the same, with 1% of the average monthly household expenditure goes to health, making it one of the least consumed items among families in all three regions. However, health insurance coverage among Saudi citizens shows large discrepancies, with the highest coverage rate shown in Makkah region, followed by Riyadh region, and finally Hail region.

Conclusion: The transformation of the health care system in the Kingdom of Saudi Arabia must take into consideration the low trends on healthcare consumption among Saudi families and design policies that ensure that healthcare coverage include all households in different regions regardless of their socio-economic status.

Keywords: [Expenditure, Health, Saudi Arabia, Socioeconomic Status]

INTRODUCTION

The Kingdom of Saudi Arabia (KSA) is a high-income developing country with a huge geographic area of 2,149,690 square kilometers and a population of 31,742,308 people as estimated in 2018 (1). It has experienced rapid urbanization (in 2018, 86% of the total population was urban). Country breadth affects accessibility,

quality, and equity in the provision of health care services. Since the discovery of oil in the 1930s, the nomadic Bedouin traditions of Saudi Arabia have been replaced by a modern lifestyle similar to that of other highly developed countries and neighboring countries. Oil-derived wealth financed free public sector services, including health care, for all citizens (2). Oil now makes up more

than 90% of the country's exports and about 75% of government revenue; Therefore, price fluctuations of oil globally affect many sectors of life, including healthcare (3). As an example, the significant drop in oil prices just during two decades caused the per capita GDP of the Kingdom of Saudi Arabia to drop from \$ 14,000 in 1980 to \$ 7,830 in 2002 (4).

In addition, the Corona pandemic had negative effects on the economic situation in the Kingdom of Saudi Arabia, as on the whole gulf region, as economies fell to the lowest level as a result of the decline in the average price of a barrel of global crude oil and the price of oil fell to its lowest levels to reach unprecedented record levels during the last hundred years. This led to the decline of the Kingdom's exports of crude oil to the world and the reduction of the financial revenues earned from its export, which may negatively affect the economic level of the individual and have some negative outcomes on their health and well-being and on the rate of spending on health services (5).

Furthermore, health issues recently were the focus of families in the Kingdom of Saudi Arabia, as in other parts of the world, as a result of the outbreak of the Corona pandemic, which made the provision of health services a top priority for the Saudi government during the last two years. The spread of the epidemic in the Kingdom of Saudi Arabia has made families in Saudi Arabia focus on the importance of spending on their health and on strengthening immunity to fight diseases while reducing spending on some non-essential matters such as entertainment, travel and so on (6). The Corona pandemic, the frequent closures, the curfews and quarantine restrictions have directly led to a decline in the average per capita income in the Kingdom of Saudi Arabia as many foreigners and Saudis depend mainly on the daily income system and trade, which has been greatly affected as a result of these closures (7). Also, employees in companies and institutions were subjected to justifiable

pressure to reduce salaries, reduce expenses and lay off excess workers, which led to an increase in the financial burdens on the family for Saudis and non-Saudis (8).

BACKGROUND

Healthcare services in the Kingdom of Saudi Arabia are mainly provided through public, private, and other governmental sectors. The largest part of health care services in the Kingdom of Saudi Arabia are provided by the public health care sector through the Ministry of Health and its affiliated health clusters. The Ministry of Health, which is funded annually from the total government budget, is the main provider of public health care services, operating nearly 60% of hospitals and primary health care centers across the Kingdom, which puts a heavy burden on them since it constitutes a large part of the government budget (4). Recent years in the Kingdom have witnessed efforts to improve health care services, with a significant increase in the allocated budget, which ranges from 5.9% of the Kingdom's GDP in 2006 to 7.0% in 2014. The apparent success of the healthcare system in the Kingdom of Saudi Arabia could be attributed to this high level of funding (9).

Despite the significant resources that the Saudi government can currently allocate to the healthcare system, the system is under increasing pressure as a result of the unsustainable challenges facing the publicly funded healthcare systems, leading to rapid increases demand while resources remain limited (10). These challenges include rapid demographic changes, an aging population, an increase in sedentary and unhealthy lifestyles, rising costs, increasing the number of beneficiaries of the health system, changing disease patterns, and increasing chronic diseases and fatal epidemic diseases (11). The current situation appears to be unsustainable in the medium to long term, especially in the face of uncertainty about global oil prices and economic changes. Therefore, the future viability and sustainability of the current

healthcare financing system to continue providing health care services at its three levels to the growing population is questioned by both academics and international health organizations (12-15).

To reduce the financial burden, the government has implemented Compulsory Employment-Based Health Insurance system (CEBHI), which covers all private sector employees at the private health sector, and is mainly paid by employers. Some researchers have suggested expanding this insurance system to include all citizens, while others have suggested charging the citizens for this service (16). The government is also considering a shift towards an alternative national or social insurance-based system, which could provide a possible solution to some of the Kingdom's current healthcare financing challenges.

Public participation is believed to be vital to the success of healthcare reforms and should be taken into account when designing any healthcare financing system, but little is known about public preferences and support for healthcare reform in Saudi Arabia (4). Also, identifying the economic situation of the family in the Kingdom of Saudi Arabia, the means of spending their income, and the cost of health care services provided to them is one of the basic priorities, and it is also considered one of the international health standards that determine the extent of health and well-being in countries.

Aside from the official governmental reports, there are no studies conducted previously in the Kingdom of Saudi Arabia during the past ten years focusing on the rate of per capita and family expenditure in the Kingdom of Saudi Arabia, especially on health services; also there are no studies that have been conducted inside the Kingdom of Saudi Arabia to compare consumption patterns and the rate of spending and/or cost of healthcare services between different Saudi cities. Therefore, the purpose of the current study was to describe the socio-economic status of the population in three major regions of the Kingdom of Saudi

Arabia (Riyadh, Makkah, and Hail), in addition to comparing the rates of health-related expenditure among the population of those three regions.

There are two research questions that the researcher aims, through this study, to answer them, namely:

1. What is the socio-economic characteristics of the people of Saudi Arabia at the selected three regions.
2. Is there a difference among people of the three regions (Riyadh, Makkah, and Hail) in regard to the rates of health-related expenditure.

LITERATURE REVIEW

Academics and policymakers have studied the financial impact on families due to diseases and illnesses, and the rise in the cost of health-services consumption and out-of-pocket spending on healthcare in Saudi Arabia. There is now a paradigm shift away from considerations of efficiency in health care provision to equity: the idea of aligning health care costs with levels of household income or the payment-for-service system is rooted. This seems more appropriate for such health systems, especially in the Gulf countries, as the multiple indicators show that public and private health care fees impose significant financial burdens on families, as well as the case on the state without reaching the required health level. Hence, a critical reassessment of the health sector reforms that have prevailed in countries over the past two decades is very justified in light of the economic and health difficulties facing the entire region.

Health reforms in Saudi Arabia are the subject of great debate. Although the Kingdom of Saudi Arabia's status as a welfare state has allowed it to maintain a satisfactory level of health indicators compared to other developing countries during the last period, regardless of any economic deterioration over time, the demand for health care is increasing rapidly because the economic expansion causes changes in people's lifestyles and require

people to work more and experience higher levels of occupational stress. Population aging and growing chronic diseases are also major drivers of increased health care spending (18). The number of the elderly population (aged 60 years or over) is constantly increasing, and their health requirements are very expensive for the country's treasury. With this change comes additional health requirements for seniors with limited social security or extended family support.

Private financing accounts for 52% of total healthcare costs worldwide, of which 95% is out of pocket. Macroeconomic data from the World Health Organization (2010) for the period 1995-2011 also demonstrates that the percentage of the personal component in total healthcare expenditures ranged from 42% to 48% globally, with an average value of 45% (19). The lowest standard deviation of these percentages (1.81%) shows less variation in the out-of-pocket healthcare component of total healthcare expenditures, implying a significant burden on the household budget (20).

The government funds the main component of the health sector in the Kingdom of Saudi Arabia, which consists of the public health sector in all regions and cities. The Ministry of Health manages the public healthcare system through annual allocation of the budget. The majority of inpatient care and the total volume of preventive services and public health services are managed by the government sector (Ministry of Health). Although people initially contact public hospitals to obtain health services, they usually resort to the private sector for timely and better quality services, spending their own money for consultation, diagnosis, and medicines, or being partially covered by private medical insurance paid by the individual or employer (4). Those unable to afford costs of private healthcare providers in non-emergency situations should wait months for facilities and appointments to become available in public hospitals.

There is a sharp income gradient in the use of private hospitals, with the richest fifth of

people accounting for 45% of all admissions to the private sector, and admission to the public sector is equal to the poor in its distribution (21).

There are a number of determinants that affect out-of-pocket family healthcare expenditures. These vary greatly according to the developed or developing state of the country. The growth of public sector health spending is relatively higher in developed countries than in developing countries due to better financial situation, higher levels of government quality, stability and efficiency, and thus the household burden of personal spending does not change significantly due to supply-side factors. However, the literature on the determinants of spending on health care services for families in developed countries is not fully applicable to developing countries (22).

US studies show that determinants include family size, financial capabilities, and the level and types of health insurance. Using a survey of US consumers, it was found that personal spending is significantly related to household size, composition, and financial constraints. They have taken into consideration a variety of variables to control the demand side and supply side factors that influence this spending. Using the 1996 United States Medical Expenditure Commission survey, the researchers concluded that out-of-pocket expenditures increase with the number of chronic cases for the elderly and non-elderly, and the highest out-of-pocket expenditures are observed among uninsured and poor individuals (23).

A study from India showed that the main determinants include high burden of diseases, prevalence of chronic conditions among family members, inpatient care and childbirth. They have provided compelling evidence to prove that the size of these expenditures is greatly influenced by the size of the family and the people's livelihood (24).

Studies have also thoroughly investigated the effect of the elderly and the non-elderly on personal expenditures because the

elderly have different health requirements. According to a recent study, the monthly out-of-pocket healthcare spending in elderly households in India is much greater than in non-elderly households (25). Other African researchers investigated the relationship between spending and social indicators using a national Tanzanian household survey and found that increased age, female gender, obesity, and disability lead to higher spending for adult individuals (ages 18 to 59). For elderly Tanzanians (over 60 years of age), out-of-pocket expenses are higher among those with a functional disability and who use traditional treatment services (26). A number of studies have estimated the relationship between household income and personal spending on health care. However, there is no clear and direct relationship between them, as the relationship differs from country to country. In Germany, researchers found a positive relationship between the two variables. The same results were found in Turkey, with convincing evidence from the Satori sample selection approach applied to the Turkish Family Budget Surveys from 2003 to 2008 (27). Because their study allowed for potential selection biases, their conclusion, that the likelihood of seeking health care in particular is relatively less for poor Turkish families. Another study found no significant correlation between household income and personal spending in Bulgaria (28). They argued that the burden of this spending is roughly the same between poor and rich families. Some studies conclude that personal expenses and income are negatively correlated. Despite increased spending on households across all income groups in Canada, households in the lower income quintiles tend to spend more than those in the richest income quintile in the country (29). In order to analyze the association between the burden of household's health expenditure and their respective income, some studies have used macroeconomic data. Using household spending and socio-economic surveys, a major comparative

study examined issues of equity in healthcare financing in thirteen Asian countries. Results show that out-of-pocket healthcare expenditures in high-income Asian countries are relatively proportional or declining. In low-income Asian economies, wealthy families spend relatively more out of pocket on health care and enjoy a greater range of services (30). Health care in many Asian countries depends on very limited financial resources, with the exception of countries such as Japan, Korea, Taiwan and Thailand. This imposes a greater financial burden on poor households in those countries due to out-of-pocket expenditures. This requires further research in individual countries by considering household income as one variable of importance (31). Therefore, we are particularly interested in exploring the income elasticity of the out-of-pocket healthcare burden in Saudi Arabia. The main purpose of the current study was to describe the socio-economic status of the population in three major regions of the Kingdom of Saudi Arabia (Riyadh, Makkah, and Hail), in addition to comparing the rates of health-related expenditure among the population of those three regions.

MATERIALS & METHODS

As the aim of the study was to describe the socio-economic status of the population in three major regions of the Kingdom of Saudi Arabia (Riyadh, Makkah, and Hail), and compare those trends with the expenditure on health services among their population; Thus, this study utilized data published by the General Authority for Statistics and presented them in a descriptive manner. No sample or sample size is identified as the data were census data collected in the year 2018, focusing on, among others, individual and family income in the Kingdom of Saudi Arabia, the rate of health insurance coverage, income expenditures, and the rates of spending on health aspects in the Kingdom of Saudi Arabia. Often, the method of enumeration (total population of interest) is usually used

in periodic national census, which mainly depends on methods of non-random data collection. Moreover, the target population of the current study is all the population (citizens and residents) who have been residing in the three geographical regions (Riyadh, Makkah, and Hail) during the time of data collection and public census in 2018. The study focused on three geographical areas in the kingdom, which are Riyadh region, Makkah region and Hail region. Riyadh region was included because it is one of the largest areas in the Kingdom in terms of area and population, and because it is the capital, with its large economic status, and Makkah region was also taken in the study due to the population diversity and the large number of foreigners working and residing in that city. As for the region of Hail, it was included in the study as the region of interest in which we can compare it with the other two regions.

Depending on the secondary data that was taken from the General Authority for Statistics in KSA, a number of tables and statistics covering multiple variables were used and modified to be in line with the objectives of the study. Data were presented in counts, percentages, and averages forms and analyzed by comparing these trends with each other.

Statistical Analysis

There were no complicated statistical processes in the study for comparing the three regions in each of the domains or to determine the relationships between the variables using advanced correlation techniques. Instead, a direct comparison between the trends in the three regions using numbers and percentages for the variables of interest.

RESULT

Table 1 below reveals the average monthly income of families in the three regions. The average family income in Riyadh region was the highest among the three regions for both Saudi and non-Saudi families, followed by those in Makkah region, while the average family income in Hail region was

the lowest among the three regions. Also, the average Saudi family income was higher than that for non-Saudi family in all three regions (Riyadh, Makkah, and Hail).

Table 1: Average monthly income of families according to the region

Administrative area	Saudi	non-Saudi
Riyadh	17,856	13,893
Makkah	15,918	12,099
Hail	12,459	10,160
Total Average SAR	15,411	12,051

Likewise, in terms of average family expenditure in the three regions, families residing in Riyadh region were the highest among the three regions, while the average household expenditure in Hail region is the lowest among the three regions, and it appears that the average non-Saudi family's monthly expenditure is lower than that of the Saudi family in all three regions respectively (Riyadh, Makkah, Hail) (see Table 2).

Table 2: Average monthly expenditures of families according to the region

Administrative Area	Saudi	non-Saudi
Riyadh	16,011	12,668
Makkah	14,648	11,584
Hail	11,571	9,701
Total	14,077	11,318

From the aspects of individual and household expenditures on major expenditure categories in the three regions, Table 3 shows that the highest average monthly spending was on housing, water, electricity and gas for the individual and for the family. While the rate and average of spending was the lowest possible on tobacco for the individual and the family alike. With regard to spending on health, the average expenditure of a household and an individual did not exceed 1.3% of the monthly expenditures for each.

It is clear from Table 4 that the highest average expenditure among families in the three regions was on housing, water, electricity and gas, and the highest was among families in Hail region relative to those in the other three regions. While the category with the lowest average

expenditures, household spending in Riyadh and Makkah regions was the least on smoking and tobacco, where spending on education was the lowest among families in Hail region. As for health, it was shown that

percentage wise, families in all three regions scored the same, with 1% of the average monthly household expenditure goes to health, making it one of the least consumed items among families in all three regions.

Table 3: Average expenditures of families and individuals on different items and categories in the three regions

Major Expenditure Group	Family's expenditures		Expenditures of individual person	
	Average of Expenditure	Percentage %	Average of Expenditure	Percentage %
Food And Beverages	2,411	16.7	506	18.9
Tobacco	60	0.4	13	0.5
Fabric, Apparel and Footwear	546	3.8	112	4.2
Housing, Water, Electricity, Gas Fuels,	3,303	22.9	590	22.0
Furniture and Furnishings	919	6.3	164	6.1
Health	196	1.3	35	1.3
Transport	1,762	12.2	335	12.4
Communications	742	5.1	152	5.7
Recreation and Culture	410	2.8	75	2.8
Education	347	2.4	72	2.7
Restaurants and Hotels	691	4.8	132	4.9
Miscellaneous Personal Goods and Services	3,086	21.2	504	18.6
Total	14,472	100.0	2,689	100.0

Table 4: Comparison of the average expenditures of families on different items and categories in three regions

Major Expenditure Group	Riyadh		Makkah		Hail	
	Average of Expenditure	Percentage %	Average of Expenditure	Percentage %	Average of Expenditure	Percentage %
Food And Beverages	2,638	16.62	2,560	18	2,286	20
Tobacco	49	0	50	0	48	0
Fabric, Apparel and Footwear	527	3	556	4	640	6
Housing, Water, Electricity, Gas, Fuels	3,829	24	3,056	22	2,885	26
Furniture and Furnishings	1,128	7	842	6	818	7
Health	238	1	193	1	124	1
Transport	2,024	13	1,606	11	1,293	11
Communications	859	5	756	5	538	5
Recreation and Culture	437	3	368	3	322	3
Education	390	2	346	2	27	0
Restaurants and Hotels	699	4	718	5	433	4
Miscellaneous Personal Goods and Services	3,057	19	2,959	21	1,896	17
Total	15,875	100	14,008	100	11,309	100

As for health insurance coverage, the trends seem to vary between the three regions. Although the difference was not wide, the highest coverage rate in private insurance for non-Saudis was in Hail region, followed by Makkah region, while the lowest coverage rate was in Riyadh region. However, health insurance coverage among Saudi citizens shows large discrepancies, with the highest coverage rate shown in Makkah region, followed by Riyadh region, and finally Hail region. It is also evident that the coverage rate in the private insurance system was significantly higher among non-Saudis compared to Saudis in the three regions. (see Table 5).

Table 5: Percentage of Population who are Covered by Private Health Insurance System by Administrative Region and Nationality

Administrative Area	Non - Saudi	Saudi	Total
Riyadh	79.2%	16.0%	43.7%
Makkah	80.0%	21.0%	49.2%
Hail	86.2%	2.5%	22.2%
Total	78.7%	13.1%	37.6%

DISCUSSION

The results showed that the average household expenditure in Riyadh region was the highest among other regions, followed by Makkah region, then Hail region. The average monthly salary and income was the highest in Riyadh region, followed by Makkah region, then Hail region, and this spending is proportional to the average income. Also, Riyadh region is the capital

of the Kingdom of Saudi Arabia and it is the most expensive to live among the regions. Therefore, the rate of household spending in it was the highest among the three regions. These findings coincide with the results of an analytic study carried out in Saudi Arabia in 2020 and mainly reflected a similar result (32).

The average household expenditure in the three regions was the highest on housing, water, electricity, and gas. This illustrates that this category of expenditures is the highest in the three regions in the Kingdom of Saudi Arabia among other life expenditures. Also, the rate of expenditure on health was very low in the three regions, and this indicates that spending on health services did not constitute a burden on families in the Kingdom. These results are consistent with a study conducted in the Kingdom of Saudi Arabia in 2008, which studied the average household spending on health care, and concluded results similar to the results of this study (3). The low rate of household expenditure on health services is often due to the fact that Saudi citizens have free access to healthcare services covered by the governmental health system, and all foreigners and workers in the Kingdom are obligated to participate in the health insurance system, either individually or through their employers.

Although the average household expenditure in the three regions on housing, water, electricity, and gas was the highest, and although Riyadh is the most expensive city in housing and services being the administrative and economic capital, the rate of household expenditure on that side was the highest in Hail region compared to other regions, and this high expenditure rate is mostly due to the fact that the expenditure rate is considered high compared to the average income of the families in Hail region which is considered the lowest among the three regions. These results were confirmed by the report published by the General Authority for Statistics in the Kingdom of Saudi Arabia for the year 2018

concerning the Household Income and Expenditure Survey (33).

With regard to participation in the private health insurance system, the coverage of Saudis in the private health insurance system in Makkah region was the highest among the three geographical regions, followed by Riyadh region, then Hail region, as the percentage of Saudis registered in the private health insurance system in Hail region was the lowest among the regions. The results of this study were consistent with findings in a recent study conducted in the year 2020 that described the development of the private and public health insurance system in the Kingdom of Saudi Arabia by the World Health Organization (34). These findings may be due to the financial situation as participation in the private health insurance system is considered to be somewhat expensive, and health insurance in the government sector is available and free of charge to all Saudi citizens. However, this may indicate that the citizen's confidence in the government health care system is the highest in Hail region compared to that in the other three regions. It also appears that the rate of participation in the private health insurance system is significantly higher among non-Saudis compared to the Saudis due to the lack of coverage in the government health insurance system and their need to enroll in the private health insurance system individually or through their employers in the Kingdom as confirmed by Al-Hanawi et al (4).

The use of census data in this study is one of the major limitations to the credibility of the study, as the results will depend mainly on the data coming from that source. Unlike data from randomized sampling, the presence of different types of biases is more likely in census data. Moreover, the General Authority for Statistics did not elaborate enough on the collection methodology as most data were gathered using standardized registries and records that may neglect many important factors relevant to the study objective.

Future researchers are encouraged to conduct a similar study but with robust data collection methods and advanced analytical tools. The use of primary data coupled with other public statistics may enhance the results. Furthermore, the researcher recommends including all regions of the Kingdom of Saudi Arabia in future studies in order to ensure the reliability of the comparison among the regions and the generalization of results on the Kingdom of Saudi Arabia.

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