



# Overview of the Saudi National Mental Health Survey

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**Abstract****Objectives:** To present background information for the Saudi National Mental Health Survey (SNMHS) on the Saudi mental healthcare delivery system and previous epidemiological research on the prevalence and treatment of mental disorders in the Kingdom of Saudi Arabia (KSA).**Methods:** Archival information and the results of a literature review are presented.**Results:** KSA is the largest sovereign nation in the Middle East and the largest free market economy in the Middle East and North Africa. A national mental health policy has been in existence since 2006, but mental health spending still is less than in most other high-income countries. The Ministry of Health has recently begun developing a new healthcare system based on a patient-centered model of care that will integrate care of mental disorders with care of physical disorders. Previous epidemiological research on mental disorders in KSA has been limited, making the SNMHS important for policy planning purposes to obtain accurate estimates of prevalence, treatment, and barriers to treatment.**Conclusions:** The SNMHS will provide valuable information for policy planning purposes on the burden of untreated mental disorders in KSA and barriers to treatment.**KEYWORDS**

Saudi National Mental Health Survey (SNMHS), The Kingdom of Saudi Arabia (KSA), The Saudi mental healthcare delivery system, WHO World Mental Health (WMH) Survey Initiative

## 1 | INTRODUCTION

This special issue is devoted to disseminating the key findings of the Saudi National Mental Health Survey (SNMHS), the first comprehensive scientific survey of the population prevalence and correlates of common mental disorders in the Kingdom of Saudi Arabia (KSA). The SNMHS, which was conducted between 2011 and 2016, is a cross-sectional community-based, psychiatric epidemiological household survey of a nationally representative sample of Saudi citizens ages 15–65.

The SNMHS was carried out under the leadership of the King Salman Center for Disability Research, which worked in tandem with

several partners in the KSA, including the King Faisal Specialist Hospital and Research Centre, the Saudi Ministry of Health (MOH), King Saud University, the Ministry of Economy and Planning, and the General Authority for Statistics. The SNMHS was carried out as part of the World Health Organization (WHO) World Mental Health (WMH) Survey Initiative (Alonso, Chatterji, & He, 2013; Kessler & Üstün, 2008; Scott, de Jonge, Stein, & Kessler, 2018).

This overview paper begins by providing some background on the KSA, including basic demographic information as well as a description of the country's economy, which has been undergoing a series of rapid transformations over the past few decades. It then describes the

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KSA's mental health system and what is currently known about the mental health problems of the country's residents based on the fragmentary evidence available from previous surveys and other empirical studies. Finally, it gives the rationale and aims of the SNMHS.

## 2 | BACKGROUND ON THE KSA

The KSA is the largest sovereign nation in the Middle East, covering a geographical area of 2,149,790 km<sup>2</sup>, which is almost 4/5th of the Arabian Peninsula (Ministry of Education—KSA, 2019). The KSA is divided into 13 administrative regions. (Figure 1) Its total population is 33.4 million, of whom 20.7 million are Saudi citizens and the other 12.7 million are guest workers. Its population density is 17.1 persons/km<sup>2</sup> (Saudi eGovernment Portal, 2019). The vast majority of its residents (83.5%) live in urban areas (Statistical, Economic and Social Research and Training Centre for Islamic Countries, 2018). Arabic is the KSA's official language, but English is also spoken in most parts of the nation. The main ethnic group is Arab, and the main religion is Islam.

Of the entire Saudi population, 51% is male and 49% is female (General Authority for Statistics, 2018). The age distribution is much younger than in most other high-income countries, with 30% of the population below 14 years old, 19% 15–24 years old, 18% 25–34 years old, 19% 35–49 years old, and 14% 50 years old and above. Among the Saudi population of 15 years and above, 37% is unmarried, 58% married, 2% divorced, and 3% widowed (General Authority for Statistics, 2017).

Due to rapid socioeconomic changes over the past few decades, the KSA now ranks 36th on the list of the 189 countries included in the 2017 Human Development Index (HDI; United Nations Development Programme, 2019). The HDI assesses a country's socioeconomic development by looking at three key factors—its life expectancy at birth, mean years of schooling for adults 25 years and

over and expected years of schooling for children, and gross national income per capita. As a result of the modernization of the country's healthcare system, life expectancy in KSA has risen from 69 years in 1990 to 74.8 years today (Ministry of Health—KSA, 2018). The educational level of the Saudi population (15 years and above) is now distributed as follows; 13.4% have no education, 8.4% have completed only primary school, 15% intermediate, 39.5% secondary, 22.6% university, and 1.1% a post-BA degree. The illiteracy rate has fallen dramatically—from 60% in 1972 to 5.6% in 2018 (Bell, 2018). In the past few decades, the number of students enrolled in general education has also increased by nearly 400% (World Bank, 2020). The GDP per capita is 20,968 USD (Ministry of Health - KSA, 2017). The crime rate is 464.46/100,000 (Ministry of Interior—KSA, 2017).

The KSA is the largest free market economy in the Middle East and North Africa, holding a 25% share of the total Arab Gross Domestic Product (GDP) and 25% of the oil reserves in the world (Saudi eGovernment Portal, 2017). According to the General Authority for Statistics, the GDP at constant prices is 2.5 million Saudi Riyals (approx. 684,102 USD). The average monthly wage of Saudi employees is 10,238 Saudi Riyals (approx. 1,953 USD; General Authority for Statistics, 2019).

The KSA maps out its socioeconomic policies and programs within a framework of comprehensive 5-year national development plans (Saudi Vision 2030, 2019a). Over the past few decades, these development plans have led to significant macroeconomic growth. This transformation was driven by a substantial increase in oil export revenues and the concurrent use of the wealth generated from the Kingdom's natural resources to fund social and economic development. Saudi Arabia's real GDP increased by about 93% between 1980 and 2018 (World Bank, 2019). Over this period, the KSA, which has been a member of the G20 since the group's formation in 1999, has completed its evolution from a subsistence economy to a modern economy characterized by increasing income diversification and expanding regional and international economic integration.

Saudi Arabia currently ranks as the 29th most complex country in the Economic Complexity Index (ECI)—a jump of 16 places since 1990 (Observatory of Economic Complexity, 2019). The ECI, which measures the knowledge intensity of a country's exports, is seen by experts as an excellent predictor of a country's future economic growth. In addition to a sharp rise in its GDP, the country has also benefitted from increased foreign investment and a more robust private sector. Over the past decade, one of the KSA's foremost economic initiatives has been the ambitious effort to transform Aramco, the Saudi Arabian national petroleum and natural gas company, from an oil-producing company to a global industrial conglomerate. As Saudi Arabia has been moving its economy away from oil-dependence, it has also increased efforts to enable women to play a more significant role in society. Since 1990, the Saudi female labor participation rate has increased by 62% and is expected to continue growing steadily (World Bank, 2020).

Despite this string of recent economic achievements, the KSA currently faces several major challenges, such as the need to diversify its economy and to meet the aspirations of a young and growing



**FIGURE 1** The Kingdom of Saudi Arabia—administrative regions

population. About two-thirds of employed Saudis still hold government jobs, and public sector wages are on average 1.7 times higher than private sector wages. Likewise, in 2016, wages to government workers comprised 45% of all government spending. To meet its long-term economic goals, in April 2016 Saudi Arabia embarked on a broad set of socioeconomic reforms called "Vision 2030" (Council of Economic and Development Affairs, 2019).

### 3 | THE SAUDI MENTAL HEALTH SYSTEM

In 2006, the KSA established a national mental health policy, which included specialty programs for patients suffering from drug and alcohol addiction as well as for children, adolescents, and the elderly along with consultation-liaison services in general medical settings (Carlisle, 2018). In 2014, a mental health law was passed, adopting several recommendations promoted by the WHO in the United Nations Principles for the Protection of Persons with Mental Illness and the Improvement of Mental Health Care (Office of the United Nations High Commissioner for Human Rights, 1991). However, important changes still need to be made, given that the legislation does not sufficiently meet the international standards of patient capacity and has not established an independent review body (Carlisle, 2018).

Qureshi, Al-Habeeb and Koenig (2013) provided the first systematic published review of Saudi Arabia's mental health system. Their study, which relied on the WHO Assessment for Mental Health Systems, collected data from Saudi Arabia's Ministry of Health in 2009 and 2010. They noted that Saudi mental health legislation by that time had already achieved several key milestones, such as devoting 4% of total healthcare spending to mental disorders compared to an average of less than 2% worldwide, but even this lags behind other high-income countries, where a median 6% of total healthcare spending is devoted to mental disorders (World Health Organization, 2018a).

More recent WHO data (for the year 2016) provide a richer portrait of the KSA mental healthcare system (World Health Organization, 2018a, 2018b). The number of mental health professionals is 19.4 per 100,000 population (World Health Organization, 2018b; Table 1). This is higher than the global average of 6.6 per 100,000 but is much lower than the median rate among high-income countries of 64.3 per 100,000 (World Health Organization, 2018a). The proportion of mental health workers who are psychiatrists is also quite low in KSA (7%) compared both to the average around the world (20%) and in all high-income countries (20%). The proportion of mental health professionals who are psychiatric nurses, in comparison, is virtually the same in KSA (55%) as in the world overall (53%) but much higher than in all high-income countries (37%; World Health Organization, 2018a, 2018b).

Another important feature of the KSA mental healthcare system is that the proportion of all mental health spending devoted to treatment in mental hospitals (78%) is more comparable to the proportional allocation in low-income (100%) than high-income (44%) countries (Qureshi, Al-Habeeb, & Koenig, 2013; World Health Organization, 2018a). Based on this allocation, the 0.35:1 ratio of number of hospital beds for psychiatric patients in KSA (18.4/100,000 population) compared to all high-income countries (52.6/100,000 population; World Health Organization, 2018a, 2018b; Table 2) is higher than the ratio of outpatient mental health visits (0.21:1), a finding consistent with the much higher proportional allocation of mental health treatment resources to inpatient services in KSA. It is also noteworthy that the average number of psychiatric beds per facility in KSA (167) is higher than the average across all high-income countries (44), which means that beds are concentrated in a comparatively small number of large facilities in KSA versus a large number of small facilities across all high-income countries (World Health Organization Regional Office for the Eastern Mediterranean, 2019; World Health Organization, 2018a). Length of stay among KSA psychiatric inpatients is comparable to other high-income countries: 85.6% less than 1 year (compared to 81% across all high-income countries), 7.5%

**TABLE 1** Mental health professionals per 100,000 population (World Health Organization, 2018a; World Health Organization Regional Office for the Eastern Mediterranean, 2019; World Health Organization Regional Office for Europe, 2019)

	KSA	WHO region			World Bank income group	
		EMR	EUR	Global	Low	High
Psychiatrists <sup>a</sup>	1.3	1.2	10.5	1.3	<0.1	13.1
Other specialist doctors	1.4	0.2	1.4	<0.1	-	1.5
Mental health nurses	10.7	3.0	23.2	3.5	0.3	23.5
Psychologists	2.0	0.8	4.6	0.9	<0.1	9.0
Social workers	4.0	0.5	0.8	0.3	<0.1	2.6
Other mental health workers <sup>b</sup>	-	<0.1	12.2	0.5	<.01	14.6
Total	19.4	5.7	52.7	6.6	0.5	64.3

Abbreviations: EMR, WHO Eastern Mediterranean Region; EUR, WHO European Region; KSA, Kingdom of Saudi Arabia; WHO, World Health Organization.

<sup>a</sup>Includes child psychiatrists.

<sup>b</sup>Other mental health workers includes occupational therapists, speech therapists, and any other paid mental health workers.

	KSA	WHO region			World Bank income group	
		EMR	EUR	Global	Low	High
<b>I. Mental hospitals</b>						
Facilities	0.08	0.03	0.15	0.06	0.01	0.17
Beds	17.1	4.0	34.2	11.3	1.6	31.1
Admissions	78.7	21.2	89.6	56.3	8.6	163.2
<b>II. Psychiatric units in general hospitals</b>						
Facilities	0.01	0.03	0.31	0.13	0.03	0.40
Beds	0.3	0.4	12.3	2.0	0.4	13.1
Admissions	-	21.3	160.5	44.4	6.9	156.9
<b>III. Other inpatient units</b>						
Facilities	0.02	0.04	0.24	0.03	0.06	0.63
Beds	1.0	0.7	13.2	3.1	-	8.4
Admissions	0.6	0.2	203.3	1.6	1.5	14.0

**TABLE 2** Inpatient mental health services per 100,000 population (World Health Organization, 2018a; World Health Organization Regional Office for the Eastern Mediterranean, 2019)

Abbreviations: EMR, WHO Eastern Mediterranean Region; EUR, WHO European Region; KSA, Kingdom of Saudi Arabia; WHO, World Health Organization.

**TABLE 3** Outpatient mental health services per 100,000 population (World Health Organization, 2018a; World Health Organization Regional Office for the Eastern Mediterranean, 2019)

	KSA	WHO region			World bank income group	
		EMR	EUR	Global	Low	High
<b>I. Hospital-based outpatient</b>						
Facilities	0.08	0.10	0.42	0.26	0.08	0.48
Visits	1,570	448	2,571	961	144	3,853
<b>II. Nonhospital/community based</b>						
Facilities	0.37	0.33	1.21	0.81	0.04	1.82
Visits	116	194	3,952	1,071	48	4,323

Abbreviations: EMR, WHO Eastern Mediterranean Region; EUR, WHO European Region; KSA, Kingdom of Saudi Arabia; WHO, World Health Organization.

1–5 years (compared to 14% across all high-income countries), and 6.9% more than 5 years (compared to 5% across all high-income countries; World Health Organization Regional Office for the Eastern Mediterranean, 2019; World Health Organization, 2018a).

We noted above that the ratio of outpatient mental health visits in KSA is 0.21:1 compared to all high-income countries. This ratio is based on 1,686 outpatient mental health visits per 100,000 in KSA compared to an average of 8,176 per 100,000 population across all high-income countries (World Health Organization, 2018a, 2018b; Table 3). It is noteworthy that 93% of these outpatient visits in KSA occur in hospital-based outpatient clinics compared to an average of 47% across all high-income countries. However, unlike the situation with inpatient facility size, the average of 3,747 outpatient visits per facility in KSA is comparable to the average of 3,555 across all high-income countries (World Health Organization, 2018a, 2018b). This summary statistic is deceptive, though, as 82% of all outpatient facilities in KSA are very small (314 visits per facility) and the remaining 18% of facilities are extremely large hospital-based outpatient clinics

that have an average of 19,625 visits per year (World Health Organization Regional Office for the Eastern Mediterranean, 2019; World Health Organization, 2018a). This compares to the 79% of outpatient facilities across all high-income countries having a much larger average size (2,375 visits per facility) than in KSA and the 21% of facilities that are hospital-based having a much smaller average size (8,027 visits per facility) than in KSA (World Health Organization Regional Office for the Eastern Mediterranean, 2019; World Health Organization, 2018a).

It is noteworthy that WHO recommends integrating mental health into primary healthcare as a way to increase access to care, reduce stigma for mental health patients and their families, improve social integration, and improve overall capacity of the healthcare system to deal with mental health problems (Greenhalgh, 2009). For this reason, mental health training is increasingly available to primary care doctors, general practitioners and postgraduates (Al-Habeeb, Helmi, & Qureshi, 2016). And community mental health services are increasingly being provided by primary care physicians (Koenig et al., 2014).

There are 2,361 primary healthcare centers in the country or 0.73 per 10,000 people (Ministry of Health—KSA, 2018). However, there is only limited availability of mental health services at these primary healthcare centers. Trained general practitioners treat only minor mental disorders by counseling. Continuous training is needed for mental health professionals to provide better quality services to mental health consumers (Al-Habeeb & Qureshi, 2010). Regardless, primary healthcare is associated with early detection of mental health cases and proper referral to secondary level based on the severity index and complexity of the problem (Al-Habeeb, Helmi, & Qureshi, 2016).

As part of the KSA's Vision 2030, the Ministry of Health (MOH) has begun developing a new healthcare system that aims to help people socially, mentally, and physically through a new patient-centered Model of Care (MoC; Saudi Vision 2030, 2019b). The MoC design is intended to ensure that the care delivered meets the specific needs of individual patients. The MoC consists of six patient-centered systems of care (SoCs): Keep me well, Chronic Care, Urgent Care, Planned Care, Safe Birth, and Last Phase. The Chronic Care system includes mental health. The MOH is currently developing a national mental health strategy for Vision 2030 with cross-sectorial stakeholder collaboration and involvement, ensuring it is aligned with MoC and health transformation principles of patient centricity and integration of services starting from the community level. The national strategy will attempt to address the gaps in the existing systems of care and to design services that can achieve quality, accessibility, and integration of care. Furthermore, the Saudi MOH recently established a "National Committee for Mental Health Promotion" to support the community. There are also a few NGOs in the country that are now working to spread awareness about mental health.

## 4 | PREVIOUS RESEARCH ON MENTAL HEALTH PROBLEMS IN THE KSA

Previous research on mental health problems in the KSA came from two primary sources: the Global Burden of Disease (GBD) Initiative run by the Institute of Health Metrics at the University of Washington (Memish et al., 2014); and small studies based on limited samples of patients in Saudi Arabia. According to the 2015 GBD study, drug use disorders, depressive disorders and anxiety disorders are the third, fourth, and sixth leading causes of disability in the KSA. But these findings are based solely on extrapolations using indirect information from 108 epidemiological surveys in other countries in the Eastern Mediterranean Region (EMR; Institute for Health Metrics and Evaluation, 2019). In fact, no large-scale epidemiological survey was ever carried out in the KSA to support these estimates. As a result, these estimates represent only approximations of the actual burdens of these particular disorders in the KSA.

Existing studies of psychiatric morbidity carried out in the KSA focused mainly on very specific populations with limited samples, such as patients in hospitals (AbuMadini & Rahim, 2002; Al-Khathami & Ogbeide, 2002; Chaleby, 1986, 1988; Qureshi, Al-Habeeb, Al-Ghamdy, Magzoub, & van der Molen, 2001; Qureshi, Al-Habeeb, Al-

Ghamdy, Magzoub, & Schmidt, 2001), primary healthcare centers (Al-Dabal, Koura, & Al-Sowielem, 2015; Al-Qadhi, Ur Rahman, Ferwana, & Abdulmajeed, 2014), faith healing settings (Alosaimi et al., 2014), or student populations (Aboalshamat, Hou, & Strodl, 2015; Al-Sughayr & Ferwana, 2012; Al Gelban, 2009; Raheel, 2015). There are also studies that consider regional community samples with findings limited to specific disorders such as major depressive disorder or substance abuse (AbuMadini, Rahim, Al-Zahrani, & Al-Johi, 2008).

The most useful studies for purposes of making inferences about population prevalence are those in broad population segments, such as students or primary care samples. But there is no consistent definition of disorders used in these studies and the range of estimates is large. For example, one study of adolescent students estimated that 16.3% of Saudi females suffer from psychological symptoms (Al Gelban, 2009), whereas another study based on a similar population estimated that the prevalence of mental disorders was 48% (Al-Sughayr & Ferwana, 2012). It is impossible to draw firm conclusions from such inconsistent results. We illustrate this problem by commenting briefly on four more focused lines of research on substance use disorder, suicidality, dementia, and domestic violence. All of these are assessed in the SNMHS.

### 4.1 | Substance use disorder

A conference paper presented by the Ministry of Interior over a decade ago reported that 1.1% of Saudis are taking drugs and that most of the addicts are young, ranging from 18 to 29 years old (Al-Mutairi, 2009). But this estimate was based on treatment data. Drug abuse is thought to be underestimated in Saudi Arabia given the cultural and social restrictions (United Nations Office on Drugs and Crime, 2010). As noted above, the GBD study estimated that drug use disorders are among the most burdensome of all disorders in KSA. Yet a recent WHO report stated that prevalence of substance use in KSA among adults 15–64 is 0.06% for opioids, 0.3% for cannabis, both of which are among the lowest in the Eastern Mediterranean Region (World Health Organization, 2017). The 0.4% estimated prevalence of using amphetamine-type stimulants, in comparison, was one of the highest in the Eastern Mediterranean Region. Most existing empirical studies focus on patients in treatment. A good example is a study of Saudi patients in addiction treatment settings, which reported that the most commonly abused substances are amphetamines (4–70.7%), heroin (6.6–83.6%), alcohol (9–70.3%), and cannabis (1–60%; Bassiony, 2013). Such data tell us nothing about the magnitude of the problem and proportional prevalence estimates with such wide ranges say more about the characteristics of clinical setting than the characteristics of people in the population with substance use disorders.

### 4.2 | Suicidality

A study conducted over a decade ago on suicide trends in a single city in KSA (Dammam) found a decrease in the suicide rate

between 2003 and 2007 and that most suicides occurred among non-Saudis (Al Madni, Kharosha, Zaki, & Murty, 2010). Official statistics issued by the Ministry of the Interior for the country as a whole, however, say that the number of suicide deaths between the years 1994 and 2006 increased by 185% and that the increase was comparable for men and women (Al-Hakim, 2010). But the inconsistency in the data is clear when one notes that the WHO 2014 report on suicide prevention said that the KSA age-standardized suicide rate in 2012 was 0.4 per 100,000 population per year (World Health Organization, 2014), whereas a 2017 WHO report puts the KSA suicide rate in 2016 at 3.4 per 100,000 (World Health Organization, 2018b). Although an order of magnitude different, both estimates are well below the worldwide average of 10.5 per 100,000 (World Health Organization, 2018a).

### 4.3 | Dementia and its impact on caregivers

Estimates suggest that dementia affects over 50,000 adults in the KSA, many of whom depend on family caregivers (Al-Khateeb, 2013). The caregiving experience, in turn, often adversely affects the caregiver's social life, financial status, and physical and mental wellbeing (Brodaty & Donkin, 2009). Khusaifan and El Keshky (2017) reported that the vast majority (79%) of these caregivers in KSA are women between the ages of 20 and 50. El-Nady (2012) found high rates of caregiver's emotional exhaustion and depersonalization and inverse associations of these characteristics with elderly safety. There is a suggestion that elder abuse is not uncommon, taking the forms of physical abuse, neglect, psychological abuse, financial exploitation, and violation of rights (Hildreth, Burke, & Glass, 2009). This abuse is associated with increased elder mortality and morbidity (Lachs, Williams, O'Brien, Pillemer, & Charlson, 1998; Perel-Levin, 2008).

### 4.4 | Domestic violence

Social problems that affect mental health, such as domestic violence, have rarely been studied in the KSA. A report from the United Nations found that almost four out of 10 women in the Arab States experience physical and/or sexual violence at some point in their lives (UN Women, 2018). Other forms of violence in the Arab States include early, forced, and/or temporary marriages and sexual harassment. In KSA, one regional study (Afifi, Al-Muhaideb, Hadish, Ismail, & Al-Qeamy, 2011) with a sample of married women found that the prevalence of lifetime domestic violence was 39.3% overall, including 17.9% for physical violence, 6.9% for sexual violence, and 35.9% for mental abuse.

## 5 | AIMS OF THE SNMHS

The above review of existing literature shows that little is known about the true prevalence or correlates of mental disorders in KSA. It is impossible to develop a national mental health plan without having

better information than this on basic facts regarding prevalence and correlates. The SNMHS is the first national study in the KSA to assess DSM-IV mental disorders in a representative sample of the Saudi population. The survey uses high quality standardized measures and field procedures established by the WHO in their World Mental Health (WMH) Survey Initiative (Kessler & Üstün, 2008). The main objectives of the SNMHS are: (a) to estimate the population prevalence of mental disorders in KSA, (b) to examine patterns of treatment among individuals with these disorders, (c) to estimate the societal costs of mental disorders in terms of a wide range of indicators of quality of life and role functioning. The SNMHS will also provide estimates based on caregiver reports of the prevalence of dementia in the household population and family caregiving burden. The study is also one of the few in the WMH Consortium to collect saliva samples from its respondents, which will be used to determine genetic risk factors for mental health conditions in the Saudi population.

It is our hope that the SNMHS will serve as a valuable resource for social and health policymakers in KSA. Furthermore, given that the survey will be carried out as part of the WMH Survey Initiative, the SNMHS data will provide a valuable point of comparison to the other high-income countries in WMH, the vast majority of which are in Europe, and add to a growing body of literature on local and regional mental health needs in the Arab world. Finally, we hope that the findings from this survey will both increase health promotion and reduce the stigma associated with mental health problems in KSA and elsewhere in the Arab world.

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### DECLARATION OF INTEREST STATEMENT

The authors declare no conflicts of interest.

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