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EDITORIAL NOTE

This is the first time that we have devoted a special issue of The Maghreb Review to health problems in the Maghreb, the Middle East and Africa. We intend to continue publishing original studies on this topic in the future. Therefore, we welcome papers in English or French from specialists

History has shown us that Mankind has always been the focus of the studies that are based on different perspectives of various scientific disciplines. Our attention in future issues is to draw attention to the degrees of success, and to the problems encountered by health planners in the Maghreb, the Middle East and Africa, and to produce ways of providing information for related research and health care in the future. Governments should as far as possible involve local communities and not just insurance companies, who see patients as customers.

We welcome original contributions on the following topics:

1. Religion: prohibitions of certain medical practices in Islam and other faiths, in particular, those such as human tissue in organ transplantation and cloning: (Ḥadīth, Fatwās, Qur'ān and Bible);
2. Sex: practices; Aids, policy and practice.
3. Economics: medicine: cost vs quality vs equity and safety.
4. Regulatory mechanisms, particularly in the import of medicines.
5. Humanitarian and Philanthropic contributions: We welcome original articles analysing the role of philanthropic organisations, particularly in Africa and other countries where the health systems have very limited national resources to deal with HIV/AIDS, tuberculosis, malaria, recent swine flu and other tropical diseases. This research should explain how such philanthropic resources have changed people's lives and whether their involvement has any political and financial influence on local or national politics.
6. Can the state cope with the growth of populations which live longer, while the cost of treatment is getting more and more expensive?
7. Earlier medical research by Muslims. The history of Muslim, Christian and Judaic medicine.
8. The treatment of cancer in the Maghreb, the Middle East and Africa.
9. The treatment of mental health in the Maghreb, the Middle East and Africa.
10. Issues of medical ethics and medical jurisprudence.
11. We are also interested in the subject of Medical Anthropology.

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HEALTH STATUS IN IRAN

BY PAYMAN SALAMATI,* MOJGAN KARBAKSH,* SAEED SADEGHIAN,* MANSOUREH TOGHA,* REZA ROTAMI,* MANELIE SADEGHI*

ABSTRACT

The Islamic Republic of Iran is a middle-income country. United Nations Development Programme (UNDP) data show that the Human Development Index (HDI) in Iran was 0.777 in 2008; this ranks Iran as the 84th country.

Based on WHO EMRO data, the main health indicators were as follows in Iran in 2004–5: the under-five mortality rate was 36 per 1,000 live births, the total fertility rate was 2.1 per cent, the adult literacy rate was 81.3 per cent, life expectancy at birth was 71 years and the DPT vaccination percentage was 95 per cent.

According to a WHO report, the leading health issues in Iran are: injuries, cardiovascular diseases, depression, substance abuse and cerebrovascular diseases. It seems that despite improvements in health, such as communicable disease control, vaccination and mother and child health care, chronic non-communicable diseases are becoming a threat to the Iranian population.

In this article, the author searched international and national sources of data using related keywords. The present health status of Iran is reviewed, followed by a discussion of the above-mentioned diseases in the country.

INTRODUCTION

Health as a multi-dimensional entity consists of not only physical but also cultural, psychosocial and economic aspects. Improvement of health-related indices is one of the most important of the Millennium Goals. The Islamic Republic of Iran is a middle-income country with a population of about 71 million, covering 1,648,000 sq. km, of which less than a quarter is arable land.^{1,2}

From the beginning of the Islamic revolution in 1979, Iran's Human Development Index (HDI) values increased to 0.777. As a result, Iran is now among the countries with a medium level of human development, being the 84th among 177 countries in 2008.^{3,4}

Regarding the health-related Millennium Development Goals, reducing the maternal mortality ratio (MMR), the infant mortality rate (IMR), the children under-five mortality rate and global immunization are the primary goals set by the WHO. According to the WHO report of 2000, the infant mortality rate in Iran is estimated to be 32 per 1,000 live births. EMRO reports show that the IMR had

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decreased to 24 in 2003. The under-five mortality rate has also been subject to a similar decline; it is estimated to be about 36 per 1,000 live births in 2004–5 and 33 per 1,000 live births in the period in the five-year period 2005–2010.^{4,5}

Establishment of modern methods of family planning, attendance of trained personnel during pregnancy and increase in women's educational levels have led to a dramatic reduction in MMR, according to WHO. The maternal mortality ratio in 2003 had declined to 28.2 per 100,000 live births.⁶

According to WHO and UNICEF estimates in 2004, 99 per cent of children under one year of age received three doses of the diphtheria, tetanus toxoid and pertussis vaccine (DTP). The coverage for measles and hepatitis vaccines is 96 per cent and 95 per cent respectively. This nearly complete coverage has led to an increase in life expectancy at birth and a marked decrease in the mortality rate due to communicable diseases. Based on WHO reports, life expectancy at birth is estimated to be 69 years in men and 73 years in women.⁷

Right now, smallpox and shistosomiasis have been eradicated; poliomyelitis, neonatal tetanus, rubella, diphtheria and measles are being controlled. However, other problems threaten the general health status in Iran. According to the data provided by WHO, the top five causes of health issues in Iran are non-communicable diseases: injuries, cardiovascular diseases, depression, substance abuse and cerebrovascular events.^{8,9}

This article aims to give a valid and up-to-date description of the status of these five biggest problems.

METHODS

In order to depict the health status in the Islamic Republic of Iran, several databases were searched with the following strategies. Ovid-Medline, Google Scholar, Cochrane Collaboration, Magiran, Iran Doc and SID (Iranian databases which index Persian published literature) search engines were searched using the following keywords and phrases: health status in Iran, PHC in Iran, burden of disease in Iran and DALY.

After determining the five chief problems, another search was performed in Ovid-Medline, Embase, Cochrane Collaboration, Iran Doc and SID, using the keywords cardiovascular disease, substance abuse, addiction, depression, injuries, trauma, road accident, mental health, stroke and cerebrovascular accident to get more detailed data. The author also searched Sina Trauma Databank and SafetyLit to get more data about the status of morbidity and mortality due to trauma and accidents.

INJURIES

About 14.6 per cent of all deaths in Iran are from injuries, accounting for 26.9 per cent of years of life lost (YLL), with an estimated death rate of about 58.0 per 100,000. Transport injuries are the most important cause of deaths from injuries, with a death rate of 30.0 per 100,000. This high death rate of road traffic crashes, although it started to decrease in 2006, has been attributed to the rapid

motorization of society, which surpasses the essential improvements in preventive environmental and behavioural modifications.¹⁰⁻¹³

In the Iraq–Iran war (1980–8) about 218,867 Iranians were martyred and about 398,587 sustained injuries that required prolonged health care.¹⁴⁻¹⁷ Explosions of implanted land mines in borders of the country have also been reported to have caused fatalities and injuries years after the war.¹⁸⁻²¹ Moreover, about 34,000 Iranians are known to have been exposed to a mustard agent during the Iran–Iraq war.²² These long-term effects of the exposure of civilians and soldiers to chemical weapons are reported in multiple papers.²³⁻²⁹

On 26 December 2003, an earthquake in Bam resulted in the deaths of about 36,000 Iranians and left 23,000 injured. There are several reports on injuries sustained in this disaster.³⁰⁻³⁴

Regarding other types of injuries in Iran, the death rate of all intentional injuries in Iran (about 10.1 per 100,000) is substantially lower than in many countries in the Eastern Mediterranean Region.¹¹ Suicide ranks as the fifth-leading cause of YLL, with a death rate of about 6.42 per 100,000.³⁵ About 27 per cent of suicide cases in Iran have been due to deliberate self-inflicted burns, with a death rate of about 1.74 per 100,000.³⁶⁻³⁹

In Iran, firearm injuries are not common as access to and ownership of weapons are limited by strict regulations. In a one-year study in Tehran, 89 firearm fatalities were referred to the Legal Medicine Organization of Iran in Tehran.⁴⁰

There are also reports on the prevalence of violence against women and the attitudes of society on this subject.⁴¹ Different prevalences were reported depending on the setting of the studies (health clinics, household survey, etc) and of the investigation. Two studies from different parts of the country showed this prevalence to be about 15 per cent during the preceding years,⁴²⁻⁴⁹ with some reports indicating higher percentages.⁵⁰⁻⁵²

CARDIOVASCULAR DISEASES

Due to improvements in public health and people's general economic status, the rate of acquired valvular rheumatic disease decreased in Iran during the past decade.⁵³ Nevertheless, the prevalence of CAD (coronary artery disease) increased steadily.^{54,55} The prevalence of CAD in Iran, based on electrocardiographic evidence or the Rose questionnaire, was 37.5 per cent in women and 22.2 per cent in men.⁵⁶ The Ministry of Health in Iran has estimated that CAD is responsible for 37.5 per cent of all deaths in Iran. Between 2001 and 2003, CAD mortality in Isfahan Province rose from 121.5 to 156.6 per 100,000 population.⁵⁷

In addition, the prevalence of CAD rose among patients younger than 50 years of age and the frequency of patients younger than 50 undergoing coronary bypass surgery is higher than that in reports of other communities.^{58,59} Despite a recent decline in developed countries, both CAD mortality and the prevalence of CAD risk factors continue to rise rapidly in developing countries.⁶⁰

A study on 3,000 Iranians revealed that the Iranian adult population is prone to a high level of CAD risk factors.⁶¹ There is a higher prevalence of hypertriglyceridaemia, low HDL cholesterol and physical inactivity, with a nearly equal or

slightly lower prevalence of hypercholesterolaemia in our community compared with some Western countries.⁶² The high prevalence of homocysteinemia⁶³ and metabolic syndrome⁶⁴ may also be responsible for the higher prevalence of CAD risk factors in the Iranian population. Meanwhile, some regional risk factors, for example opium, may play an important role in the increasing prevalence of CAD in Iran.⁶⁵ These observations clearly suggest a programme of aggressive management of patients at risk of CAD and implementation of a national project to control and reduce the risk of CAD in Iran should be initiated.

DEPRESSION

Studies conducted by the World Bank and WHO in the last two decades have shown that depression, because of its high and increasing prevalence and its associated disability,⁶⁶ is among the top three conditions with respect to the global burden of disease in both developed and developing countries, and it is expected to become the most burdening disease by the year 2020.⁶⁷

Haghdooost et al. showed a very wide heterogeneity in the prevalence of depression in the Iranian population, which could be explained mostly by the age group of studied subjects and the instruments that were used. The minimum and maximum reported prevalence was 19 per cent (among population-based studies using DSM-IV) and 19.3 per cent (among students using GHQ-28), respectively. In general, the reported prevalence in the elderly and women was greater than other groups.⁶⁸

The largest epidemiological survey of mental health in adults in Iran was conducted by Noorbala et al., with a cluster random sampling of 35,014 individuals using the 28-item version of the General Health Questionnaire. In this study the prevalence of mental disorder was estimated at 21.3 per cent in rural areas and 20.9 per cent in urban areas. Twenty-one per cent of the sample experienced depressive symptoms, 20.8 per cent anxiety symptoms, 17.9 per cent somatic symptoms and 14.2 per cent social dysfunction symptoms. Prevalence increased with age and was higher in unemployed and retired people. It was less prevalent in singles. The most common symptoms of depression, in addition to depressed mood, were somatic.⁶⁹

In another nationwide epidemiological survey of psychiatric disorders in terms of its lifetime prevalence in the adult population, Mohammadi et al. conducted research with a sample size of 25,180 persons across the country. The psychiatric disorders were diagnosed on the bases of the Diagnostic and Statistical Manual of Mental Disorders-IV criteria. The prevalence of psychiatric disorders was 10.81 per cent. It was more common among females than males (14.34% compared with 7.34%). The prevalence of anxiety and mood disorders was 8.35 per cent and 4.29 per cent respectively.⁷⁰

The considerable prevalence of depression in these studies shows the importance of planning for recognition and treatment. Concerning the current lack of sufficient epidemiological data on which to base risk factor intervention, the primary prevention of depression was not considered as a target of mental health programmes.⁷¹

According to the WHO mental health atlas published in 2005, 3 per cent of the total budget in the country is allocated to mental health issues. According to the same report, the number of mental health professionals per 100,000 population is as follows: psychiatrists, 1.9; psychiatric nurses, 0.5; psychologists, 2; and social workers, 0.6.⁷² The mental health programme of Iran has been integrated within the primary care system since 1980. This means that in addition to the mental health professionals, primary health care staffs are also responsible for providing basic mental health services.⁷³

Under-recognition of depression in primary care is a very important public health problem that imposes high societal costs related to disability, morbidity, mortality and excessive health care utilization.⁷⁵ It is therefore essential that primary care doctors are educated to recognize depression correctly; this will, in turn, improve the patients' chances of receiving appropriate treatment.^{74,75} But screening and recognition alone cannot improve the management and outcome of depression, because most of the patients whose depression was recognized did not receive appropriate treatment and were not followed up enough for a judgment of the adequacy of treatment.^{76,77} Several studies have shown that integrated management programmes for depression are more effective than usual care. Collaborative care, case management and stepped care underpinned by randomized evidence are promising candidates for integration into usual care.^{78,79}

For the following reasons, it seems that current primary care mental health services in Iran do not have enough capacity to implement such integrated programmes for the management of depression. First, there is poor coverage for urban populations specially in large cities. Second, there is a significant gap between the results of case-finding activities in covered areas and the officially reported prevalence of different mental disorders throughout the country. Third, the supervision implemented by mental health professionals is inadequate. Fourth, there is a lack of specific national programmes and funds for the recognition and treatment of depression. Among the necessary measures is a national integrated management programme for depression in order to make changes in the current mental health system in both quality and quantity, or alternatively, a new community mental health system should be developed especially for urban areas.

SUBSTANCE ABUSE

Obtaining a definite estimate of the prevalence and incidence of substance abuse in Iran is difficult. Social stigmatization along with legal restrictions on substance abuse prevents drug users from admitting their acts, offering clear data and referring to governmental sectors. In 1997, from 603,247 opioid urine tests performed in applicants for marriage as a premarital routine, 8,043 (1.34%) were positive. Opioid urine tests for job applicants and issuing driving licences revealed similar results: the figures were 1.58 per cent and 3.96 per cent, respectively. The total number of tests in 1997 exceeded 960,000, of which 2.39 per cent were positive.⁸⁰

In Iran there are also very many studies on the prevalence of addiction as one of the main psychiatric disorders among different groups of Iranian population.

The annual financial burden of opium addiction exceeds \$5 billion in Iran. One of the reasons for this high prevalence is the misconception among our people that opioids may prevent or have ameliorating effects on disease.⁸¹

Although the practice of smoking opium is not a novel issue and has been present in this country for centuries, it has currently turned into a malignant social phenomenon with widespread social, psychological, familial and economic calamity. Emergence of intravenous drug use along with the transmission of infectious diseases including HIV and HCV has added further to the burden.

In addition, substance use is one of the major concerns of mental health.⁷⁰

The prevention of addiction is a very important public health problem that involves high societal costs related to disability, morbidity, excessive healthcare utilization, the cost of financial problems, divorce, false family structures, loss of jobs, mental disorders such as depression and anxiety, personality disorders and also physical illnesses like cardiovascular disease and so on that are related to substance use disorders.⁸²⁻⁸⁷ It is therefore essential that primary care experts be educated to recognize any kind of substance usage in time, because this will improve the efficacy of treatment. After that, using different kinds of treatment plans, such as psychological, neurological and medical protocols, has an important role in decreasing this problem. The most important part is the follow-up programmes to reduce relapses in these patients.⁸⁸ Unfortunately it seems that current primary care mental health services in Iran have not enough capacity for actualizing and performing programmes that show the importance of planning more exactly.

CEREBROVASCULAR EVENTS

Stroke is the third-leading cause of death after cardiac problems and cancers all over the world. Furthermore, it is the major reason for permanent disability.⁸⁹ Compared with developed contraries, far fewer epidemiologic studies of stroke were conducted in Asian countries – except for Japan.⁹⁰ According to different local studies, the incidence of stroke in Iran is 33–43 per 100,000 people. The incidence rate is similar to Saudi Arabia and lower than Western countries and Japan, which is 130–140 per 100,000 people.^{91,92}

Of the strokes, 70 per cent and 25 per cent are ischemic and intra-cerebral hemorrhage respectively. Subarachnoid and intraventricular hemorrhage accounts for 5 per cent of strokes. The risk factors of brain infarction are heterogeneous. Hypertension, smoking, hyperlipidemia, diabetes mellitus and ischemic heart diseases are among the most frequent in different parts of the world. However, a proportional constituency of them is reported to have geographical variation.⁹³⁻⁹⁵ Hypertension is the most common risk factor for both ischemic stroke and intra-cerebral hemorrhage (ICH) in Iran. The frequency of hypertension among ischemic and ICH strokes is about 50–60 per cent and 67 per cent respectively. Moreover, according to one study in Iran, hypertension seems to be the most common risk factor for the recurrence of stroke.^{96,97} The mean age of stroke onset in different Iranian studies is between 61 and 65 years, without significant sex differentiation.^{89,91} In a review article including 15 population-based studies, the

mean age of onset was 69.8 and 74.8 in male and female patients respectively, which is higher than our society.⁹⁸ About 20 per cent of ischemic strokes in Iran have a cardio-embolic origin⁹⁹ which is similar to most of the other countries. However, compared with developed countries, rheumatic valvular disease (which can lead to cardiac emboli) is more common in Iran. Unlike developed countries where almost half of cardio-embolic strokes are secondary to non-valvular atrial fibrillation, rheumatic valvular disease constitutes 44 per cent of cardio-embolic strokes cases. This frequency is even higher in young people.^{100,101} The one-month mortality rate of stroke in Iran is around 30 per cent.¹⁰² In developed countries, 22.9 per cent of strokes are reported to be fatal.¹⁰¹ Elderly people and diabetic patients have higher death rates regardless of the type of stroke, and this is similar to other Asian and Western countries.^{90,94,96}

Stroke is an important cause of mortality and morbidity. Prevention of rheumatic cardiac diseases and hypertension, as the two main underlying factors of stroke, could be the first aim of public health policy-makers.

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