Tackling cancer control in the Gulf Cooperation Council Countries

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Cancer is a major health problem in both high income and middle-to-low income countries, and is the second leading cause of death in the world. Although more than a third of cancer could be prevented and another third could be cured if diagnosed early, it remains a huge challenge to health-care systems worldwide. Despite substantial improvements in health services some of the countries in the Gulf region, the burden of non-communicable diseases is a major threat, primarily due to the rapid socioeconomic shifts that have led to unfavourable changes in lifestyle such as increased tobacco use, decreased physical activity, and consumption of unhealthy food. In the Gulf Cooperation Council states (United Arab Emirates, Bahrain, Saudi Arabia, Oman, Qatar, and Kuwait), advanced breast cancer, colorectal cancer, leukaemia, thyroid cancer, and non-Hodgkin lymphomas are the most common cancers affecting younger populations compared with other countries. By contrast with cancer prevalence in developed countries, prostate, lung, and cervical cancers are not among the most common cancers in the Gulf region. In view of the increased cost of cancer management worldwide, integrated approaches between primary, secondary, and tertiary health-care systems with special focus on prevention and early detection is an essential step in the countries' efforts in the fight against cancer.

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Introduction

Cancer is a major health problem in both high income and low-to-middle-income countries, and is the second leading cause of death in the world. The global incidence of cancer in 2012 was 14 million.[1] The estimated number of new cases of cancer is expected to continue to rise by 3–4% every year, and more than 65% of this increase will occur in low-to-middle-income countries where health-care facilities and patient care are restricted.[1] In the WHO eastern Mediterranean region, the incidence of cancer is predicted to rise by 80% over the next decade. Although two-thirds of cancers could be prevented or cured if diagnosed early, cancer constitutes a profound challenge to health-care systems, patients and their families, and society as a whole. Therefore, combating cancer necessitates integration between primary, secondary, and tertiary medical care in all countries. People in the Gulf region have achieved rapid improvements in health care over the past 20 years, better control of communicable diseases, and have longer life expectancy. These improvements have happened alongside rapid socioeconomic changes that have modified the populations' lifestyles, such as increased tobacco use, decreased physical activity, and increased consumption of unhealthy food. In combination, all of these factors have likely influenced the prevalence of some types of cancer.[3]

In 1997, the Gulf Centre for Cancer Registration (GCCR) was established to provide cancer incidence data for nationals of the Gulf Cooperation Council (GCC; United Arab Emirates [UAE], Bahrain, Saudi Arabia, Oman, Qatar, and Kuwait) states. GCCR works under the jurisdiction of the executive office of the health ministers' council for GCC states. Raw data for cancer prevalence and population estimates are provided by each national cancer registry in the six GCC states. The primary objectives of the GCCR are to collect and classify information on all cancer cases to produce statistics on the occurrence in a defined population, to provide technical support for early detection and screening programmes, and to facilitate epidemiological studies to provide a framework for assessment and control. This initiative was the groundwork for the strategic plans (2004–09 and 2010–20) for cancer prevention and control in the GCC states. Furthermore, a framework comprising seven approaches and strategic actions has been developed to support member states in developing national action plans and implementation of cancer control activities.[4] These strategies are in line with the WHO global strategy for the prevention and control of non-communicable diseases (2008–13), and the WHO strategy against cancer through effective integration between primary, secondary, and tertiary prevention programmes, which aim to prevent preventable cancers, cure applicable cancers through early detection and management, and relieve pain and improve quality of life through palliative care services.

Incidence

From January, 1998, to December, 2009, 119 288 newly diagnosed cancer cases among nationals of the GCC states were reported by the six cancer registries to the GCCR. Of these, 58 629 patients (49·1%) were male and 60 659 (50·9%) were female. Most cases were reported from Saudi Arabia, followed by Oman, Kuwait, Bahrain, UAE, and Qatar (table 1).[4]

Direct age standardisation is a common method used to compare several populations that differ with respect to age structure. The calculated incidence is known as the world standardised incidence rate, which is usually expressed per 100 000 individuals. For a 12-year period (1998–2009), we calculated the age-standardised rate (ASR) by obtaining the age-specific rates and applying these rates to the standard world population for each age

	Male	Female	Total
Bahrain	2442 (4·2%)	2687 (4·4%)	5129 (4·3%)
Kuwait	3743 (6·4%)	4947 (8·2%)	8690 (7·3%)
Oman	5570 (9·5%)	5142 (8·5%)	10 712 (9·0)
Qatar	964 (1·6%)	1109 (1·8%)	2073 (1·7%)
Saudi Arabia	43 920 (74·9%)	44 557 (73·5%)	88 477 (74·2%)
UAE	1990 (3·4%)	2217 (3·7%)	4207 (3·5%)
Total	58 629 (100%)	60 659 (100%)	119 288 (100%)

UAE=United Arab Emirates.

***Table 1*: Cancer cases reported to Gulf Centre for Cancer Registration by nationality and sex, 1998–2009**

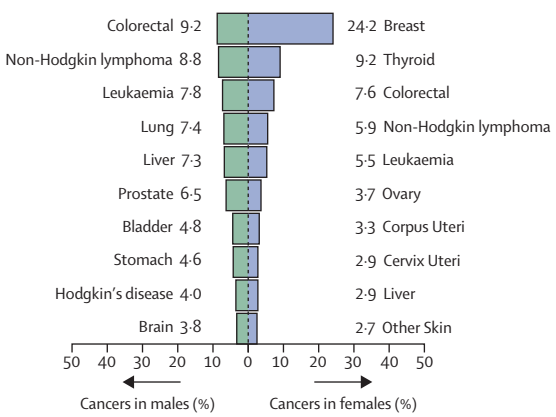

***Figure*: Most common cancers among GCC nationals, 1998–2009**
Data for 58 629 male patients and 60 659 female patients. Adapted from Salim and colleagues,[2] with permission.

group.[4] We used the SAS statistical package to generate the annual ASR and the mean annual ASR for all nationals of the GCC states. We calculated average annual ASR in the same way from the midpoint population (average of the total populations in 2003 and 2004) to obtain summary unbiased weighted cancer incidence rate for the 12 years from 1998–2009.[4]

The mean annual ASR for cancer incidence in the GCC states per 100 000 individuals was 82·9 for the period between 1998 and 2009. In the male population, colorectal cancer was the most common type of cancer at 9·2%, followed by non-Hodgkin lymphoma (8·8%), leukaemia (7·8%), lung (7·4%), and liver (7·3%). In the female population, breast cancer was the most common type of cancer, (24·2% of total cancers), followed by thyroid (9·2%), colorectal (7·6%), non-Hodgkin lymphoma (5·9%), and leukaemia (5·5%; figure). Overall, 48·5% of patients, both male and female, with cancer presented with advanced tumours (defined as either regional or distant metastasis) at the time of diagnosis.[4]

There is little published data on the incidence of cancer among expatriates in GCC states because most of the national registry data in the GCC countries only take into account GCC nationals.[5] However, the 2010 Saudi Arabian cancer registry reported 13 159 cases of cancer, of which 3188 cases (24·2%) were in non-Saudi Arabian nationals.[6] Breast, colorectal, skin, non-Hodgkin lymphoma, and leukaemia were the five most common cancers among expatriates.[6] The main difference was that skin cancer was ranked the second most common cancer among non-Saudi Arabian male individuals, after colorectal cancer, which represented 7·9% of the total number of cases. Similarly, cervical cancer (4·8%) ranked fourth in non-Saudi Arabian female individuals after breast, colorectal, and thyroid cancer.[6]

Breast and cervical cancer

The mean ASR for breast cancer was 20·4 cases per 100 000 women, and ranged between 16·9 per 100 000 in Saudi Arabia and 55·9 per 100 000 in Bahrain. Breast cancer incidence increased by 40% among GCC women during the 12-year period.[4] Although advanced breast cancer is less common in developed countries, most patients with breast cancer in the GCC states presented at late stage with 58·1% at either regional or distant metastasis. Moreover, GCC women appeared to develop breast cancer at a younger age compared with women in high income countries; in these countries, less than 5% of all breast cancer cases occur in women younger than 40 years, compared to 25·5% for women in the GCC states.[4] Similarly, cervical cancer was the fourth most common cancer affecting women worldwide,[1–10] but was ranked seventh for women in the GCC states, at 2·9% of all cancers.[4] These differences might be attributed to differences in environmental carcinogens, lifestyle, dietary habits, or cultural practices.[7]

Colorectal cancer

Globally, the ASR of colorectal cancer was 20·1 per 100 000 in men and 14·6 per 100 000 in women.[4] In high income countries, colorectal cancer ASR is 40·0 per 100 000 in men and 26·6 per 100 000 in women; in low to middle income countries, the rates are 10·2 per 100 000 and 7·7 per 100 000, respectively.[4] Several studies have shown a decreased incidence of colorectal cancer among Arab populations when compared with other world populations.[2] In spite of the low overall incidence of colon cancer in Arab countries, the Gulf countries show relatively high incidence in people younger than 40 years. In the GCC states, colorectal cancer was ranked as the second most common cancer with overall ASRs of 8·5 per 100 000 for men and 7·2 per 100 000 for women.[4] In men, the ASR ranged between 6·6 per 100 000 in Oman and 16·4 per 100 000 in Kuwait, and in women the ASR ranged between 5·3 per 100 000 in Oman and 18·7 per 100 000 in Qatar. The reported incidence continued to increase between 1998 and 2009 in both sexes, with the total number of newly diagnosed colorectal cancer cases increasing by 3·4-times in men and 2·1-times in women, with most colorectal cancer