The World Health Organization (WHO) Eastern Mediterranean region (EMR) includes all countries which stretch between India in the East and the Atlantic Ocean in the West, the Mediterranean Sea in the North and Sub-Saharan Africa in the South. This includes Morocco, Tunisia, Libya, Egypt, Sudan, Eritria, Ethiopia, Somalia, Syria, Jordan, Iraq, Kingdom of Saudi Arabia (KSA), Yemen, Oman, Bahrain, Qatar, Iran, Afghanistan and Pakistan. Algeria which should be in the region belongs to Africa!

Research is becoming an important industry, playing a major role in the development of different aspects of society. Medical research is of no exception. Countries that do not invest in research become extremely dependent on others. The objective of any research is to promote teamwork, to help the decision makers in future planning, to identify leadership in the society, to educate and to establish "research personality" amongst the professionals who think in an evidence-based manner rather than by impression or uncalculated speculation, resulting in better decision making. In the era of globalization, important medical research results in publications in different medical journals. Journals with a high impact factor are usually indexed by Index Medicus, which is governed by the National Library of Medicine, United States of America. Publications are available on the web through "Pubmed" which is instrumental in planning and performing research worldwide.

Publications from all countries of WHO-EMR in Pubmed were searched for 10 years, from 1 January 1992 to 31 December 2001. These were compared with the number of publications from developed and developing countries.

The results are shown in Figure 1. Countries with more than 1000 publications were KSA, Egypt, Pakistan and Sudan (Figure 1a). Other countries who had less than 1000 publications are shown in Figure 1b. Gulf countries, Jordan and Lebanon had more than 100 publications per million population (Figure 2a). Those countries which have less than 100 publications per million population are shown in Figure 2b.

This study has shown that the highest number of publications in the WHO-EMR are from KSA, Egypt, Pakistan and Sudan. However, if we consider publication adjusted to population, the highest are Kuwait, other Gulf countries, Jordan and Lebanon. Comparing this to developed countries the highest number of publications were those from Australia and the United Kingdom followed by the United States of America. The new European countries (previously Eastern European countries) are ahead of research in all countries within our region despite the lower income. These results are comparable to a report by Shaban and Abu-Zidan,¹ which showed that the highest number of publications in the Arab world are from KSA, Egypt and Kuwait. However, comparing publication in the Arab countries, which constitute the majority of the EMR, to population the highest were from gulf countries, Lebanon and Jordan, consistent with this study. Also, they indicated that if we compare publications to gross domestic product (GDP), Jordan, Egypt, Kuwait, Lebanon and Sudan are in the leading positions. Publication in the Arab countries is less than other developing countries such as Kenya, Sri Lanka, Nigeria and India, despite higher GDP. Although this data may have some pitfalls² because of the search strategy on pubmed, however, it definitely shows the
Figure 1 - Number of publications from different countries worldwide a) more than 1000 publications per country. b) less than 1000 publications per country.
Figure 2 - Number of publications per million population from different countries worldwide a) more than 100 per million population. b) less than 100 per million population.
trend of number of publications reflecting research in the countries mentioned.\textsuperscript{1,3,4}

Scientific expenditure in Arab countries is less than 0.5\% compared to 1.26\% for Cuba and 2.9\% for Japan in 1995. Investment in research and development is less than 14\% of the world average. In the field of education the Arab world translates approximately 330 books annually, just one fifth of the number that Greece translates. Each year, Spain translates as many books as have been translated into Arabic in the last thousand years.\textsuperscript{5}

Currently there are 7 journals indexed in the Arab countries and 2 regional journals (Eastern Mediterranean Health Journal and the Middle East Journal of Anesthesiology) of which only 2 have websites. Arab countries have more telephone lines and personal computers than those from South East Asia and Pacific, Sub-Saharan Africa, and South Asia, although they have fewer web-sites and internet users, which indicates that despite better income, there is economizing on technology use. The other countries in the EMR are probably no better than the Arab countries.

These evidence-based facts are depressing with regard to education and research, and it should raise the question of how to move forward? The answer could lie in (1) building capabilities and knowledge by investing more on research, 0.5\% of the GNP should be increased to 2\%, (2) increasing the use of electronic media and establishing more websites for different medical journals in the region, (3) improving the quality of medical journals in our region aiming for indexing in Medline and Pubmed, (4) supporting medical universities, to emphasize their leadership role in the society, (5) establishing national medical research centers to build bridges with expatriate professionals from our region to encourage their return to their countries of origin, and (6) to form an association of journals in our region aiming to play an active part of an international organization following the same standards and guidelines.

In conclusion, it is our obligation as professionals and scientists to promote evidence-based research and improve the quality of journals published in our region. It is important to continue to conduct more symposia and workshops and also to strengthen the relationship between different Editors within our region, and build up an association such as the Eastern Mediterranean Association of Medical Editors (EMAME).

References