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# **The Current Status of Professional Journals in Dental and Oral Health from Arabic-speaking Countries**

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## **Abstract**

The Arabic speaking world is disproportionately affected by oral health conditions compared with industrialized nations. The World Health Organisation recommends oral health integration into chronic disease programmes in middle- to low-income countries. This article evaluates the availability of peer-reviewed dental and oral health publications in the Arabic-speaking region. Dental journals were identified through (i) PubMed NLM Catalog Journals; (ii) Scopus; (iii) Google Scholar; (iv) Science Direct; (v) The Index Medicus for the Eastern Mediterranean Regional Office; (vi) Iraqi Scientific Journals Database. Each journal was evaluated for aim/scope, publication period, activity status, format and language. The search returned 28 dental and oral health professional journals that fitted the study parameters; all were tabled and described by evaluation criteria. Language is a key element that emerged within the sample. The prevalence of online formats may inhibit community-level practitioners from accessing regionally and culturally congruent dental research.

## **Introduction**

Globally, oral health conditions affected 3.9 billion people in 2010; however, the Arabic-speaking region was significantly and disproportionately affected when compared with industrialized nations supported by oral health policy, infrastructure, and research (Ogunbodede et

al., 2015; Williams, Sheiham, & Honkala, 2015). Some developing countries in North Africa and the Middle East are experiencing significant increases in chronic oral health diseases in comparison with industrialized regions (Aboul-Enein, Bernstein, & Neary, 2016; Ogunbodede et al., 2015; Williams et al., 2015). Between 1990 and 2010 disability-adjusted life-years (DALYs) associated with untreated oral health conditions increased 30.7 percent in Northern Africa and the Middle East; in contrast North America (0.1 percent), Europe (13.6 percent), the Caribbean (4.9 percent), and Asia-Pacific (0.2) fared much better during the same data collection period (Marcenes et al., 2013). Lack of oral health awareness, inadequate oral hygiene behaviors, high prevalence of smoking (Marcenes et al., 2013), and influx of high-sugar Westernized dietary habits (Aboul-Enein et al., 2016; Williams et al., 2015) are contributory factors. When looking at the dentist-to-population ratio in Somalia (1:241,639), Iraq (1:12,481), and UAE (1:3650) in comparison with the United States (1:2242) it is clear that dentistry is a small profession and perhaps does not hold the same value in some Arabic-speaking countries as it does in the United States. There are approximately 50,000 dentists practicing in the 22 member countries/ territory with over half (26,000) coming from one country—Egypt (Beaglehole, Benzian, Crail, & Mackay, 2009) (see Table 1). Oral health issues are exacerbated by the lack of preventive policies and programs supported by regionally developed and culturally congruent epidemiologic data (Morgano et al., 2010).

Although new initiatives focus public health resources on oral health prevention in developed countries, the Arabic-speaking region is faced with a double burden of increasing oral health disease rates and comparably inadequate oral health resources, policies, and service provision (World Health Organization, 2017).

### Oral Health as a Predictor of Future Health

The World Health Organization (WHO) meeting on global aging identified poor oral health as a predictor of future health and recommends oral health integration into chronic disease programs (Glick et al., 2012; Gulcan, Ekback, Ordell, Lie, & Astrom, 2015; Heilmann, Tsakos, & Watt, 2015; World Health Organization, 2008). Oral health is integral to general health because there is a functional element (tooth loss from dental caries and gum disease) which can be implicated in the development of other noncommunicable diseases such as diabetes and cardiovascular disease; poor oral health also correlates inversely with income, social interaction, mental health, self-care, and quality of life (Glick et al., 2012; Gulcan et al., 2015; Heilmann et al., 2015; World Health Organization, 2008). Self-rated oral health is also used as an independent predictor of self-rated general health and has been used to predict future health outcomes (Benyamini, Leventhal, & Leventhal, 2004).

From a clinical perspective, we can argue that oral diseases share common risk factors with other noncommunicable conditions; for example, high sugar consumption is a factor involved in the development of dental caries and tooth loss, but it is also linked to diabetes and obesity (Sheiham & Watt, 2000; World Health Organization, 2003). Across the lifespan, a range of risk factors that are inherited (genetic), acquired or structural (education, social, and economic), and behavioral contribute cumulatively to the initiation of oral disease (Broadbent et al., 2016). Although increased risk does not necessarily imply causation within a complex interplay of risk factors, we can suggest that certain factors increase the susceptibility of a range of noncommunicable disease development. We further speculate that the social gradient in disease indicates people from the most disadvantaged backgrounds experience disproportionate and adverse effects on oral and general health. Furthermore, because oral diseases are relatively easy to measure with some degree of accuracy and given they share common social determinants with other noncommunicable diseases, they present as suitable early predictors for exposure to other health-related risk factors across the lifespan (Nicolau, Thomson, Steele, & Allison, 2007). Access to health information in the form of evidence-based practice is one way of strengthening health systems, but much of the oral health research has been carried out in non-Arabic-speaking countries.

Previous academic efforts (Aboul-Enein, Bernstein, & Bowser, 2017, Aboul- Enein, Bernstein, & Kruk, 2017; Habibzadeh, 2006; Tadmouri, 2004) reviewed the status of medical, biomedical, and public health–affiliated journals in the Arabic- speaking region with respect to availability, scope, language and audience, and format. To date, there is no comprehensive evaluation of current dental and oral health research outlets originating in native Arabic countries nor is there a complete understanding of publication history, current status, language options, or access points. Therefore, the purpose of this brief report is to evaluate the availability of peer-reviewed journals in the Arabic-speaking region and discuss how dental and oral health practice, policies, and programs could be better served using a foundation of culturally congruent and regionally specific research.

## **Materials and Methods**

For the purposes of this review, the authors followed recommendations made by previous authors regarding definitions, terms, and concepts when addressing health- related research in the Arabic-speaking region (Aboul-Enein, Bernstein, & Bowser, 2017; Blair, Grivna, & Sharif, 2014). The common definition of the Arabic-speaking region is the 22 member countries/territory of the League of Arab States (Table 1) and, therefore, each country was used within the search parameters. To identify dental journals published in Arabic-speaking countries, an online search was conducted using (i) PubMed NLM Catalog Journals referenced in the NCBI

Database records, (ii) Scopus, (iii) Google Scholar, (iv) Science Direct, (v) the Index Medicus for the Eastern Mediterranean Regional Office Database Journals Directory (IMEMR) (World Health Organization Eastern Mediterranean Regional Office, 2016), and (vi) Iraqi Academic Scientific Journals database (Iraqi Academic Scientific Journals Database, 2017). An integrative search was carried out using a combination of search terms “dental; oral; dentistry; orthodontics; periodontics; Maxillofacial; Endodontics; health; journal AND Algeria; Bahrain; Comoros; Djibouti; Egypt; Iraq; Jordan; Kuwait; Lebanon; Libya; Mauritania; Morocco; Oman; Qatar; Saudi Arabia; Somalia; Sudan; Syria; Tunisia; United Arab Emirates; Yemen; Palestinian Territories” to identify each respective journal listed. Given the predominant languages used in this region, Arabic, English, and French search terms were used. An electronic appraisal of the search results identified the corresponding journal website. Each journal website was reviewed to identify its primary aim and scope as a dental or oral health journal, publication period, and other journal-related information such as activity status and languages available.

#### Inclusion/Exclusion Criteria

For the purpose of this search, dental and oral health–affiliated journals were limited to include peer-reviewed journals with a primary aim and scope of human dentistry, oral health, dental sciences, dental surgery, public health dentistry, dental education, or closely related disciplines of dental and oral health sciences. Both active and interrupted or ceased journals were also



included in the search results to provide a comprehensive overview for discussion purposes. Journals offered in English, Arabic, and French were considered for this review. Journals with a stated primary aim and scope focusing on general public health disciplines, human medicine, veterinary medicine, nursing, and other discipline-specific health professions were excluded in this search. The authors acknowledge that valuable and applicable data may have been excluded as a result of these delimitations. Results of the online search were compiled and tabulated (Table 2). Given the nature of this study, ethical approval and clearance was not necessary and, therefore, not obtained.

## **Results**

Our electronic database search returned 28 dental and oral health affiliated journals in Arabic-speaking countries. Twenty-three journals maintain an active publication cycle and five are currently interrupted or ceased (see Table 2). Among all journals, Iraq is represented by seven journals, Saudi Arabia by six journals, Egypt has five, Lebanon has three, Jordan has two, and all other Arabic-speaking countries have one or none. Twenty-two of the 23 active journals are available in English yet only five include an Arabic language publication (Arab Dental, The Jordan Dental Journal, Yemen Dental Journal, The Libyan Dental Journal, and Egyptian Dental Journal). Among currently operating journals, 15 are only offered online, eight are available in both online and print, and none are available in print only; all journals offer open access except the Al-Azhar Journal of Dental

Science. Among journals which self-identify as active, seven have published for more than 20 years, four for more than 10 years, and 12 have published for less than 10 years; the longest continuous publication is the Egyptian Dental Journal (62 years). All inactive journals interrupted or ceased publication within the last 20 years.

## **Discussion**

The advent of the Intranet (ARPANET) in 1969 by the U.S. Department of Defence led the way to global Internet access and the ability to access information that was previously difficult if not impossible to obtain. The globalization of knowledge creates the potential for dental professionals from around the world to collaborate across distance barriers and benefit from research conducted elsewhere. The scope of public health dental research includes genetics, biomaterials, tissue engineering, clinical trials, diagnostics, prevention, community-based participatory research, public health, socio-dental services, health services, and health policy (Beaglehole et al., 2009). However, these research avenues are concentrated within a small group of high-income countries outside the Arabic-speaking region and within a few countries inside that region.

There are Arabic-speaking countries with their own journals that publish dental research conducted in the region that might be more appropriate for their culture and economic conditions. Dissemination of that local research to other Arabic-speaking countries is typically provided in Literary Arabic

(as the common language at Arab League), English, and/or French. It is important to note that there are other languages (e.g., Somali, Berber, Kurdish) and dialects (e.g., Egyptian Arabic, Moroccan Arabic) spoken in some countries that comprise the Arab League (Blair et al., 2014; Jabbour, Giacaman, Khawaja, & Nuwayhid, 2012; The League of Arab States, 2017). It is important for Arabic-speaking countries to publish their research in English to ensure a wider dissemination of their findings within and beyond their region. Disseminating research in English widens the evidence base, creates the potential for promoting discussion, and links further research on clinical advancements. Additionally, English- language publications create a space to explore differences and similarities in cultural, historical, social, political, and economic perspectives on oral-health–related beliefs and practices, service and educational provision, and dental public health and policy.

The authors suspect there are Arabic-speaking dental professionals who choose to publish in American and European dental journals as they have wider dissemination, are recognized as having internationally compatible quality, and a higher impact factor. While approximately 80 percent of academic and research journals are in English, a significantly higher percentage (96 percent) in the dental arena publishes in English. Lay audiences do not typically read peer-reviewed dental scientific journals and 22 out of 23 journals published in English (rather than Arabic) are not necessarily detrimental to dissemination or readership. Professional journals

contribute to building, connecting, and sustaining communities; for dentistry in particular this can happen locally between researchers and health-care providers and also regionally and internationally. Journals can assist in building research and information capacity by providing education and feedback to researchers and facilitating debate. Technology may also enable researchers in Arabic-speaking countries to share their knowledge and experience with one another.

The United States, UK, Japan, and Scandinavia are the most productive countries in terms of dental research as measured in total numbers of papers, papers per researcher, and the impact of the research. The focus of dental research, however, has been on the needs of high-income countries. As with most research, low-income countries are under-represented in terms of research facilities (Beaglehole et al., 2009). These authors appear to suggest that a majority of oral health research is concentrated in high-income countries, leaving low-income countries marginalized and exempt from the global discussion. This creates a bias in the oral health evidence base and potentially adds to existing oral health inequalities.

Merely publishing research contributes to an unbalanced equation because it is only providing knowledge. For a more productive research environment the element of sharing becomes important within the regional scientific community. New knowledge and skills may also become a product of

sharing because they are discursively produced and disseminated through regional networking activities. The ability to share research and findings with colleagues on other continents can improve understanding of health and disease. Communicating improvements in oral health-care research and practice is ultimately beneficial to patients and societies that lack the funds to conduct similar research in their own communities. Sharing research outputs may promote science and contribute toward advances in health care, although there is a paucity of evidence to support this suggestion. There are concerns that some researchers in low- and middle-income settings may be unable to compete with highly resourced researchers when publishing (Parker et al., 2009). Journals may be used as a platform for disseminating knowledge and for enabling networking activities, which may work toward reducing oral health inequalities in low-income countries.

Traditionally, print journals generate revenue by individual subscription fees, advertising, subsidy by a journal's affiliated foundation or organization, and/or institutional membership/library subscriptions. Even when information and communication were mediated entirely by the printed word there were gaps between low- and high-income countries, which increased over time (Arunachalam, 2003). Arunachalam (2003) cites the case of Indian researchers who had to wait excessive periods for scientific journals containing the latest research to arrive in India, in contrast to

America and Europe, placing researchers at a relative disadvantage compared with their American and European counterparts.

With the rise of technology, more people rely on digital access to materials (Tennant et al., 2016) and as costs to print and deliver journals continue to rise, the Internet has provided another avenue for dissemination of research findings. The Arabic-speaking region includes some low-income countries that may lack reliable Internet connectivity or access to print materials (Internet World Stats, 2017). Some academic institutions in these low-income countries lack sufficient resources to maintain libraries and electronic access to research, which may increase research inequalities. If an academic or professional library subscribes to Web of Science/Knowledge alongside electronic versions of journals (e.g., Elsevier, Wiley InterScience, Sage, Ingenta, Wolters Kluwer, and so on) it is possible for a researcher with Internet access to move quickly from paper to paper in different journals. Many journals now publish entirely electronic versions, or electronic versions in advance of print, and accept and review manuscripts electronically. Research practitioners in low-income countries can experience intermittent resource availability, may lack reliable Internet access or computers, and can experience difficulties submitting their papers to academic journals, or act as referees (Brooks & Rumble, 2005; Chetwood, Ladep, & Taylor- Robinson, 2015; Lansang & Dennis, 2004; Sitthi-amorn & Somrongthong, 2000); the result could lead to

marginalization and exclusion. Research collaborations can also occur with the rise in Internet connectivity and many databanks are now accessible electronically. We further suggest that, based on the results of this review, dental research conducted in low-income Arabic-speaking countries is not highly cited, lacks visibility, and potentially becomes consigned to obscurity, further inhibiting regionally and culturally congruent educational and scientific advancement. While some researchers claim that scientific journals are the least useful form of information for health-care providers (Dawes & Sampson, 2003), recent research suggests otherwise (Guindon et al., 2010; Lavis et al., 2010).

Clinicians reading journals in low-income countries had significantly increased odds of reporting the use of research-based evidence that led to concrete changes in their professional practice, particularly when research emanated from their native country (Guindon et al., 2010). We can surmise that the rise in technology meant to diminish barriers may actually be creating new barriers in oral health research and education for some Arabic-speaking countries.

### **Conclusions and Policy Implications**

The WHO's 2004 World Report on Knowledge for Better Health argues that access to health information is a global health issue. Of particular importance is access to essential information for primary health-care providers in low-income countries to reduce the gap in scientific advances and their application. Fewer publications in the Arabic-speaking regions and

a perception of lower quality (Benemar & Bakoush, 2009) have exacerbated this issue for some time. The WHO suggests that to increase health equity there needs to be greater access to information for primary care providers who can translate research into action. The aim is to strengthen health systems and achieve greater health equity within and between populations by translating knowledge generated from research into action more effectively (World Health Organization, 2004). Support for regional, population-, or condition-specific journals (e.g., dental and oral health) at the policy level could address this aim.

In this review we identified 23 journals in the Arabic-speaking region that publish oral health research. In contrast, while there have been some movements toward open access, much of the American and European oral health literature exists behind a paywall, making it inaccessible to low-income Arabic-speaking countries.

Inaccessibility also has implications for quality because a range of current research cannot be searched to improve the existing knowledge base; this has implications for the currency of oral health research in low-income Arabic-speaking countries. Oral health research needs to be multi-directional, flow freely, and be accessible at affordable costs to researchers and students globally. Arguably, information is vastly more useable in electronic form and the rise in technology has made some dental journals more accessible; this has not translated into an increase in research



publications in Arabic-speaking countries. It is particularly important that all dental researchers and students have adequate Internet connectivity in order to access not only locally generated information but also knowledge derived from global research in order to improve education, policy, and oral health care provision.

### **Limitations and Bias**

There are some limitations worth mentioning in this electronic review.

While the authors searched various electronic resources and databases using several key search terms and phrases, some journals might have been missed in the search. Additionally, journals that are not indexed in electronic databases may have been missed in the search. The authors cannot be certain that suggested explanations in the discussion section are valid; the authors speculate based on previous research and the corresponding literature. Finally, the authors assume some Arabic-speaking dental professionals choose to publish in American and European dental journals for increased dissemination and exposure.

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Notes

Conflicts of interest: None declared.

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## **Tables**

Table 1. Members of the League of Arab States

Country or Territory

Algeria

Bahrain

Comoros

Djibouti

Egypt

Iraq

Jordan

Kuwait

Lebanon

Libya

Mauritania

Morocco

Oman

Palestinian Territories

Qatar

Saudi Arabia

Somalia

Sudan

Syria

Tunisia

United Arab Emirates

Yemen

Information obtained from the League of Arab States official website

(<http://www.lasportal.org/ar/Pages/default.aspx>).

Table 2. List of Selected Dentistry-Affiliated and Oral Health Journals in Arabic-Speaking Countries

Journal Name	Publication Period <sup>a</sup>	Activity Status	Country Origin	Language <sup>b</sup>	Print Format <sup>c</sup>	Open Access <sup>d</sup>
Journal of the Arab Dentist	1997–1998	Interrupted/Ceased	Syrian Arab Republic	Ara; Eng; Fre	Paper	n/a
Al-Azhar Journal of Dental	1986-present	Current	Egypt	Eng	Both	n/a

Sciences						
Alexandria Dental Journal	1976–present	Current	Egypt	Eng	Both	yes
Arab Dental Journal	1999	Interrupted/ceased	Lebanon	Eng	paper	n/a
Egyptian Dental Journal	1955–present	Current	Egypt	Arabic; Eng	both	Yes
Egyptian Orthodontic Journal	1987-1988	Interrupted/Ceased	Egypt	Eng	Paper	n/a
Iraqi Orthodontic Journal	2005-2006	Interrupted/ceased	Iraq	Eng	paper	n/a
Journal of the Lebanese Dental Journal	2001-present	Current	Lebanon	Eng; Fre	both	yes
International Arab Journal of Dentistry	2010-present	Current	Lebanon	Eng;Fre	electronic	both
Journal of Baghdad	1973-present	Current	Iraq	Eng	Electronic	Yes

College of Dentistry						
The Saudi Dental Journal	1989-present	Current	Saudi Arabia	Eng	Both	Yes
Smile Dental Journal	2006-present	Current	Jordan	Eng	Electronic	Yes
The Libyan Dental Journal	2011-present	Current	Libya	Ara; Eng	Electronic	Yes
Yemen Dental Journal	2016-present	Current	Yemen	Ara; Eng	Electronic	Yes
The Jordan Dental Journal	1962-2013	Current	Jordan	Ara; Eng	Both	Yes
The Saudi Journal FOR Dental research (formerly King Saud University	2011-present	Current	Saudi Arabia	Eng	Electronic	Yes

Journal of Dental Sciences)						
Saudi Journal of Oral Sciences	2014-present	Current	Saudi Arabia	Eng	Both	Yes
Saudi Journal of Oral and Dental Research	2016-present	Current	Saudi Arabia	Eng	Electronic	Yes
Saudi Endodontic Journal	2011-present	Current	Saudi Arabia	Eng	Electronic	Yes
Journal of Orthodontic Science	2012-present	Current	Saudi Arabia	Eng	Electronic	n/a, Information Yes
Iraqi Dental Journal	1972-present	Current	Iraq	Eng	Both	Yes
Al-Rafidain Dental Journal	2005-2014	Current	Iraq	Eng	Electronic	Yes

Mustansiri a Dental Journal	2005- present	Current	Iraq	Eng	Electronic	Yes
Tikrit Journal for Dental Sciences	2011- present	Current	Iraq	Eng	Electronic	Yes
Journal of Oral and Dental Research	2013- present	Current	Iraq	Eng	Electronic	Yes
Future Dental Journal	2015- present	Current	Egypt	Eng	Electronic	Yes
Arab Dental	2011- present	Current	Germany	Ara	Electronic	Yes
Middle East Dentistry and Oral Health	1984-1986	Interrupted/Ce ased	United Kingdom	Eng	Paper	n/a

<sup>a</sup> Information obtained from PubMed or IMEMR database. <sup>b</sup> Eng, English;

Ara, Arabic; Fre, <sup>c</sup> Paper; electronic; Both; <sup>d</sup> n/a, Information not available.







