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Kristen M. Robertson

Jacquelyn E. Bowser

Joshua Bernstein

Basil H. Aboul-Enein

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ORIGINAL RESEARCH

Peer-Reviewed Veterinary Journals From Arabic-Speaking Countries: A Systematic Review



Kristen M. Robertson, DVM, MPH, Jacquelyn E. Bowser, DVM, PhD, DACVIM-LA, Joshua Bernstein, PhD, CHES, Basil H. Aboul-Enein, MSc, MPH, MA, EdD, FRSPH
Pensacola, FL; Providence, RI; Kirksville, MO; London, UK

Abstract

BACKGROUND The prevalence of diseases of foodborne and zoonotic origin in Arabic-speaking countries highlights the importance of collaboration between human and animal health professionals. However, accessibility of research and evidence-based practices in these countries is not well characterized. This brief report determines the availability of professional veterinary journals within the Arabic-speaking region.

METHODS An electronic search using 6 databases assessed for publication period, activity status, and available languages incorporated all aspects of veterinary medicine and specialties.

RESULTS Among 29 veterinary journals identified, the oldest current publication originated 63 years ago, with 10 journals currently interrupted or ceased. All 19 currently active journals are available electronically as open access, with 8 also offered in paper format. Veterinary journals published within Arabic-speaking countries are predominantly produced in Egypt, Iraq, and Sudan.

CONCLUSION Electronic access is lacking compared with English-speaking countries, and there is a lack of journals with an Arabic-language option. The reasons associated with language options in veterinary publications are not immediately apparent, yet may highlight differences among public health, health education, and zoonotic professionals and the populations they serve. Veterinary journals in Arabic-speaking countries do not adequately represent the overall region and are limited in access. Further evaluation of regional culture and publisher preferences is indicated to identify new collaboration opportunities among health professionals and local stakeholders.

KEY WORDS Arabic, Middle East, North Africa, research, veterinary medicine.

INTRODUCTION

Arabic-speaking countries currently face various public health challenges regarding zoonotic and foodborne diseases, with globalization of disease transmission of high interest at the international level. The key to effectively addressing these challenges lies in collaboration among public health agencies, as well as physicians and animal health professionals.¹ With continued urbanization, environmental depletion, and social and economic struggles, veterinary medicine is at the forefront in ensuring

livestock sustainment, food safety and security, and response to global health crises.²

The veterinary profession is a critical link between the health of humans and animals, public policy, and their interaction with the environment.^{3,4} The relationship among these 3 entities is the overall aim of the One Health concept.⁵ Six of every 10 infectious diseases in humans include an animal vector, and investigatory processes of these diseases span human, veterinary, and zoonotic agencies.⁶ Interprofessional collaboration among veterinary institutions, policymakers, physicians, and animal health

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practitioners broadens existing knowledge and strengthens international partnerships aimed at advancing global health.^{5,7}

Veterinary medical education within Arabic-speaking countries is heavily focused on livestock species,⁸ with veterinarians being critical in promoting animal health, decreasing production loss, and protecting the human population from both zoonotic and foodborne diseases. Because of the significant risk of zoonotic disease transmission within the Middle East and spread outside its borders, the Food and Agricultural Organization of the United Nations is focused on livestock health and disease control within Arabic-speaking countries such as Egypt, Iraq, Oman, Tunisia, and Yemen.⁹⁻¹⁵ Opportunities exist to improve and promote hands-on educational experiences of Arabic-speaking veterinarians and interactions with professionals of Arabic-speaking countries regarding food security and public health and to foster growth in current scientific journals and collaborative efforts in the Arabic-speaking region.^{8,9,16-18}

Instrumental to collaboration among veterinary professionals within the Arabic-speaking countries are the sharing and promotion of research and evidence-based practices, particularly through peer-reviewed scientific journals. However, despite a historical scientific heritage, Arabic-speaking countries account for less than 1% of research citations worldwide and devote significantly less resources to research production and dissemination compared with China and Europe.¹⁹ Currently, availability of veterinary journals, research development, and publication output suggest that the importance of veterinary medicine as a significant component of human health is lacking. The purpose of this brief report is to evaluate the presence and accessibility of peer-reviewed veterinary journals within the Arabic-speaking region and determine potential opportunities for further development of veterinary-directed scientific collaboration in this area.

METHODS

An electronic search was conducted using (1) PubMed NLM (National Library of Medicine) Catalog of journals referenced in the NCBI (National Center for Biotechnology Information) database records,²⁰ (2) Scopus, (3) Google Scholar, (4) Science Direct, (5) Index Medicus for the Eastern Mediterranean Regional Office Database Journals Directory,²¹ and (6) Iraqi Academic Scientific Journals database²² to identify veterinary journals published in Arabic-speaking countries. An integrative search was carried out using a combination of search terms “veterinary; animal; medicine; science; studies; 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. An electronic appraisal of the search results identified the corresponding journal’s website. Each respective journal website was reviewed to identify its publication period and other journal-related information such as activity status and languages available. Results of the electronic search were compiled and tabulated (Table 1). For the purpose of this search, veterinary journals were defined as a peer-reviewed journal encompassing any or all disciplines of veterinary medicine, sciences, and specialties. Given the nature of this review, ethical approval and clearance was not necessary and therefore not obtained. **Inclusion and Exclusion Criteria.** Given the wide spectrum of the veterinary profession, veterinary journals that explicitly stated veterinary medicine or veterinary-related disciplines within the journal’s respective aim and scope were included in this search. Also, only peer-reviewed journals were included in this search. Both active and interrupted or ceased journals were included in the search results to provide a comprehensive snapshot for discussion purposes. Given the predominant languages used in this region, Arabic, English, and French search terms were used, respectively, in this search. Journals with a clearly stated primary aim and scope focusing only on human medicine, zoology, human public health, nursing, and other discipline-specific health professions were excluded. The authors acknowledge that valuable and applicable data may have been excluded as a result of this delimitation.

RESULTS

The database search returned 29 journals that fit within our inclusion and exclusion criteria and published in Arabic-speaking countries: 13 are from Egypt, 7 from Iraq, 4 from the Sudan, and 1 each originating in Algeria, Libya, Morocco, Saudi Arabia, and Yemen (see Table 1). The oldest journal in our sample was published from 1940-2015 (*Journal of the Egyptian Veterinary Medical Association*); the oldest journal still in publication began in 1954 (*Veterinary Medical Journal Giza*). Among the full sample, 10 journals are currently interrupted or ceased; 3 of these journals had publications periods of approximately 50 years or longer, 1 journal actively published for 18 years, and 5 had periods less than 10 years. Fourteen journals in our sample are or were offered

Table 1. List of Selected Veterinary Journals in Arabic-Speaking Countries

Journal Name	Publication Period*	Activity Status	Country Origin	Language	Print Format [†]	Open Access	IF [‡]
Alexandria Journal of Veterinary Science	1983-present	Current	Egypt	Eng	Both	Yes	0.786
Assiut Veterinary Medical Journal	1974-present	Current	Egypt	Eng; Ara	Both	Yes	N/A
Benha Veterinary Medical Journal	2011-present	Current	Egypt	Eng	Both	Yes	N/A
Egyptian Journal of Sheep and Goat Sciences	2006-2015	Interrupted/ceased	Egypt	Eng; Ara	Both	N/A	N/A
Egyptian Journal of Veterinary Science	1964-2012	Interrupted/ceased	Egypt	Eng; Ara	Paper	N/A	N/A
Egyptian Veterinary Medical Society of Parasitology Journal	2003-2015	Interrupted/ceased	Egypt	Eng; Ara	Paper	N/A	N/A
International Journal of Veterinary Sciences and Medicine	2013-present	Current	Egypt	Eng	Electronic	Yes	N/A
Journal of Advanced Veterinary Research	2011-present	Current	Egypt	Eng	Electronic	Yes	0.47
Journal of the Egyptian Veterinary Medical Association	1940-2015	Interrupted/ceased	Egypt	Eng; Ara	Paper	N/A	N/A
Kafr El-Sheikh Veterinary Medical Journal	2003-present	Current	Egypt	Eng	Both	Yes	N/A
Suez Canal Veterinary Medical Journal	1998-2015	Interrupted/ceased	Egypt	Eng; Ara	Both	Yes	N/A
Veterinary Medical Journal Giza	1954-present	Current	Egypt	Eng	Both	Yes	N/A
Zagazig Veterinary Journal	1972-present	Current	Egypt	Eng	Both	Yes	N/A
Al-Anbar Journal of Veterinary Sciences	2008-present	Current	Iraq	Eng; Ara	Electronic	Yes	N/A
Al-Qadisiya Journal of Veterinary Medicine Science	2002-present	Current	Iraq	Eng; Ara	Electronic	Yes	N/A
Basrah Journal of Veterinary Research	2004-present	Current	Iraq	Eng; Ara	Electronic	Yes	3.259
Iraqi Journal of Veterinary Sciences	2008-present	Current	Iraq	Eng; Ara	Electronic	Yes	N/A
Iraqi Poultry Sciences Journal	2006-2015	Interrupted/ceased	Iraq	Eng; Ara	Electronic	Yes	N/A
Kufa Journal for Veterinary Medical Sciences	2010-present	Current	Iraq	Eng; Ara	Electronic	Yes	N/A
The Iraqi Journal of Veterinary Medicine	2005-present	Current	Iraq	Eng; Ara	Electronic	Yes	0.898
SUST Journal of Agricultural and Veterinary Sciences	2012-present	Current	Sudan	Eng	Electronic	Yes	N/A
The Sudan Journal of Veterinary Research	1979-present	Current	Sudan	Eng; Ara	Both	Yes	N/A
The Sudan Journal of Veterinary Science and Animal Husbandry	1960-2011	Interrupted/ceased	Sudan	Eng	Paper	N/A	N/A
University of Khartoum Journal of Veterinary Medicine and Animal Production	2010-2015	Interrupted/ceased	Sudan	Eng; Ara	Electronic	Yes	N/A
Maghreb Vétérinaire	1983-1993	Interrupted/ceased	Algeria	Fre; Ara; Eng	Paper	N/A	N/A
Open Veterinary Journal	2011-present	Current	Libya	Eng	Electronic	Yes	N/A
Revue Marocaine des Sciences Agronomiques et Vétérinaires	1980-present	Current	Morocco	Fre; Eng	Both	Yes	N/A
Journal of Agricultural and Veterinary Sciences	2008-present	Current	Saudi Arabia	Eng; Ara	Electronic	Yes	N/A
The Yemeni Journal of Agriculture & Veterinary Sciences	2013-2014	Interrupted/ceased	Yemen	Eng	Electronic	Yes	N/A

Ara, Arabic; Eng, English; Fre, French; N/A, information not available.
* Information obtained from electronic database records.
[†] Paper; electronic; both.
[‡] Impact factor (2015-2017) as listed on journal website.

without a printed paper option; 12 are currently open access and exclusively online, and 3 (*Iraqi Poultry Sciences Journal*, *University of Khartoum Journal of Veterinary Medicine & Animal Production*, and *Yemeni Journal of Agriculture & Veterinary Sciences*) were entirely online before they ceased publication. All 19 currently active journals offer an electronic, open-access option; 8 also offer a paper-printed option. Of the 5 journals that offered a paper-only publication option, all are interrupted or ceased. Thirteen Arabic-speaking countries (Bahrain, Comoros, Djibouti, Jordan, Kuwait, Lebanon, Mauritania, Oman, Qatar, Somalia, Syria, Tunisia, United Arab Emirates) and the Palestinian territories do not currently offer an active peer-reviewed veterinary journal.

Language configurations for the entire sample (currently available and interrupted/ceased) were tabled. All 29 journals are or were published in English; 16 in Arabic and English languages; 1 in Arabic, French, and English; and 1 in French and English. Among currently active journals, 9 are published in English only, 9 in Arabic and English, and 1 in French and English. Seven of the 8 journals currently published in Egypt are available in English, with only 1 journal published in both English and Arabic. All 6 current Iraqi journals are published in English and Arabic, and of the 2 current Sudanese journals, 1 is available in English and Arabic and 1 in English only. Three countries offer a single current publication to the research sample: Libya (English only), Morocco (English and French), and Saudi Arabia (English and Arabic).

DISCUSSION

Nearly half of the sample consists of veterinary journals from Egypt, and 82.7% of all journals in the sample are produced in Egypt, Iraq, and the Sudan. What is uncertain in our review is whether there is more need for veterinary literature in these 3 countries versus the entire Arabic-speaking region. Also noteworthy, 6 of the 10 journals with interrupted or ceased publication status are from Egypt (5), the Sudan (2), and Iraq (1). Given the stability evidenced in our sample, including publications periods longer than 60 years, it is unclear why some veterinary publications interrupt or cease after less than 10 years. There may be industry-specific and regionally appropriate publication models predictive of long-term viability that are not readily present within this review. A comparative-processes evaluation within the Arabic-speaking region could be useful and necessary.

Since the mid-1990s, the Internet has had a significant impact on world culture and information exchange. The percentage of global 2-way commerce

conducted online has increased from less than 1% in 1993 to approximately 97% in 2007.²³ Expansion of Internet penetration in Arabic-speaking countries has lagged behind the United States and Europe, with a current average of 46.8% for the region and significant country-specific variability ranging from 94.1% in Qatar to 5.8% in Somalia.²⁴ Interestingly, all currently active veterinary journals in this sample are offered in open-access electronic format, and 11 of 19 (57.9%) are exclusively in this format. All 5 print-only journals in this selection are presently ceased (3 Egyptian, 1 Sudanese, 1 Algerian); 4 terminated before the advent of the 1996 USAID (US Agency for International Development)-funded Leland Initiative to bring full public Internet connectivity to the entire Africa continent.²⁵ It is unknown why print-only journals failed to make a conversion to print and electronic or electronic-only formats.

Compared with English-speaking countries, Arabic-speaking regions rank significantly lower in access to electronic resources and electronic literacy (52.2% vs 87.9%).²⁴ Increasing online access to existing veterinary publications could present as a short-term solution to the lack of available resources. Current veterinary journals and new startup publications may view open access as a priority format in addition to print and language considerations. Electronic literacy should also be considered with a focus on target audiences such as veterinary or public health professionals versus a broader lay population.

A lack of available peer-reviewed veterinary journals could limit the ability of regionally specific and population-level public health, health education, and zoonotic professionals to deliver information and services to priority populations. Given that a significant number of cultural groups in need within the Arabic-speaking region prefer to receive health information in their native tongue,^{26,27} the high percentage of veterinary journals available without an Arabic-language option (41%) is not fully understood. We are not prepared to suggest this incongruity exists because of industry-accepted standards, individual publisher preference, or established needs within the target populations. Additionally, the preferred language between Arabic-speaking cultural groups and the public health, health education, and zoonotic professionals that represent and serve them could be substantially different. Additional evaluation of how publishers categorize and view their target populations could shed light on the high number of English-only veterinary journals.

Species-specific focus of veterinary research throughout the world reflects the direction of veterinary education

and practice within respective countries. For example, within the United States, 74.5% of veterinarians work in companion animal practice,²⁸ with many educational and research programs being similarly directed in these areas.²⁹ Data regarding to what extent these types of trends occur in other areas of the world are limited. Analysis has indicated, however, that of the articles produced in species-specific veterinary journals in the Middle East from 1996-2010, 13% focused on food animals.³⁰ This was much in line with North America, Western Europe, and the Pacific region food animal article percentages during the same period.³⁰ Comparatively, journal articles within the Middle East that discussed small-animal topics accounted for less than 5% within that time frame.³⁰ This supports to some degree the strong focus on livestock health that is found within this region.⁸

An electronic search by Aboul-Enein *et al*¹⁹ investigating peer-reviewed public health journals within the Arabic-speaking region revealed 25 journals from 11 countries, with Saudi Arabia, Egypt, and Sudan being most heavily represented. A similar study by Aboul-Enein *et al*³¹ focusing on nutrition journals produced within this region returned 12 journals from 7 different countries, with Egypt again producing a majority of the publications. Further investigation is indicated to identify commonalities among countries most commonly involved in research in each of these disciplines, particularly at the interagency level.

CONCLUSIONS

Although there may not be a recognized shortage in current and active veterinary journals in the Arabic-speaking region, there is an unequal distribution among those countries and the Palestinian territories. More than half of the available publications originate in 3 countries, with a significant majority producing 1 journal or none. Evidence suggests that regions with higher gross domestic product have a higher level of international and cross-cultural collaboration.³⁰ Other publication models within and outside the region should be explored for potential explanation of unequal distribution within the Arabic region.

Availability and access to the Internet cannot be discounted when describing the lack of veterinary publications in some Arabic-speaking regions. Where Internet access among specific target populations and the general public is lacking, veterinary journal publishers may have responded to a perceived lack of market demand. Although an inverse relationship could also be examined and accepted, it would be unlikely that a lack of professional journals affects Internet demand. Although this study did not look specifically at Internet access across individual Arabic-speaking countries, the larger cohort of countries with one or no veterinary publication could examine alternative means of contributing to the greater body of knowledge and subsidize the overall body of veterinary science knowledge.

The present review suggests that English is a dominant language within the veterinary science field in the Arabic-speaking region. Given that the majority of professional and lay populations in the region prefer their native dialects, the effect language has on local research efforts in academic, clinical, and community settings is unclear. Languages and access points offered by professional journals appear to be globalizing, and English is the overwhelming preference in academic publications.³² However, to describe regionally specific and culturally relevant veterinary systems, the Arabic-speaking region should consider preferences unique to their target populations.

LIMITATIONS

Although the authors searched several electronic databases, indices, and available resources using several key search terms and phrases, some journals may have been missed in the search. Additionally, journals that may not be indexed in electronic databases may have been missed in the search. It is important to note that this review was primarily intended to present an overview of veterinary-affiliated journals within the Arabic-speaking region.

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