

## Research Article

### Awareness and use of evidence-based medicine resources among physicians

Amjad Alhelo<sup>1</sup>, Bashar Samara<sup>2</sup>

<sup>1</sup>Jordanian ministry of health department of family medicine

<sup>2</sup>Jordanian ministry of health department of internal medicine

#### Abstract:

**Aim:** We sought to evaluate the awareness and the use of evidence-based medicine resources among physicians in Jordan.

**Method:** A cross-sectional study was conducted via the Internet among 517 doctors who responded from among a total of 717 doctors contacted (72.1% response rate). Doctors from all specialties of medicine from a Facebook group called Doctors Café in Jordan were contacted. A questionnaire was given to each one of them to measure their awareness and use of evidence-based data.

**Result:** A total of 517 physicians participated in this research, with 377 reporting that they use evidence-based resources frequently, 91 reporting they use such resources infrequently, and 49 reporting not using such resources at all. The resource that was most often used by the respondents was PubMed, followed by other resources such as UpToDate, National Guideline Clearinghouse, Medscape, BMJ Best Practice, e-books, and other online journals. The Cochrane Library was surprisingly not widely reported amongst the surveyed physicians.

**Conclusion:** There is good awareness regarding evidence-based medicine among physicians in Jordan, which ultimately benefits health care in Jordan.

**Key Words:** Evidence-based medicine, evidence-based medicine resources, physicians

#### Introduction

Evidence-based medicine (EBM) can be defined as the use of evidence from well-established strong research to enhance proper decision-making by medical care practitioners. Avicenna, a famous ancient physician also known as Ibn Sina, was one of the first physicians to conduct clinical and basic research, which forms the basis for EBM, in the history of medicine. (1) The proper use of EBM in medical practice involves turning the medical problem into a question, then searching for an answer to that question from the available evidence resources. This evidence answer should then be critically appraised before being applied in clinical practice to solve the medical problem. (2) The use of EBM is very critical to health-care improvement worldwide, with the emergence of new research that can dramatically affect guidelines and hence the decision-making process occurring every day. All physicians and clinical practitioners should be able to identify the best clinically applicable and valid research evidence. Further, they also should be able to translate that valid information into clinical practice whenever applicable. Unfortunately, success with this varies at the current time. (3) Evidence can be divided into two types, primary and secondary evidence. Secondary evidence is more common among physicians and clinical practitioners due to their busy lifestyle. Secondary evidence, such as systematic reviews, allows the reader to reach several primary evidence sources at once that have undergone critical appraisal by clinical experts. (4) The Cochrane Library produces such systematic reviews with the highest level of evidence. (5)

What follows are some of the most important evidence-based

resources mentioned in our questionnaire:

**UpToDate** this very trustable system provides evidence-based online clinical data to many physicians around the world. (6) Clinical data are reviewed by authorized personnel who also summarize the conclusions as recommendations that can be easily applied in clinical practice.

**MD Consult:** this resource is for finding full-text medical journal articles. It is also a resource for thousands of patient handouts and drug-related information.

**PubMed/MEDLINE:** this database includes abstracts for millions of medical research papers as well as links for full article resources and is maintained by the United States National Center for Biotechnology Information.

**BMJ Best Practice:** this resource is very quick and reliable for point of care-delivered information. It combines the latest guidelines and evidence with opinions from experts regarding all aspects of health, starting from the diagnosis and reaching treatment and prognosis.

**Other known EBM resources:** these include BMJ Case Reports, Medscape Reference, ACP Journal Club, National Guideline Clearinghouse, DynaMed, and the Database of Abstracts of Reviews of Effect (DARE).

Jordan, or the Kingdom of Jordan to be more specific, is an Arab country with a population of at least 10 million citizens. It is located in western Asia. (7) For every 10,000 citizens in Jordan, there are 28.6 physicians and 17.8 pharmacists according to the latest statistics released by the Private Hospitals Association in Jordan. (8)

## Methodology

Direct messages were sent on Facebook to 717 Jordanian doctors from different specialties who were randomly chosen as a sample from the Doctors Café Facebook group. The group contains more than 5,000 health care workers. Only 517 doctors responded to these messages and agreed to participate in the survey and consent signed from . Two online questionnaires were sent to the participants to fill out, one of which was to collect general information about their characteristics, as shown in Tables 1 and 2. Data from all filled questionnaires were collected, revised, and analyzed manually. The study began in January 2018 and ended in August 2019.

## Results

The results of the questionnaire revealed that 90.5% of physicians in the tested sample used evidence-based resources in their medical practice. It was found that online evidence resources were more popular among the surveyed physicians. Although most physicians were familiar with EBM, many of them reported they didn't use it on a daily basis: 197 physicians (42%) reported using it between two and three days a week, while 182 others used it on a daily basis (39%). The other 89 (19%) participant doctors didn't use it that often. There were no big differences between the evidence resources used. The most popular among them was PubMed which was used by 16% of the participants. Other popular resources among the participants were UpToDate and the National Guideline Clearinghouse, which were both used by 52 (11.1%) participants.

**Table 1: Questionnaire for awareness about EBM**

1. Are you using EBM resources?	YES	NO
	468 (90.5%)	49 (9.5%)
2. How frequently are you using EBM resources?	DAILY	2-3 TIMES WEEKLY
	182(39%)	197 (42%)
		89 (19%)
3. Which of the following EBM resources are you using?		
a. UpToDate		52 (11.1%)
b. MD Consult		12 (2.6%)
c. Cochrane Library		17 (3.6%)
d. PubMed/MEDLINE		75 (16%)
e. BMJ Best Practice		46 (9.8%)
f. Medscape Reference		40 (8.5%)
g. Annals of Internal Medicine: ACP Journal Club		27 (5.8%)
h. Database of Abstracts of Reviews of Effect (DARE)		3 (0.6%)
i. National Guideline Clearinghouse		52 (11.1%)
j. DynaMed		32 (6.8%)
k. Scopus		5 (1.1%)
l. OvidSP		3 (0.6%)

m. CINHAL Plus with Full Text	10 (2.1%)
n. J-Gate Plus	1 (0.2%)
o. Online journals of various publishers (e.g., Elsevier Science, Lippincott, Wiley-Blackwell, Springer Link, Informa Healthcare, Karger, Thieme, BMJ, Oxford University Press, Sage, Nature, etc.)	43 (9.2%)
p. Electronic books of various publishers (e.g., Elsevier Science, Lippincott, etc.)	50 (10.7%)

Male participant physicians numbered more than females amongst our study sample (76% vs. 24%). Most of the participants were aged between 30 and 49 years old; 42% of the participants were in their 30s, while almost 32% were in their 40s. The rest of the participants were scattered between younger (< 30 years) and older (> 50 years) ages. Only 59 of the participants were general physicians, whereas the rest were specialized physicians. Further, 55.3% of the total participants were specialists degree holders while 33.3% held a doctorate degree. The most common number of daily patients seen among the participating physicians was between 40 and 60 patients.

**Table 2: Respondent physicians' characteristics**

Sex:	Male	395 (76%)
	Female	122 (24%)
Age group (years):	< 30	45 (8.7%)
	30-39	217 (42%)
	40-49	165 (31.9%)
	50-59	76 (14.7%)
	> 60	14 (2.7%)
Education degree:	Bachelor's degree (general physician)	59 (11.4%)
	Master's degree	286 (55.3%)
	Doctorate degree	172 (33.3%)
Average number of patients seen daily:	< 20	47 (9.1%)
	20-40	120 (23.2%)
	40-60	254 (49.1%)
	60-80	31 (6%)
	> 80	65 (12.6%)

## Conclusion

Our participant group of physicians was a good sample, representing most physicians in Jordan in terms of characteristics. The awareness of EBM resources among Jordanian physicians is at a very acceptable level, with a percentage exceeding 90% in our study sample. This has helped to improve physician knowledge and has had a positive effect on their decision-making, which improved health care in Jordan. It was found that Jordanian physicians were more familiar with online EBM resources. This may be due to a lack of time given they see an average of 50 patients per day. PubMed, UpToDate, and the National Guidelines Clearinghouse are the most popular EBM resources among physicians in Jordan.

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