Dubai Medical Journal

Educational Corner – Research Article

Dubai Med J 2023;6:120–123
DOI: 10.1159/000529570

Received: August 26, 2022
Accepted: January 4, 2023
Published online: March 8, 2023

Vascular e-Learning in the MENA Region during the COVID-19 Pandemic

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Keywords
Vascular e-learning · MENA region · Covid-19 pandemic · Modes of learning

Abstract
Introduction: With the steady rise in interest in e-learning and the sudden boost provoked by the COVID-19 pandemic, it becomes necessary to explore the e-learning experience within the medical community in the MENA region. ***Methods:*** An online survey was conducted during the early phase of the COVID-19 pandemic (June 15 – October 15, 2020). ***Re-***

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sults: Seventy-eight vascular surgeons and trainees from 16 countries participated. 88% of the participants were male. 55% attended more than 4 activities. More than half of the activities did not lead to any official certification. Topic was the primary determinant for attending an activity. National societies and social media played a major role in disseminating activity-related information. Lack of time, increased workload, differences in time zone, and technical issues were the main obstacles cited. 84.7% of the participants had a positive impression. ***Conclusion:*** As the COVID-19 pandemic boosted e-learning activities in vascular surgery, a shift was observed in the learning mode and new leadership skills were called upon. Novel ways of quality control are required.

Introduction

The interest in applying e-learning to medical education has grown in a steady manner during the last 15 years. The COVID-19 pandemic boosted that process with e-learning becoming suddenly the only possibility as novel ways of communication became the new standards and new visions forced their way into once well-established modes of organizations [1]. The world was forced to adopt those changes and to adapt, as did the global vascular surgery community. The limited data available holds promise [2, 3]. No specific data can be found however for the MENA region. Our aim was to highlight the specific needs of this community of vascular surgeons through their experience of e-learning in the early phases of COVID-19 pandemic.

Materials and Methods

An online survey addressed to vascular surgeons and trainees in vascular surgery was conducted between June 15 and October 15, 2020. The full version of the questionnaire can be accessed online through http://med-pie.com//el-covid-survey/el-covid-english.pdf. For a learning activity to be considered, it had to fall under the educational or training category, address a vascular or endovascular topic, and be offered exclusively online between March 15 and May 15, 2020. The survey consisted of 17 closed questions and one open question hosted on Google Forms (Mountain View, CA, USA). Participants were contacted through social media, national societies, and contributors. The EL-COVID regulations for data protection were followed [4, 5]. The survey was approved by the Ethics Committee of the primary Investigator's institution. A descriptive analysis of percentage was applied to all answers and a N-1 χ^2 test was performed to compare the results to the global results.

Table 1. Geographical distribution of participants (*N* = 78)

Country	Number of participants
Algeria	3
Bahrain	1
Egypt	8
Iran	10
Israel	2
Jordan	1
Lebanon	24
Morocco	2
Palestine	1
Qatar	1
Saudi Arabia	9
Syria	2
Tunisia	1
Turkey	9
UAE	3
Yemen	1

Results

Out of the 856 physicians included in the EL-COVID survey, 9.1% participants were from 16 countries from the MENA region (*N* = 78). A detailed list of the participants' geographical distribution can be found in Table 1. The integral data of the surveys are published and available online [5]. The majority of the participants were male vascular surgeons (88.5%, *N* = 69) practicing for more than 5 years (69.2%, *N* = 54). Female vascular surgeons accounted for only 11.5% (*N* = 9) of the participants. Seven of the participants (9%) were trainees.

More than half of the participants (55%, *N* = 43) attended more than 4 activities, 37.2% (*N* = 29) attended between 2 and 4 activities and 7.7% (*N* = 6) attended one activity. Three out of four physicians attended national e-learning activities (75.6%, *N* = 59) and 7 out of 10 attended international e-learning activities (71.8%, *N* = 56). More than half of national activities (60.3%, *N* = 47) did not lead to any official certification or CME points. This was also the case for international activities (56.4%, *N* = 44). The primary determinant of the decision to attend an activity was the topic (55.1%, *N* = 43). The reputation of the presenter and of the organizational institution played an equal role (17.9% each, *N* = 14), while the impact of official accreditation in this setting was more limited (7.7%, *N* = 6). Societies played a major role in making those activities available to participants, with 38.5% of them (*N* = 30) being informed by the societies about the learning activities. Social media were responsible for the

dissemination of the activity related information in 35.9% of the cases ($N = 28$). In 12.8% of the cases ($N = 10$), participants were contacted through online learning platform while 10.3% of the participants ($N = 8$) initiated an online search themselves before attending a specific activity.

The main reason for not attending an activity was the lack of time and increased workload (33.3%, $N = 26$) followed by the differences in time zone (29.5%, $N = 23$). Inability to isolate and technical issues were limiting factors for 10.3% of the participants ($N = 8$) each while 9% of the participants ($N = 7$) cited the same timing for two activities as the main reason for not attending an activity. The absence of official accreditation was a limiting factor for 5.1% of the participants ($N = 4$).

One participant out of two benefited from employer support. Overall, 84.7% of the participants ($N = 66$) had a very positive or positive impression while 9% ($N = 7$) were neutral. A delayed access was problematic for 34.6% of the participants ($N = 27$). Six out of ten participants considered citing the activity as a reference but 63.4% of them ($N = 26$) found it very difficult to do. 34.6% of the participants ($N = 27$) would not mention the activity on their curriculum vitae in contrast to 19.2% ($N = 15$) who would. The remaining 46.2% ($N = 36$) reported that they would selectively enlist online activities in their CVs. More than 40 suggestions that will be discussed below were submitted by participants for improving their e-learning experience.

Discussion

As the first available dataset that specifically explores the e-learning experience of vascular surgeons in the MENA region, our results highlight the needs of the MENA region vascular surgery community as well as the strengths and weaknesses of its e-learning experience. The 78 participants represent 16 countries thus giving us a global overview of the e-learning experience within the region. The geographic distribution of participants does not correspond to the population of each country or the size of the national vascular societies. The high Lebanese participation rate highlights the impact of national societies endorsement. Almost one-third of the participants are Lebanese, the equivalent of 40% of the Lebanese Society for Vascular Surgery members. Such an endorsement from the various national societies in the MENA region is crucial for any future studies. The gender disparity is evident with women vascular surgeons accounting for only 11.5% of the participants. With a female/male ratio of 1/7.7, there is a statistically significant difference with the global 1/3.7 ratio reported in EL-COVID participants ($p < 0.05$).

When the MENA results were compared to the EL-COVID global results, no statistically significant difference was found in post-training experience, number of activities attended, national of international status of the activity, activity accreditation, reasons and obstacles for participation, channels of diffusion, overall impression and ease of delayed access. The majority of participants were in practice for more than 5 years and attended more than 4 activities. The majority of the activities on both national and international levels did not offer any official accreditation. In accordance with the global survey, we found that accreditation might not be as important as a factor in deciding upon participation (7.7%, $N = 6$). The main reasons for attending were the topic of the activity followed by the reputation of the presenter of the organizational institution. Societies played a major role in reaching out to the participants followed by social media and online educational platform. Personal active search was reported in 10.3% of the cases.

Only half of the surgeons and trainees felt supported by their employer as in the majority of the MENA countries, protected time for training/education is very limited. The main obstacle for participation was the lack of time and increased workload in however significantly lower percentage than the global community. Another significant obstacle for the MENA vascular surgeons was the time zone difference ($p > 0.05$). Suggestions focused mainly on improving retrieval options as this could enable participants to bypass many of the obstacles they encountered from technical issues and inability to isolate to time zone differences, work overload, and lack of time. Many propositions went further in pointing to the need of archiving such recordings in a structured way. The need for more interaction was also highlighted in many feedbacks.

While continuous medical education traditionally followed a distributed collective mode through scientific society and highly reputed institutions, we are witnessing today a shift toward distributed individual mode where accreditation is given less importance and the physician's interest is the major drive to their participation in an activity. This, however, raises the issue of possible industry marketing interference. Novel ways of quality control need to be developed and deployed. The leadership vision also evolved with the COVID-19 pandemic favoring leaders unafraid to embark on new ventures. The COVID-19 pandemic led to the

implementation of educational and training changes within a short period of time rather than the expected years or decades we are hitherto accustomed to.

Acknowledgments

The EL-COVID team would like to formally acknowledge the support and collaboration with the following international groups and institutions: Vascupedia, Endovascology and the Lebanese Society for Vascular Surgery (LSVS). We would also like to thank the Med-PIE group (www.med-pie.com) for hosting the official EL-COVID page.

Statement of Ethics

The survey was approved by the Ethics Committee of the Primary Investigator's institution (KM140760/23-09-2021). The research complied with the guidelines for human studies and was conducted ethically in accordance with the World Medical Association Declaration.

All participants have filled in the online questionnaire voluntarily. The EL-COVID policy of data handling and archiving was in accordance to the EU GDPR requirements, and all related details were available to all participants through the EL-COVID official web page.

Conflict of Interest Statement

The authors have no conflicts of interest to declare.

Funding Sources

None.

Author Contributions

Work design (WD), data acquisition (DAc), data analysis (Dan), manuscript writing (MRi), manuscript revision(MRe), final approval (FA), agreement to be accountable (AA)

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Data Availability Statement

The data that support the findings of this study are openly available in "Data in Brief" at https://doi.org/10.1016/j.dib.2021.107442, reference number [10.1016/j.dib.2021.107442].

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