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Athens, Greece

PUBLICATIONS ROTONDA

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The results of the Greek vascular society from the vascular e-Learning during the COVID-19 pandemic (EL-COVID) survey: a comparison to the global results

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Abstract:

Introduction: The outbreak of the COVID-19 pandemic affected all aspects of life and led to a number of changes in the education and training of vascular surgeons and trainees. In order to overcome these difficulties, the internet was employed as an educational tool. The aim of this publication is to report on the results of the EL-COVID survey from vascular surgeons and trainees who are based in Greece and to compare these to the international results of this survey.

Methods: An online survey consisting of 18 questions was created in English. The survey was dispersed to vascular surgeons and trainees worldwide through social media and via direct messaging over a four-month period. Data from Greek participants were filtered, analyzed and compared to the global data using.

Results: Thirty-two participants from Greece were included and one was rejected. The majority of the participants attended more than two online activities and the feedback was mainly positive. The topic of the activity was the main reason for most of the participants to join e-Learning activities, followed by the reputation of the presenter or the panel. The acquisition of accreditation or certification was not considered as important. The majority of participants did not receive any support from their employers. There were other difficulties to participate in e-Leaning activities such as lack of time and increased workload, inability to isolate, time zone difference and others.

Conclusions: The overall appreciation of vascular e-Learning was positive despite existing weaknesses. The Greek results mostly match the international results apart from the less important role of social media in the dissemination of information within the Greek vascular society and that most Greek colleagues would easily list attended online activities in their CVs. Other minor differences between the two sets of data also exist.

INTRODUCTION

At present, the internet has become an essential part of many different aspects of our everyday lives. The employment of internet as an academic tool has also risen, but the role of e-Learning as a training modality in medicine (and especially in vascular surgery) still remains vague in Greece and abroad.[1-5] Despite the fact that sporadic publications demonstrate that e-Learning has an important role in training and education in vascular surgery, there is a lack of more systematic research.[6-10]

Since late 2019, a major disruption of daily life was caused by the Corona Virus Disease (COVID-19) pandemic. The pandemic led to many drastic changes in clinical practice and in medical training and education. The internet was adopted as a useful tool to overcome the pandemic related obstacles, especially in medical training.[2, 11, 12] e-Learning is an accepted and important tool for trainees, surgeons, institutions, and societies. In our global survey, titled the "*vascular e-Learning during the COVID-19 pandemic*" (EL-COVID) survey, we inventoried the e-Learning need of vascular surgeons and trainees as well as the strengths and weaknesses of vascular e-Learning.[9] The EL-COVID survey represented a new opportunity to study the opinion of the Greek vascular society on vascular e-Learning.

The primary aim of this study is to report on the results of the EL-COVID survey from vascular surgeons and trainees who are based in Greece. An additional aim is to compare the Greek results to the international results of this survey and provide possible explanations for any significant differences between the two.[13, 14]

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MATERIALS AND METHODS

An 18-question survey was developed by the EL-COVID primary investigator and was hosted online for a period of four months. The General Data Protection Regulation (GDPR) of the European Union was taken into consideration in preparing all materials of this research. Institutional approval was received to proceed with this publication.

A vascular e-Learning activity or distance-Learning activity was defined as any educational or training activity that take place exclusively online (either synchronous or asynchronous) and its content was related to a vascular or endovascular subject.

An online survey consisting of 18 questions was created; three questions were on demographics, 14 on the e-Learning experience, and one field for the participants' email address. The official language of the survey was English. The original questionnaire was hosted on Google Forms (Mountain View, CA).

The EL-COVID survey was advertised through social media (so.me.); primarily in LinkedIn (Mountain View, CA) and secondarily in Twitter (San Francisco, CA) and Facebook (Menlo Park, CA) for a period of four months (June 15th-October 1th, 2020). The EL-COVID collaborators contacted their respective colleagues through direct messaging on any so.me. platforms or by email. The above information was described in more detail in the official EL-COVID webpage.[15] The survey responses were filtered and submitted to descriptive analysis of percentage. Further to the main analysis, all data coming from Greece

were separately analyzed.

The Greek results of the EL-COVID survey are compared to the international results using descriptive analysis of percentages along a Chi-squared test that was performed to compare the local to the global results.

RESULTS

In total, 33 individuals from Greece have participated in the EL-COVID survey. As per the research protocol, one record was not considered valid as the respective participant did not attend any online activities during the pandemic. An overview of the results and a comparison to the international results can be seen in Table 1.

The majority of participants were male (n=28, 87.5%) and only four were female (12.5%). Most of the participants (n=13, 40.6%) were vascular surgeons with more than five years of post-training experience. Approximately one third of participants were vascular trainees (n=10, 31.3%) and the rest were vascular surgeon with less than five years of post-training experience (n=9, 28.1%). The trainees' participation was significantly higher than of their international peers ($p<0.05$).

Fifteen participants attended more than four online activities (46.8%) and the same number of peers participated in 2-4 online activities (n=15, 46.8%). Only two participants attended 1 online activity (6.25%). Greek participants who attended 2-4 online activities were more than the international average ($p<0.05$).

Twenty-seven individuals (84.3%) of the participants attended national e-Learning activities even though only one of these cases led to an official accreditation (3.1%). Twenty-three participants (71.8%) attended international e-Learning activities, but the majority of them did not have any official accreditation (n=14, 60.8%).

The criterion for attending any e-Learning activity was based mainly the interest of the activity topic (n=16, 50%), followed by the reputation of the institution (n=13, 40.6%) and by the reputation of the presenter (n=3, 9.4%). [Fig 1] The latter two were significantly ($p<0.05$) higher and lower than the average international percentage, respectively.

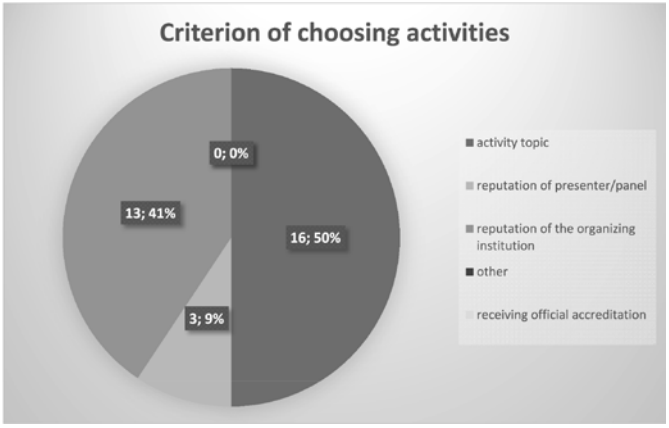

Figure 1: criterion of choosing activities

The majority (n=18, 56.25%) found the attended online activities through direct contact from national/international society, followed by social media (n=6, 18.75%), through online educational platforms (n=4, 12.5%), word of mouth and actively searched for activities from well-known institutions with the same percentage each (n=2, 6.25%). [Fig 2] The role of societies and so.me. in the Greek cohort are placed first and second, while the opposite order is demonstrated in the international results. This difference is statistically significant as seen in Table 1.

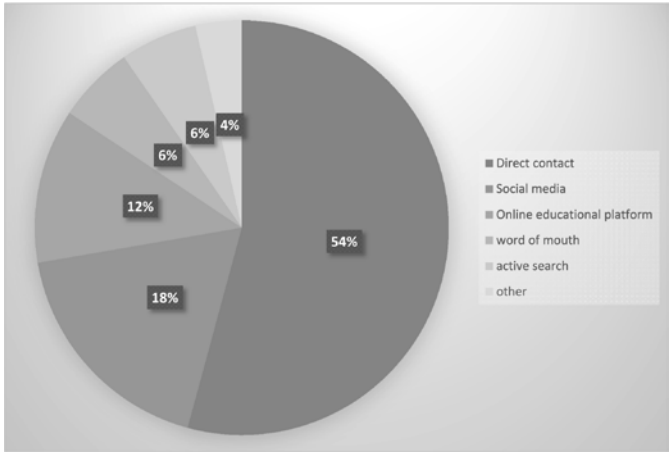

Figure 2: means of information dissemination

More than half of the participants (n=18, 56.25%) stated that employers did not support attending online activities through protected/allocated time. [Fig 3] This findigns is similar to the international average.

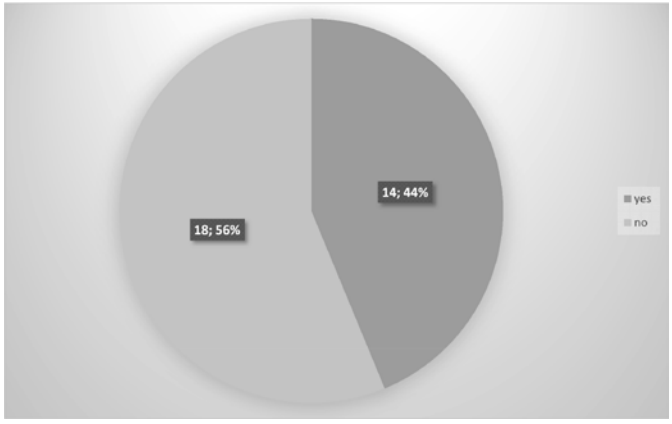

Figure 3: employers support

The main reason that led participants not to attend an e-Learning activity was the lack of time due to increased workload (n=23, 71.9%), followed by the inability to isolate (n=5, 15.6%), time zone differences (n=3, 9.7%) and more than one educational activity scheduled to take place at the same time (n=1, 3%). [Fig 4] Lack of time/increased workload was the main reason in both the Greek and the international results, but it was significantly higher in the Greek cohort ($p<0.05$). The inability to isolate was reported two-fold higher to the

international average (p<0.05). Simultaneous activities and time-zone difference ranked lower for the Greek participants (both p<0.05) compared to their international colleagues.

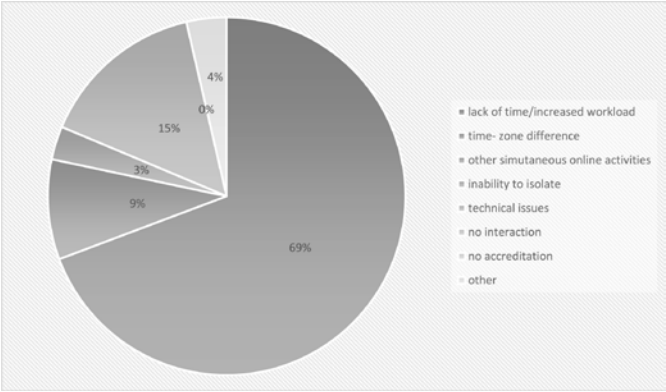

Figure 4: reasons for not attending

Two thirds of participants had a positive attitude towards vascular e-Learning but with room for improvements (n=20, 62.5%). One third reported their appreciation was very positive and that e-Learning activities could replace traditional activities in some subjects (n=9, 28.1%). A minority expressed a neutral (n=2, 6.25%) or a very negative opinion of online activities (n=1, 3.1%). [Fig 5] The percentage of Greek participants who had a positive or very positive opinion was statistically higher compared to the international results (p<0.05).

Access to an interesting previously-attended online activity was easy in most of the cases (n=18, 56.25%), very hard in five cases (15.6%), hard in four (12.5%), impossible in two (6.25%) and very easy in three (9.4%). Citing an online activity was hard for 14 of the participants (43.7%). Six of the participants (18.75%) found it easy to cite online activities. Twelve of the participants (37.5%) would not usually cite a presentation as a valid source. These results were similar to the international ones.

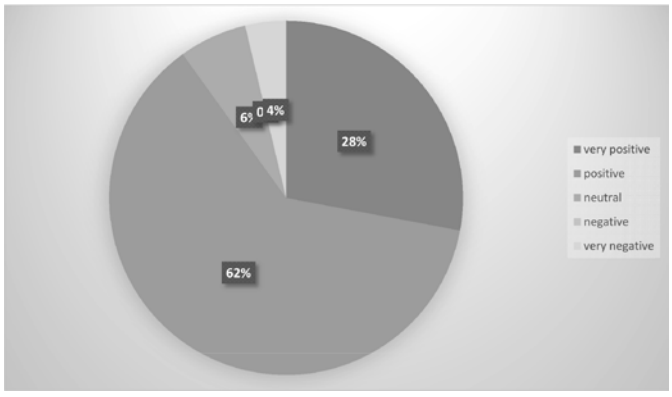

Figure 5: overall impression of the online activities

Most of the participants would only list some of the attended online activities in their CVs (n=22, 68.75%), e.g. those with official accreditation. This finding is statistically higher than the international average (p<0.05). Half of the rest of the participants (n=5, 15.6%) answered that they would definitely list all attended online activities in their CVs. The rest five participants (15.6%) would not list any online activities.

A number of potential improvements of the e-Learning activities were recorded. Proper timekeeping was the most frequent point (n=4, 12.5%), with overall interaction mentioned by three participants (9.4%). Other points included registration process, attendance certification, protected time provided by the employers, live cases and case reports.

		Greek (n=32)	International (n=856)	p
Male gender		28 (87.5%)	673 (78.6%)	NS
Level of experience				
	>5yrs of post training-experience	13 (40.6%)	482 (56.3%)	<0.05
	<5yrs of post training-experience	9 (28.1%)	213 (24.9%)	NS
	Trainees	10 (31.3%)	161 (18.8%)	<0.05
Attendance				
	>4 activities	15 (46.8%)	461 (53.9%)	NS
	2-4 activities	15 (46.8%)	300 (35%)	<0.05
	1 activity	2 (6.25%)	95 (11.1%)	<0.05
Criterion for attendance				
	Topic of the activity	16 (50%)	440 (51.4%)	NS
	Reputation of speaker/panel	3 (9.4%)	178 (20.8%)	<0.05
	Reputation of organizing institution	13 (40.6%)	65 (19.3%)	<0.05
	Offiicical certification/accreditation	-	52 (6.1%)	<0.05
	Other	-	21 (2.5%)	

Dissemination of information				
	Direct contact by society	18 (56.25%)	325 (38%)	<0.05
	Social Media	6 (18.75%),	251 (29.3%)	<0.05
	Online educational platforms	4 (12.5%)	132 (15.4%)	NS
	Word of mouth	2 (6.25%)	63 (7.4%)	NS
	Active search	2 (6.25%)	57 (6.7%)	NS
	Other	-	28 (3.3%)	
Support by employer				
	No	18 (56.25%)	488 (57%)	NS
	Yes	14 (43.75%)	368 (43%)	NS
Reasons for not attending				
	Lack of time/Increased workload	23 (71.9%)	432 (50.5%)	<0.05
	Time-zone difference	3 (9.7%)	157 (18.3%)	<0.05
	Simultaneous online activities	1 (3%)	97 (11.3%)	<0.05
	Inability to isolate	5 (15.6%)	79 (9.2%)	<0.05
	Technical issues	-	25 (2.9%)	NS
	Other	-	64 (7.4%)	
Overall appreciation				
	Positive or very positive	29 (90.6%)	726 (84.7%)	<0.05
	Neutral	2 (6.25%)	100 (11.7%)	<0.05
	Negative or very negative	1 (3%)	30 (3.6%)	NS
Access to previously attended activites				
	Easy or very easy	21 (65.65%)	585 (68.4%)	NS
	Hard or very hard	9 (28.1%)	195 (22.8%)	NS
	Impossible	2 (6.25%)	76 (9.8%)	NS
Citing an online activity				
	Easy	6 (18.75%)	220 (25.7%)	<0.05
	Hard	14 (43.7%)	295 (34.5%)	<0.05
	Would not cite online activities	12 (37.5%)	453 (52.9%)	<0.05
Inclusion of online activities in CV				
	Yes	5 (15.6%)	162 (18.9%)	NS
	No	5 (15.6%)	241 (28.2%)	<0.05
	Only specific activities	22 (68.75%)	453 (52.9%)	NS

NS: Not significant, CV: Curriculum Vitae

Table 1: Overview of the Greek results and comparison to the International results

DISCUSSION

Greek participation to the EL-COVID survey was significant (n=33, 3.9%) compared to other larger countries. The demographics of the Greek participation was similar to the international results of the survey: male preponderance with the majority of participants being vascular surgeons with more than five years of experience. The participation of trainees was almost double of the international average- a statistically significant finding - although trainees participation was lower than what reported in previous similar studies.[16]

Approximately half of the participants attended more than four online activities which is equivalent to the international results. The other half of the participants attended 2-4 online activities, a rate higher than the international average. As a result, we could presume that our Greek peers have attended more online activities than the average participant, although this assumption should be considered with some caution.

Greek peers attended national and international online activities in approximately equal rates although the vast majority of both these activities did not offer any official ac-

creditation or certificate. National activities attendance was higher than the average international rate, but the difference was statistically insignificant. Significantly lower was the percentage of national or international activities offering official accreditation or certificate that were attended by the Greek vascular peers. This finding along with the fact that the main criterion for attending an online activity was the topic of the activity could lead to the conclusion that Greek vascular surgeons and trainees attend the online activities they consider interesting disregarding whether this activity lead to official accreditation.

Apart from the activity topic, the second criterion for Greek peers to attend an online activity was the reputation of the presenter/panel and the reputation of the institution behind the activity, but the rates of these criteria were significantly different to the international average. Greek colleagues considered two-fold more important the reputation of the institution compared to their international peers, while the reputation of the presenter/panel was half the international average. In the Greek cohort, official accreditation/certificate played a less important role as a criterion for attending an activity.

Greek peers seem to depend more than their average international colleague national societies to get informed on upcoming online activities and less on social media. It is not surprising that the *Hellenic Society of Vascular & Endovascular Surgery*, the *Hellenic Angiological Society* and the *Hellenic Phlebological Society* do not have an active presence in so.me.. The role of educational/training platforms and the direct dissemination of information did not differ significantly between the Greek and the international vascular surgeons and trainees.

Alike their international counterpants, Greek employers did not generally support their staff in attending an online activity. Before the pandemic, Greek physicians would normally apply for an educational/training leave in order to physically attend workshops or congresses. In the pandemic era, when physical presence was either discouraged or forbidden, physicians could not follow a similar procedure to acquire protected time to attend an online activity, as such a process does not exist. Therefore, protected time is not available for online activities and physicians have to schedule their clinical work to accommodate such an activity.

The main reason for not attending an online activity was the lack of time/increased workload; a reason consistent with the international average. This could be the result of redirecting all medical staff (including vascular professionals) to supporting other specialties in treating COVID patients or directly be involved in the pandemic when available staff was limited. The second more important reason for Greek peers was the inability to isolate at a rate two-fold higher to the international average. Simultaneous activities and time-zone difference did not play a major role for the Greek participants.

The overall appreciation of online activities was very positive or positive in 90% of the Greek participants despite the novelty that vascular e-Learning persists to be in our country; a rate higher than the international average and consistent to previously reported local findings.[16]

Greek and international participants reported similar rates of difficulty in accessing previously attended online activities, with approximately two thirds considering it very easy or easy to do so. Greek participants are less hesitant than their international counterpants to cite an online activity as a source of information. A higher percentage of Greek participants would cite such an activity, despite considering it difficult to do so.

Significantly higher percentage of Greek participants would list some of the attended online activities in their CVs - e.g. those with official certificate. A possible explanation of why Greek participants would list online activities on their CVs more easily than their international counterparts could be that the medical staff recruitment process in the Greek public hospitals benefits those physicians who participated in a larger number of continuous medical education (CME) activities. As expected, this benefit is even more prevalent when physicians apply for academic posts. Therefore, listing as many CME activities as possible in their CVs gives physicians a greater opportunity to be recruited by the institutions of their preference.

The Greek participants also expressed some point of potential improvement for vascular e-Learning in the future and these points coincide with the ones coming from other parts of the world, demonstrating that the inbred weaknesses of e-Learning (e.g. isolation and lack of interaction) persist.

Apart from its deadly statistics and the socioeconomic challenges, the pandemic was an opportunity for e-Learning to be widely developed and deployed. The medical field employed e-Learning. Despite the weaknesses, the overall appreciation of e-Learning was positive across medical specialties as demonstrated by a number of systematic reviews.[5, 17-22] In general, the current findings coincide with the reported results of these publications. The next research step would be to research the efficacy and efficiency of individual tools of e-Learning in vascular surgery.

CONCLUSIONS

The overall appreciation of vascular e-Learning was positive despite existing weaknesses. Compared to the international results of the EL-COVID survey, the Greek results mostly match the international results apart from the less important role of so.me. in the dissemination of information within the Greek vascular society and that most Greek colleagues would easily list attended online activities in their CVs. Other minor differences between the two sets of data also exist.

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