

# Effects of an awareness symposium on perception of Libyan physicians regarding telemedicine

A.M. El Gatit,<sup>1,2</sup> A.S. Tabet,<sup>3</sup> M. Sherief,<sup>3</sup> G. Warieth,<sup>3</sup> M. Abougharsa<sup>3</sup> and H. Abouzgaia<sup>3</sup>

تأثيرات ندوات رفع مستوى الوعي على إدراك الأطباء الليبيين للتطبيب عن بُعد  
عبد السلام القطيوط، عبد السلام الثابت، منى الشريف، غادة وريث، منى أبو غرسة، هالة أبو زقية

**الخلاصة:** يُعدُّ رفع مستوى الوعي بين القائمين على تقديم الرعاية الصحية، ولاسيما الأطباء منهم بالتطبيب عن بُعد، أمراً بالغ الأهمية لتطوير هذا النوع من التطبيب. وقد وزع الباحثون استبيانات على الأطباء الليبيين المشاركين في ندوة طبية حول التطبيب عن بُعد عقدت في المدة من 28 شباط/فبراير إلى الأول من آذار/مارس 2005. وتكونت عينة المشاركين من 28 طبيباً و13 طبيبة يمارسون اختصاصات مختلفة ويعملون في أنحاء مختلفة من ليبيا. وأوضحت الإجابات أن معظم المشاركين كانوا يعانون من عدم وضوح (53.7%) أو عدم إطلاع في ما يختص بالتطبيب عن بُعد (14.5%) قبل حضورهم الندوة. وبعد مشاركتهم بالندوة انخفض عدد من يعاني من عدم الوضوح ليصل إلى 12.2% فيما أبدى 39.0% منهم تفهماً ممتازاً لهذا الأمر، و48.8% منهم تفهماً لا بأس به. وقد أوضح 97.6% من المشاركين دعمهم لتطبيق التطبيب عن بُعد في البلاد مع تقدير أهميته في توطيد الخدمات الصحية في المناطق النائية.

**ABSTRACT** The awareness of health care providers, particularly physicians, towards telemedicine is pivotal to its development. In this study we distributed questionnaires among Libyan physicians attending a medical symposium on telemedicine, held in the period 28 February–1 March, 2005. The sample comprised 28 males and 13 females from different specialties and from different parts of the country. Most reported being confused (53.7%) or unaware (14.6%) regarding telemedicine before the symposium. Afterwards, 12.2% were confused, 39.0% showed excellent understanding and 48.8% reported fair understanding; 97.6% supported the implementation of telemedicine in the country and appreciated the importance of establishing remote health services.

## Effets d'un colloque de sensibilisation sur la perception de la télémédecine par les médecins libyens

**RÉSUMÉ** La sensibilisation des prestataires de soins de santé à la télémédecine, en particulier celle des médecins, joue un rôle essentiel dans le développement de cette pratique. Pour cette étude, nous avons distribué des questionnaires à des médecins libyens qui participaient à un colloque médical sur la télémédecine organisé du 28 février au 1<sup>er</sup> mars 2005. L'échantillon était constitué de 28 hommes et de 13 femmes représentant différentes spécialités et venant de différentes parties du pays. Avant le colloque, la plupart d'entre eux déclaraient ne pas savoir quoi penser (53,7 %) ou ne rien savoir (14,6 %) de la télémédecine. Après, 12,2 % restaient perplexes, 39,0 % avaient d'excellentes connaissances sur cette pratique et 48,8 % disaient en avoir une bonne compréhension ; 97,6 % soutenaient sa mise en place dans le pays et estimaient important de créer des services de santé à distance.

<sup>1</sup>Department of Surgery and Cardiovascular Unit, Faculty of Medicine, Omar Al-Mokhtar University, Tobruk, Libyan Arab Jamahiriya (Correspondence to A.M. El-Gatit: drelgatit@yahoo.co.uk, abdul2309@hotmail.com, abdulislam@elgatit.net).

<sup>2</sup>Department of Telemedicine, Libyan General Medical Council, Tripoli, Libyan Arab Jamahiriya.

<sup>3</sup>Misurata Teaching Hospital, Misurata, Libyan Arab Jamahiriya.

Received:20/07/05; accepted: 12/04/06

## Introduction

Telemedicine is defined as “the use of electronic communication and information technologies to provide or support clinical care at a distance” [1]. Tele-health, a broader concept, is defined as “the use of electronic information and telecommunications technologies to support long-distance clinical health care, patient and professional health-related education, public health and health administration” [1]. These 2 developments have great potential to change structures, procedures, and eventually outcomes in healthcare systems worldwide.

Owing to factors such as lack of knowledge and interest by health professionals, these e-health innovations are still dominated by committed efforts of research and development conducted by pioneers. Other factors have contributed in the inhibition of the telemedicine and tele-health industry from reaching its full global potential. These include lack of significant reimbursement, cross-state licensure problems, privacy issues, lack of universal standards and high transmission costs [2]. However, since 1999 there has been a steady growth in interest among the international medical community in the potential application of these innovations [3], and some telemedicine concepts and applications have already been implemented in clinical routine or are ready to be implemented [4,5].

In the Libyan Arab Jamahiriya, which is facing an era of health reformation and restructuring, telemedicine is one of the notions relied upon to facilitate health promotion. This is shown in the establishment of governmental bodies specialized in providing telemedicine services aiming to connect the major hospitals with rural areas and in the establishment of a telemedicine department in the Libyan General Medical Council.

The extent of knowledge in Libyan health care providers regarding telemedicine and their readiness to implement it in daily clinical practice and in medical education has not been explored. This study was designed to evaluate the knowledge and attitudes of Libyan physicians towards telemedicine and to assess the influence of education on their knowledge and attitudes towards the subject.

## Methods

We distributed pre-prepared questionnaires to assess the knowledge and attitudes of the participant doctors towards telemedicine during the Tele-Cardio Symposium which was organized by the Libyan Cardiac Society in Misurata, Libyan Arab Jamahiriya, during the period 28 February–1 March 2005. The questionnaire was in 2 parts: part A covered personal data, and part B comprised 2 questions formulated to assess the level of previous knowledge regarding telemedicine and whether the participant agreed about establishing telemedicine in Libya.

The question on knowledge of telemedicine was assessed on a 4-part scale: “none”, “confused”, “fair”, and “excellent”. The second question was answered either “yes” or “no”. The same questionnaire was redistributed among the participants at the end of the symposium during the final proceedings to evaluate the influence of the meeting on their knowledge and attitudes.

The symposium comprised 22 dedicated lectures on telemedicine: the “virtual Euro-Mediterranean hospital” concept was introduced, the telecardiac experiences of Great Ormond Street Hospital were outlined and the Italian “Telecardio Sea Project” was also demonstrated. Professor N.D. Giovanni, the scientific adviser of

the project demonstrated the satellite DC shock which, in the event of cardiac arrest in the middle of the sea, connects to the 24-hour Sea Project centre where direct resuscitation guidance will be provided to save the victim. The programme has been published as an abstract book [6].

### Statistical analysis

All results were expressed as percentages. Comparisons were made using the simple *t*-test. *P*-values < 0.05 were considered significant. Mean, standard deviation and *t*-test were evaluated using *Microsoft Excel*.

## Results

### Study sample

All the participants returned completed questionnaires both before and after the conference and agreed to supply personal details (which was optional). The sample comprised 41 Libyan physicians from different parts of the country, 28 males (68.3%) and 13 females (31.7%). Age range was 25–55 years, mean 37.3 (standard deviation 3.4) years.

Cardiologists, 6 (14.6%), or paediatric cardiologists, 11 (26.8%), made up the greater proportion of the participants. The other medical specialties were represented in approximately equal numbers. There were 18 consultants, 5 senior registrars, 3 registrars, 11 senior house officers and 4 house officers.

Geographically, most of the participants, 47.4% (*n* = 18), were from the capital city, Tripoli, or from the symposium-hosting city Misurata 34.1% (*n* = 14). Three were from Benghazi, 2 from Tobruk, and 1 from each of Sebha, El Zawaya, Sert and Zletin.

Table 1 Participants' perception of telemedicine before and after the symposium

Perception of telemedicine	Before		After	
	No.	%	No.	%
<i>Understanding</i>				
Excellent	3	7.3	16	39.0
Fair	10	24.4	20	48.8
Confused	22	53.7	5	12.2
Unaware	6	14.6	0	–
<i>Attitude to introduction</i>				
Agree	2	4.9	40	97.6
Disagree	39	95.1	1	2.4

*P* < 0.05 for all categories.

### Attitude and perception towards telemedicine

Before the symposium, 22 of the participants (53.7%) reported they were confused about telemedicine; and 6 (14.6%) were completely unaware. Afterwards, no-one was still unaware of telemedicine, and 36 (87.8%) reported excellent or fair understanding (*P* < 0.05 for all) (Table 1).

Before the symposium, 39 of the 41 participants (95.1%) said they did not support the establishment of telemedicine facilities in Libyan hospitals. Following the meeting, 40 (97.6%) supported the scheme (*P* < 0.05) (Table 1).

## Discussion

If health modernization is established as a key health policy objective in Libya, it is important to ensure that health care providers are ready to acknowledge and support the new radical instrumental and administrative changes, which will not only change current medical practice but also

professional behaviour. Recent advances in information and communication technology, particularly telemedicine and telehealth, have been seen as key mechanisms by which these changes can be engendered [4]. Directed investment in telemedicine and telehealth promises the rapid distribution and deployment of patient-centred information across internal organizational boundaries towards global health care [7].

This preliminary report suggested that the knowledge and perception of Libyan doctors concerning telemedicine was extremely low, and even those who had some knowledge, were rather confused. However, the positive responsiveness of all those who participated in the study indicates the readiness of Libyan doctors to cooperate to further their knowledge.

The study sample, though small, represented most of the medical specialties and the main cities. In order to obtain a clearer picture, however, a comprehensive study involving a larger, randomized spectrum of physicians is required.

In this study, it was very interesting to note the significant influence of the symposium on the participants. Both perception and

attitudes towards telemedicine improved markedly following the meeting. In other studies exploring physicians' perception towards telemedicine in different countries, it was found to vary from conservative to optimistic [8–10]. Physicians perception remain one of the major barriers to the diffusion of telemedicine, and therefore knowing that Libyan doctors are cooperative and agreeable to participating in open studies, and that with education may change their attitudes indicates that the path towards introducing these innovations may not be so arduous.

## Acknowledgements

We wish to express our sincere gratitude to Dr Ibrahim Al Sharef, chairman of the Libyan General Medical Council, for supporting the international telecardio symposium and this study. We are also indebted to Mr Yousef Elgait, head of the Public Health Department of the High Institute of Medical Technology, Misurata and Mr Arafat of the Ministry of Health in Misurata, for helping us prepare the questionnaire.

## References

1. Scavini S et al. Telemedicine: a new frontier for effective healthcare services. *Monaldi archives for chest diseases*, 2004, 61(4):226–33.
2. Kennedy CA. The challenges of economic evaluations of remote technical health interventions. *Clinical and investigative medicine*, 2005, 28:71–4.
3. Brown NA. Information on telemedicine. *Journal of telemedicine and telecare*, 2005, 11:117–26.
4. Shershneva MB, Olson CA. Education through telemedicine networks: setting quality standards. *Journal of telemedicine and telecare*, 2005, 11:127–34.
5. Langer B, Wetter T. Physicians' attitudes towards health telematics—an empirical survey. *Studies in health technology and information*, 2000, 77:1106–11.
6. El Gatit A et al. *Telecardio international symposium*. Misurata, Libyan Cardiac

- Society, Misurata Chamber of Commerce, 2005.
7. Wooton R et al. Logistical aspects of large telemedicine networks. 1: Site directories. *Journal of telemedicine and telecare*, 2002, 8(Suppl. 3):77–80.
  8. Richards H et al. Remote working: survey of attitudes to eHealth of doctors and nurses in rural general practices in the United Kingdom. *Family practice*, 2005, 22(1):2–7.
  9. Collins K, Bowns I, Walters S. General practitioners' perceptions of asynchronous telemedicine in a randomized controlled trial of teledermatology. *Journal of telemedicine and telecare*, 2004, 10:94–8.
  10. Hannis MD et al. Physician attitudes regarding telephone medicine. *Journal of general internal medicine*, 1996, 11(11):678–83.

### **Eastern Mediterranean Region Observatory on Human Resources for Health**

The Observatory on Human Resources for Health (URL: [http://www.emro.who.int/hrh-obs/hrh\\_about.htm](http://www.emro.who.int/hrh-obs/hrh_about.htm)) is a governance tool to complement the Health System Observatory for continuously collecting, updating and disseminating key information into one consolidated electronic source. While the content of the Observatory on Human Resources for Health covers primarily country profiles pertaining to health workforce dynamics, it offers an analytical platform needed for evidence-based health workforce planning with policy and regulatory implications. The Observatory will assist WHO Member States in using a proactive approach to tackle HRH-related challenges. It is an up-to-date Regional resource on numbers, significant correlations between major health workforce determinants and ratios, with an operational and policy linkage to national benchmarks and Regional targets. The aim is not merely to disseminate information but rather to facilitate continuous sharing of models that have worked well and successful experiences in resolving related problems.