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Short communication

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ABSTRACT Evidence-based medicine (EBM) has emerged as a strategy to integrate research evidence within clinical decision-making. We have explored awareness, knowledge and attitudes about EBM among doctors in the Gaza Strip. In 2014, we conducted a cross-sectional survey among doctors working in health centres in Gaza, using a 20 item, web-based self-administered questionnaire. Approximately two thirds of the respondents welcomed EBM in principle, and believed that it could improve patient care. However, they had a relatively low level of knowledge about EBM. The main barriers to EBM mentioned by respondents were lack of knowledge needed to practise EBM [n = 47 (35%)]; negative attitude among senior colleagues [n = 34 (25%)]; lack of relevant resources [n = 31 (23%)]; work overload [n = 27 (20%)]; and lack of institutional support [n = 248 (18%)]. Thus, there are personal and

organisational barriers to its practice that need to be addressed.

Prise de conscience, attitudes et connaissances des médecins dans la Bande de Gaza au sujet de la médecine factuelle

RÉSUMÉ La médecine factuelle a émergé comme stratégie visant à intégrer les données issues de la recherche dans la prise de décision clinique. Nous avons étudié la prise de conscience, les attitudes et les connaissances des médecins dans la Bande de Gaza concernant la médecine factuelle. En 2014, nous avions conduit une enquête transversale auprès des médecins travaillant dans des centres de santé à Gaza, au moyen de questionnaires auto-administrés en ligne composés de 20 items. Près des deux tiers des répondants accueillaient, en principe, favorablement la médecine factuelle et pensaient qu'elle peut améliorer les soins dispensés aux patients. Toutefois, leurs connaissances concernant la médecine factuelle étaient faibles. Les principaux obstacles à la médecine factuelle mentionnés par les répondants étaient l'absence des connaissances concernant la pratique de la médecine factuelle [n = 47 (35 %)]; l'attitude négative chez les collègues de rang plus élevé [n = 34 (25 %)]; le manque de ressources adaptées [n = 31 (23 %)]; la surcharge de travail [n = 27 (20 %)]; et l'absence de soutien institutionnel [n = 248 (18 %)]. Il existe donc des obstacles personnels et organisationnels concernant la pratique de ce type de médecine qui devraient être pris en compte.

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Introduction

Evidence-based medicine (EBM) is the integration of clinical expertise with the best available evidence and patients' values and preferences in making clinical decisions (1,2). It is now widely regarded as a core competency for effective health care (3). EBM is based on 5 main steps ("the 5As"). 1) Ask: translate an uncertainty into an answerable clinical question, 2) Acquire: find the best available relevant evidence, 3) Appraise: critically appraise the evidence, 4) Apply: apply the appraised evidence to clinical practice, and 5) Assess: evaluate the performance of this process (1).

The desperate health situations in resource-limited countries (among which Palestine is one) tend to trivialize EBM as just another Western innovation of little value and high cost (4). However, it is exactly in these situations, in which health problems are severe and resources are scarce, that the need for EBM is especially important (5). About 1.9 million people live in the Gaza Strip, two thirds of whom are refugees, and the population increases by 4% a year (6). The quality of primary and secondary medical care is variable, and tertiary care is often rudimentary (7). The practice of EBM in such situations could ensure that limited resources are not wasted by ordering unnecessary tests or prescribing inappropriate treatments. Good use of resources will be enhanced by making evidence-based decisions that improve patients' quality of life and lifespan.

A systematic review of self-reported appreciation of EBM, which included 31 studies, found that many health professionals worldwide welcomed EBM, however, the actual implementation of EBM in clinical practice was still deficient (8). In addition, a systematic review of 106 studies investigating barriers to the implementation of EBM identified lack of knowledge, resources, time and skill as the main barriers (9).

In February 2011, an Evidence-Based Medicine Unit was established in Gaza with the endorsement of the deans of both local medical schools at the time. The EBM Unit's broad mission was to promote EBM among health professionals through various activities, including lectures, workshops, conferences and training courses for both undergraduates and postgraduates (10). The main objective of this study was to explore awareness, attitudes and knowledge about the principles of EBM among doctors in Gaza.

Methods

Study design and sample

A cross-sectional survey was conducted – using a convenience sampling technique – among medical doctors in Gaza between August and November 2014. Practising doctors working in health centres affiliated with the Ministry of Health, The United Nationals Relief and Works Agency (UNRWA), and academic and private sectors in Gaza, were eligible for inclusion. Questionnaires were sent by email to 250 doctors who had participated in recent medical conferences. The survey questionnaire was also posted on the most popular social media used by professionals, which included about 1 250 doctors.

Questionnaire

A 20-item, self-administered, web-based questionnaire was used to assess doctors' awareness,

attitudes and knowledge about EBM. Our questionnaire was based on one used by McColl et al, (11), which had been tested and used in similar regional and international studies (12–14). An Arabic translation of the main questions was added to the questionnaire, which was reviewed and tested by a sample of doctors (questionnaire available on request from the authors). Google Form® was used to create the online questionnaire.

The questionnaire had 3 sections: 1) personal and professional characteristics; 2) attitudes towards EBM and the use of research findings in clinical practice; and 3) knowledge about the potential resources for EBM and understanding of EBM technical terms. The majority of the items were scored using a 5-point Likert scale (ranging from 1 = strongly agree to 5 = strongly disagree) and were dichotomized for analysis with a cut-off value ≤ 3 indicating agree, similar to that used in previous studies (15,16). Internal consistency of the questionnaire was evaluated using Cronbach alpha (Cronbach alpha coefficient = 0.78).

Analysis

Frequencies and percentages were used to describe categorical data and the chi-squared test was used to test statistical significance between groups. A P-value

There was no a priori sample size calculation. However, a post-hoc statistical power calculation showed that a study with a sample size of 135 participants had a confidence level of 95% to detect a difference with an 8% margin of error.

Results

The total number of doctors in Gaza in 2014 was 3 809 (6). We estimated that we approached about 1 500 (39%) of these using email lists and social networks. Although the questionnaire was viewed 964 times, it was completed by only 135 (9%) doctors of the estimated 1 500 approached.

Characteristics of the participants

Of the 135 respondents, 116 (86%) were men, 104 (77%) were younger than 30 years, 61 (45%) held a postgraduate degree or higher qualification, 102 (76%) worked in a governmental health care setting or UNRWA, and 117 (87%) were residents-in-training or non-specialist medical practitioners (Table 1). Compared with the best estimates of the characteristics of the general population of doctors in Gaza (6,17,18, personal communication, Dr Khamis ElEssi, 2016), more doctors in our sample were under 30 years (77% versus 25%), were non-specialists/residents-in-training (87% versus 65%), were working in UNRWA (26% versus 6%) and had graduated from universities in Palestine or other Arab countries (92% versus 45%).

Awareness of and attitudes towards EBM

Table 2 shows the attitude of the participating doctors to EBM overall and by age group:

Most of the 135 respondents (73%) welcomed the current promotion of EBM, and 67% believed that their colleagues welcomed it too. The majority (77%) thought that EBM was useful in their daily practice, and 81% believed it improved patient care. Most respondents (62%) claimed that more than half of their clinical practice was evidence-based. However, 67% thought that practising EBM placed demands on already overloaded doctors. Significantly more doctors younger than 30 years reported that EBM placed demands on their already overloaded schedules compared with doctors 30 years and older (P = 0.0176). Otherwise, there were no statistically significant differences between the 2 age groups.

Knowledge about EBM and understanding of EBM technical terms

Figure 1 shows that more than half of the respondent doctors reported that they understood most of the EBM technical terms. The terms “odds ratio” and “heterogeneity” were the least understood, whereas “systematic review” was best understood. The majority of the respondents who did not understand a term expressed their desire to understand it. Between 9% and 24% of the respondents felt able to explain these terms to others.

Practice of EBM

About half (66; 49%) of the respondents doctors reported having searched one of the medical databases (e.g. PubMed) every week during the past year. Most of them (105; 78%) had access to these databases at their workplace, but only 43 (32%) had access to them at home. Only 36 (27%) had received formal training in EBM; of these, 23 (64%) had been trained through the EBM Unit in Gaza.

Barriers to EBM

Table 2 shows the perceived barriers to EBM overall and by age group:

The main perceived barriers to practising EBM among the whole sample were insufficient knowledge and skills (35%), negative attitudes to EBM among some colleagues, especially the most senior colleagues (25%), limited resources, such as free access to databases or libraries (23%), work overload (20%) and lack of managerial and institutional support (18%). There were no significant differences noted between the 2 age groups (**Discussion**

Our study is the first to explore awareness, attitudes and knowledge about the principles of EBM among doctors in Gaza. Compared with doctors in Gaza in general, the respondents in our

survey were younger, more junior and more likely to have graduated in Palestine or another Arab country. Among this self-selected population, we found a positive attitude to EBM, and this finding concurs with those of a recent systematic review of self-reported appreciation of EBM. This systematic review also found that the general attitude towards EBM was welcoming in 15 out of 31 studies included in the review (8). Despite the positive attitudes to EBM among our respondents, their knowledge about common EBM terms was substantially lower than the average level among doctors who had participated in the studies included in the systematic review (Figure1), and there appears to be limited application of EBM principles in clinical practice in Gaza.

The barriers faced by doctors in Gaza (lack of knowledge, skills, access, and professional and organizational support) were similar to those reported in another systematic review which included 106 studies investigating barriers to EBM among health professionals (9). This found that lack of EBM knowledge, skills, resources, time and access were the most common barriers to EBM. In addition, electricity and access to the Internet is intermittent and uncertain in Gaza because of the ongoing blockade of the territory.

The main strength of our study is our use of a robust, validated and reliable questionnaire (11), enabling us to compare our results with those obtained elsewhere. The main limitation is that our sample of respondents is not representative of all doctors in Gaza. Those who did respond were probably more likely than average to be interested in EBM and more likely to have overestimated their knowledge and skills in EBM (19). Because of these differences, we cannot generalize our findings to all doctors in Gaza. In addition, we were unable to accurately calculate the response rate as we recruited our participants by a convenience sample involving their professional social networks. We estimated the participation rate in our survey using methods recommended by the Checklist for Reporting Results of Internet E-Surveys (20). However, it is worth noting that a systematic review did not find any association between response rates in included studies and attitudes and knowledge about EBM (8). The correlation between the response rate and response bias is imperfect, especially in Internet surveys, which are expected to achieve lower response rates than paper-based surveys (21).

Although our survey findings are based on a limited number of admittedly unrepresentative respondents, we suggest that they provide pointers to ways in which EBM could be embedded more firmly in teaching curricula and clinical practice in Gaza.

EBM needs to be championed by senior doctors and academics and integrated throughout the undergraduate and postgraduate medical curricula.

The Palestinian Medical Council should incorporate EBM in all specialty training programmes for medical residents.

Education about EBM and training courses in critical appraisal should be used to improve the EBM knowledge and skills of clinicians.

Hospital libraries and medical librarians should provide access to evidence databases (e.g. Cochrane Library) and other resources.

The EBM Unit in Gaza should include all health care disciplines (e.g. nursing, physiotherapy, pharmacy and librarians) in its work, thereby promoting an improved environment for multidisciplinary teams working collaboratively to apply EBM principles in health centres.

Conclusion

Despite the welcoming and supportive attitudes to EBM reported by Gaza doctors who participated in our survey, personal and organizational barriers operate against the practice of EBM. Our survey has identified a number of ways in which it may be possible to extend support for teaching and use of EBM in Gaza.

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