

Lifestyle medicine and physical activity knowledge of final year UK medical students

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ABSTRACT

Objectives It has previously been reported in the *British Journal of Sports Medicine* that final year UK medical students are lacking knowledge of the physical activity guidelines. This study assesses whether the knowledge and training of final year UK medical students has improved, whether knowledge correlates with lifestyle choices and whether there is a need for lifestyle medicine training, which includes physical activity guidance, to be offered to this cohort.

Methods A questionnaire consisting of nine key questions was sent to 1356 final year medical students from seven different UK medical schools.

Results Completed questionnaires (n=158) were analysed and revealed that 52% were unaware of the current exercise guidelines in the UK. 80% stated they had not received training in lifestyle medicine over the last 2 years while 48.1% were unacquainted with motivational interviewing. 76% wanted more lifestyle medicine teaching to be incorporated into the medical school curriculum.

Conclusions These findings suggest that final year UK medical students still lack knowledge of the physical activity guidelines. In addition, there is a demand among this cohort for increased lifestyle medicine training which may in turn be an effective way of improving physical activity knowledge.

What this study adds

- ▶ In line with the previously published data, final year UK medical students remain unfamiliar with recommended physical activity guidelines.
- ▶ The majority of students have not received training in exercise and lifestyle medicine even though the students want more lifestyle medicine teaching to be incorporated into the medical school curriculum.
- ▶ Further interventions are required for medical students to receive sufficient training in physical activity and lifestyle medicine

to prevent depression and may reduce symptoms of anxiety.^{9 10}

The WHO currently recommends adults aged 18–64 carry out at least 150 min of moderate-intensity exercise, or 75 min of vigorous exercise per week.¹¹ In the UK, the Chief Medical Office has published the same guidance on physical activity for adults aged 19–64.¹² Alarmingly, a recent report published by the British Heart Foundation estimates that approximately 40% of adults, around 20 million people, fail to meet these recommended exercise targets.¹³ With UK healthcare costs of physical inactivity estimated to be £1.2 billion, there is clearly a need to address this current health crisis.¹³

One area of research being considered as a potential solution to this crisis is physical activity promotion by doctors working in primary care.¹⁴ As advice given by primary care physicians is highly regarded by patients, the vast number of doctor–patient consultations which take place each year provides significant opportunities for the encouragement of behaviour change.^{15–17} However, doctors have often cited lack of time, lack of confidence, lack of knowledge and lack of training as significant obstacles to offering physical activity counselling.^{14 18} Research in America showed that more than 50% of doctors who graduated in the country had received no formal education in physical activity.¹⁹ More

BACKGROUND

An increasing proportion of the population are living with long-term chronic conditions such as cardiovascular disease, type 2 diabetes, hypertension and cancer.¹ These conditions are responsible for most of our healthcare expenditure and carry significant morbidity and mortality.² There is a strong body of evidence which supports the promotion of physical activity as part of the multifaceted care of individuals with chronic conditions.^{3 4} Studies have shown that physical activity has a positive effect on blood pressure in both normotensive and hypertensive patients, improves glycaemic control in patients with type 2 diabetes and promotes significant weight loss in overweight or obese individuals.^{5–8} Moreover, physical fitness is thought



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recently in the UK, a study based on an online questionnaire open to general practitioners revealed that only 20% of responders were familiar with national physical activity guidelines and the majority had not undertaken any training with regard to the encouragement of physical activity.²⁰

The knowledge and training of medical students in physical activity counselling has also been investigated.^{21 22} The General Medical Council states that promoting lifestyle changes such as physical activity is a key outcome for graduates.²³ Despite this, results from a previous cross-sectional study carried out in the UK in 2013 revealed that only 40% of final year medical students were aware of UK guidelines on physical activity and only 52% felt sufficiently trained to advise patients on the subject.²¹ Other studies have shown that very little time has been dedicated by medical schools to deliver physical activity teaching in the curriculum.²² There have subsequently been several calls over the last few years for UK medical schools to better equip their students with the knowledge and skills to promote physical activity.^{21 24} To this end, despite the challenge of little space being available in a packed curriculum, significant work has successfully been carried out as part of the Movement for Movement initiative to produce a curriculum and high-quality resources for students at all UK undergraduate medical schools, free of cost.^{25–27} The impact of this recent initiative is yet to be fully assessed, however progress made so far has been encouraging.²⁸

This questionnaire study of final year UK medical students (year 6/6 or 5/5 depending on the medical school) has been designed to provide an up-to-date assessment of medical students' familiarity with current Chief Medical Officer's exercise guidelines at a range of UK medical schools. In addition, it aims to assess whether their knowledge correlates with their personal lifestyle choices and to see if students feel they have received training in both lifestyle medicine and motivational interviewing, which may be considered as important tools for delivering physical activity counselling.^{29 30} It is hoped that the data gathered will help establish whether further interventions to educate medical students on this topic are necessary and whether any other novel approaches involving motivational interviewing are also worth considering.

METHOD

The Strengthening the Reporting of Observational Studies in Epidemiology statement for reporting of cross-sectional studies was followed throughout this study.³¹

Participants

For this cross-sectional study, final year medical students were interviewed from the following UK medical schools: Cambridge University, Imperial College London, University College London, King's College London, Barts and the London Medical School, University of East Anglia

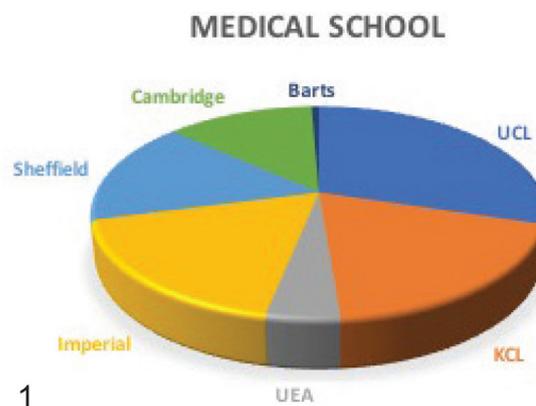


Figure 1 Response numbers from each medical school: 47 responses from University College London (UCL), 30 responses from King's College London (KCL), 7 responses from University of East Anglia (UEA), 28 responses from Imperial College London (Imperial), 25 responses from Sheffield University (Sheffield), 20 responses from University of Cambridge (Cambridge) and 1 response from Barts and the London Medical School (Barts).

and Sheffield University. Between 9 December 2018 and 19 December 2018 the link to an online Google survey (see below) was sent out via email and posted on final year of medical school social media groups for students to complete and was sent to year 5/year 6 mailing lists via university email. In total, 158 responses (65 male, 93 female, 1 prefer to not say), out of 1356 students reached, were received during the 10-day period that the form was live for, giving a response rate of 11.6%. **Figure 1** details the number of responses received from each university.

Survey design

The pilot survey was developed by the authors based on literature research. There was no validated questionnaire to test the knowledge of lifestyle medicine in final year medical students, hence we developed a new short survey based on the information we wanted to collect. The questionnaire was tested and validated in a focus group of 10 final year medical students. These students were excluded from the study. The final survey itself consisted of nine key questions. Two single best answer questions were used to test the participant's knowledge of current exercise guidelines and whether they could estimate the number of patients needed to treat to cause one physically inactive patient to meet the guidelines. In order to assess whether knowledge correlated with personal lifestyle habits, students were asked about their exercise habits, body mass index (BMI) and smoking status. A further three questions were designed to discover students' views on the training they had received in both lifestyle medicine and motivational interviewing and whether they felt that more was needed in the curriculum. Finally, participants were asked if they would be happy to be contacted for a focus group which may be conducted in the future as a follow-up to this study.

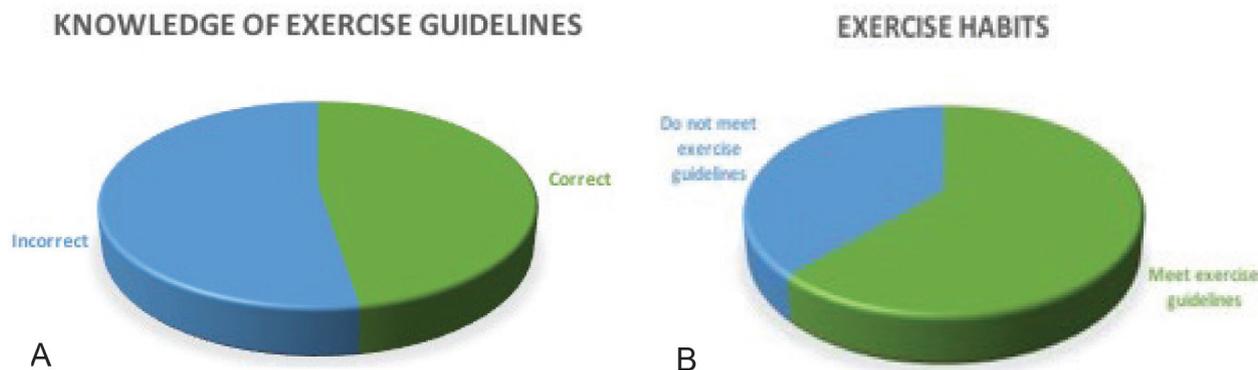


Figure 2 Knowledge of UK exercise guidelines. (A) Fifty-two per cent of participants answered the single best answer question on exercise guidelines correctly. (B) Only 15.7% of participants correctly estimated that the number of patients needed to receive lifestyle counselling for one patient to follow the recommended guidelines is 10.

Statistical analysis

Statistical analysis was performed using Microsoft Excel, and SPSS Linear Pearson Product Moment correlation was used to assess any differences in exercise habits and knowledge of guidelines between genders in addition to whether knowledge of exercise guidelines correlated with personal exercise habits.

RESULTS

A significant proportion of students were unaware of current exercise guidelines

As shown in [figure 2](#), nearly half of the participants were not able to identify correctly the guidelines outlined by the WHO regarding weekly physical activity for adults aged 18–64. There was no correlation between gender and knowledge of exercise guidelines (R coefficient=0.0408). Most participants significantly overestimated the number of patients needed to receive lifestyle counselling for one patient to follow the recommended guidelines.

Most UK medical students appear to be leading a physically active lifestyle

In this study, there was no correlation between student's gender and number of days of exercise taken per week (Pearson's correlation coefficient $R=-0.0549$). Contrary to the hypothesis that increased knowledge of exercise guidelines might lead to improved exercise habits, there was no correlation between the knowledge of recommended exercise guidelines and exercise taken by the students (R coefficient -0.0741). Nevertheless,

the vast majority of participants had a normal BMI, were non-smokers and were exercising more than twice a week ([figure 3](#)).

Most participants were not trained in lifestyle medicine

The data shown in [figure 4](#) clearly show that most participants state they have not received training in lifestyle medicine over the last 2 years and would like more lifestyle medicine teaching to be incorporated into the curriculum. The responses received were similar across all medical schools involved. Interestingly, nearly half of students have not been trained in motivational interviewing which is a key evidence-based counselling strategy.

DISCUSSION

In the UK, each medical school sets its own syllabus and this, combined with the fact that there is limited space in the curriculum for content to be added, has meant that creating and delivering standardised teaching on this topic is a challenging prospect.²⁷ Nevertheless, recent work carried out by Gates *et al* as part of the Public Health England (PHE) and Sport England's Moving Healthcare Professionals programme has resulted in the production of high-quality resources made available to medical students and a 13-point framework was created for systematically embedding resources on physical activity into the curriculum and monitoring progress.²⁸ Complete implementation of this framework at all levels of the curriculum was achieved by Lancaster Medical School which demonstrates that change can be



Figure 3 Personal lifestyle measurements. (A) 74.1% of participants have a body mass index (BMI) of 20–25. (B) 97.5% of participants are currently non-smokers. (C) 72.2% of participants exercise on 3 or more days/week.



Figure 4 Lifestyle medicine and motivational interviewing training. (A) 80.4% of participants have not been trained in lifestyle medicine over the last 2 years. (B) 48.1% of participants have not been trained in motivational interviewing. (C) 75.9% of participants would like more lifestyle medicine teaching to be incorporated into the medical school curriculum.

achieved with effective leadership and management.²⁵ Further studies would be useful to quantitatively assess the effectiveness of these curriculum changes and could be done by including questions in medical school exams and assessing performance.³⁰ It would also be interesting to assess the knowledge of students before and after any interventions are made.

In our study, over 75% of participants admitted they had not received any training in lifestyle medicine, which incorporates education on physical activity as well as other lifestyle factors including smoking, diet and sleep.³² Last year, the British Society of Lifestyle Medicine (BSLM) has made a diploma in lifestyle medicine available for health practitioners in the UK to undertake. Elsewhere, a website-based initiative called Moving Medicine has recently been set up by PHE and the Faculty of Sports and Exercise Medicine. This website currently contains specific step-by-step guides tailored to different conditions for clinicians to study as well as printable information sheets for patients to use. By working in collaboration with UK medical schools, organisations such as Moving Medicine and the BSLM may be able to produce up-to-date, evidence-based resources that may give medical schools further options for incorporating training on physical activity counselling into the undergraduate curriculum.

Motivational interviewing is a well-established and evidence-based technique that is used to counsel patients in a variety of medical settings and used to encourage behavioural change including physical activity.³³ In our study, nearly half of the medical students who answered the questionnaire stated that they were not trained in this technique. As mixed responses were received from all medical schools, perhaps more formal training and further integration of this technique into the curriculum may improve knowledge of this skill. It has been reported that even brief training can have a positive impact on medical students' confidence and there is growing evidence to show that motivational interviewing education can be successfully implemented at the postgraduate level.^{33 34}

The number needed to treat for one person to achieve the recommended physical activity guidelines for adults aged 19–64, through lifestyle counselling, is 12 whereas it

is estimated to be 50–120 to achieve a comparable health benefit of a smoker giving up smoking.³⁵

Our data show that medical students were largely unaware of this fact and highlighting this point may encourage doctors to bring up the subject of physical activity during consultations in addition to other lifestyle changes.

Interestingly, there may be benefits from improving physical activity education for medical students themselves. Although our data show that the majority of participants in our study were physically active, there are clearly some who are not meeting exercise guidelines. Improving physical activity knowledge among medical students may help improve their activity levels and in turn lead to improved well-being and reduced stress levels which has been shown.³⁶ Thus, medical students may use knowledge they gain to improve their lifestyle and set an example to patients going forward.

In conclusion, our study shows that a significant number of medical students lack knowledge of the Chief Medical Officer's physical activity guidelines and there is still a need to improve education in UK medical schools. Future work should now focus on further establishing the most effective methods to achieve this and assessing the outcomes of the interventions that have already been carried out.

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