Major limitations in knowledge of physical activity guidelines among UK medical students revealed: implications for the undergraduate medical curriculum

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Received 12 October 2012
Revised 1 December 2012
Accepted 5 December 2012
Published Online First 11 January 2013

ABSTRACT

Background Education of health professionals is a key element of the wider strategy to increase society's physical activity levels. To date, no study has directly assessed UK medical students' knowledge of physical activity guidelines or their ability/willingness to prescribe exercise.

Methods A questionnaire survey of final year medical students in Scottish Universities was conducted prior to a presentation on the current UK guidelines.

Results Completed questionnaires (n=177) represented 37% of the final year cohorts. Physical inactivity was incorrectly perceived to be the least important risk factor to global mortality. 40% stated they were aware of current guidelines, but in a forced choice, 68% were able to correctly identify them for adults. In comparison, 97% correctly identified the UK's alcohol guidelines. 52% stated they felt adequately trained to give physical activity advice to the general public.

Conclusions The medical students in this study underestimated the risk of physical inactivity, and did not know the physical activity guidelines as well as other health promotion guidelines. A large proportion remained unconfident about giving physical activity advice. Improved education of this group is required.

BACKGROUND

The benefits of physical activity to an individual's health, the economy and society are globally accepted.[1 2] In accordance, UK guidelines have been established on the amount and type of physical activity people should aim to achieve, the latest in 2011.[3] However, within the UK, it is estimated only one-third of adults meet these guidelines.[3] Training of medical professionals is a key element of the wider strategy to increase physical activity levels.[1 3–6]. Medical students, as tomorrow's doctors, are therefore an important group. Despite this, studies of undergraduate medical curricula in the UK and worldwide have consistently shown a lack of coverage of sport and exercise medicine and physical activity promotion,[7–11] thereby raising concerns about whether UK medical students have the knowledge, skills and confidence necessary to promote physical activity. To date, no study has directly assessed UK medical students' knowledge of physical activity guidelines or their ability/willingness to prescribe exercise. Only when current knowledge levels are known, can evidence-based interventions be employed to fill any deficit.

The aims of the current study were to assess final year medical students' knowledge of the risks of physical inactivity and of the current UK guidelines, and obtain feedback on physical activity teaching received by the students and their confidence in prescribing physical activity.

METHODS

A questionnaire (table 1) was designed, and modified following feedback from clinicians and university lecturers. E-mails with the study background and design were sent out to the four medical schools in Scotland, of which two indicated a willingness to participate in the study. Emails and year electronic notice boards invited students to attend an additional presentation to timetabled teaching entitled 'Preventative medicine with a focus on physical activity'. The questionnaire was completed by students prior to the presentation. Data was analysed using Microsoft Excel 2010.

RESULTS

A total of 177 students participated (79 and 98 from each university) representing 37% of final year cohorts.

Physical inactivity was perceived to be the least important risk factor to global mortality, ranked behind tobacco, diabetes, obesity and hypertension. In all, 40% stated that they were aware of current UK guidelines; 68% were able to correctly identify them for adults; 81% of the students who stated they were aware of the guidelines correctly identified them, in comparison with 57% of students who correctly identified the guidelines but who stated that they were unaware of the current guidelines; 97% of students correctly identified the current UK alcohol guidelines for adults (table 1).

A total of 74% reported that they had received teaching about the benefits of physical activity during their undergraduate teaching. However, only 52% stated that they felt adequately trained to give advice on physical activity to the general public (table 1).

DISCUSSION

Contrary to recent evidence, physical inactivity was perceived to be the least important risk factor to global mortality.[1] Only 40% of students stated that they were aware of the UK physical activity guidelines. However, given a forced choice, 68% were

To cite: Dunlop M, Murray AD. *Br J Sports Med* 2013;**47**:718–720.

Table 1 Questionnaire and results (n=177)

Q 1. Please rank the following risk factors for global mortality in order (most common–least common) according to The World Health Organisation 2010?	
	Mode
Diabetes	3
Physical inactivity	5
Tobacco	1
High blood pressure	4
Obesity	2
Q 2. Are you aware of the UK government guidelines for physical activity?	
Yes	40%
No	60%
Q 3. To gain the health benefits of physical activity, which of the following fulfils the current UK guidelines for adults (19–64 years)?	
20 min of moderate intensity activity on at least 5 days a week	23%
60 min of moderate intensity activity twice a week	3%
30 min of moderate intensity activity on at least 5 days a week	68%
60 min of vigorous intensity activity once a week	0%
30 min of vigorous intensity activity twice a week	6%
*Of the responders in Q 2 who stated 'yes' 81% correctly identified the current guidelines	
*Of the responders in Q 2 who stated 'no' 57% correctly identified the current guidelines	
Q 4. What is the current UK-recommended maximum units of alcohol each week for adults?	
Correctly identified in 97% of responses	
Q 5. During your undergraduate teaching, have you received teaching about the benefits of physical activity on health?	
Yes	74%
No	26%
Q 6. Do you feel you have been adequately trained to give physical activity advice to the general population?	
Yes	52%
No	48%

able to correctly identify them from the list of options; 68% recognition rate is encouraging, especially viewed along with the finding that students who stated they were aware of the UK guidelines were more likely to correctly recognise them. However, the disparity between being able to recognise the statement, but not knowing that it is part of an evidence-based government guideline, is likely to reduce the probability of the medical student/future doctor using the guideline advice in clinical consultations.

Importantly, the recognition rate of the physical activity guidelines was far below the 97% of the students in this study, who knew the UK guidelines relating to maximum recommended limits for alcohol intake. This comparison is particularly revealing; physical inactivity is still not achieving the credence in health promotion teaching of other major risk factors to health.

Positively, 74% of students stated they had received teaching about the benefits of physical activity. However, findings that only 40% of the students were aware of the guidelines, and only 52% felt adequately trained to offer advice on physical activity to patients, suggests that the content of teaching regarding physical activity could be improved. Similar levels of self-perception in exercise prescription were noted for Australian medical students.[12] However, the majority of medical students are not deemed competent by their Deans in exercise prescription and counselling.[13] Both the rates of guideline recognition and self-perceived adequacy to advise also need to be considered in light of the fact that this sample comprised students who chose to attend the presentation. Such self-selection could imply that the study overestimated true levels of knowledge and confidence.

Lack of education on physical activity is widely accepted to be a major barrier to healthcare professionals promoting it effectively.[1 3–6] Despite this and the recognition by University Clinicians and Deans that physical activity health promotion is important and should be taught in medical school, and the fact that teaching has been shown to be effective [13–15], medical curriculum coverage and teaching of sport and exercise medicine and physical activity have developed minimally since 2000.[7–9 11] This study was the first to directly assess medical students' knowledge of physical activity guidelines and confidence in basic physical activity prescribing. Our findings substantiate previous studies' concerns that a lack of teaching regarding physical activity has not given today's medical students, tomorrow's doctors, the knowledge and skills necessary to promote physical activity to their patients.

Barriers quoted include lack of curriculum space, time and qualified educators.[7 8 11 13] Expansion of e-modules and education of secondary care clinicians are possible solutions to these barriers, reinforced by undergraduate curricula adoption of physical activity teaching. The potential medicolegal consequences of healthcare systems not providing adequate advice on physical activity has been emphasised,[16] and could, no doubt, also be applied to educational bodies. A multiagency-coordinated approach involving government departments, Royal Colleges, educational bodies (GMC), the Faculty of Sport and Exercise Medicine, undergraduate and postgraduate curriculum leads is needed to address this.

This study presents several limitations. Participants were from only two medical schools which limits the generalisability of the findings. However, the similarity of results between the universities helps support the findings generalisability. Furthermore, previous UK curricula studies did not report any regional differences in their findings. Strengths of the study are that it is the first to directly assess medical students' knowledge. All students were also limited to final year students to ensure uniformity of the sample cohort. The format of the questionnaire helped limit self-report bias.

Replication of a more detailed study throughout a wider sample of UK medial schools and postgraduate medical training, especially general practice would be beneficial to help further identify and quantify educational needs. Future research should also focus on finding effective, evidence-based strategies to bridge these knowledge gaps, and in addition, ensure that students and clinicians have the skills required to promote physical activity behavioural change in patients.

CONCLUSIONS

The medical students taking part in this study underestimated the risk of physical inactivity, and did not know the physical activity guidelines as well as other health promotion guidelines. Only 52% were confident about giving physical activity advice. Therefore, it is likely that today's medical students, tomorrow's doctors, do not have the knowledge and skills necessary to promote physical activity to their patients. Systematic education of this group is required given the scale of benefits that can be accrued with regular physical activity.

What are the new findings?

- This was the first study to assess UK final year medical students' knowledge of the risks of physical inactivity and of the current UK physical activity guidelines.
- The medical students in this study underestimated the risk of physical inactivity, and did not know the physical activity guidelines as well as other health promotion guidelines.
- A large proportion remained unconfident about giving physical activity advice.
- Our findings substantiate concerns that a lack of physical activity teaching may not have given today's medical students, tomorrow's doctors, the knowledge, skills, and confidence necessary to promote physical activity to their patients.

How might it impact on clinical practice in the near future?

- Given the scale of health benefits that can be accrued with regular physical activity and the essential role doctors must have in its promotion if these are to be obtained, our findings highlight the need for systematic changes in the teaching of physical activity to medical students.

Acknowledgements Professor S Hillis, Professor of Cardiovascular and Exercise Medicine, University of Glasgow for contributing to the drafting of the questionnaire. Lawrence Beere (Medical Student, University of Glasgow) for assistance in data collection.

Contributors MD and AM conceived the idea, designed the questionnaire, and collected the data as per methodology. MD performed data entry and analysis. MD drafted the initial paper and AM contributed to the drafting process.

Competing interests None.

Provenance and peer review Not commissioned; externally peer reviewed.

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Br J Sports Med 2013 47: 718-720 originally published online January 11, 2013
doi: 10.1136/bjsports-2012-091891

Notes