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# Physical activity education in the undergraduate curricula of all UK medical schools. Are tomorrow's doctors equipped to follow clinical guidelines?

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## ABSTRACT

Physical activity (PA) is a cornerstone of disease prevention and treatment. There is, however, a considerable disparity between public health policy, clinical guidelines and the delivery of physical activity promotion within the National Health Service in the UK. If this is to be addressed in the battle against non-communicable diseases, it is vital that tomorrow's doctors understand the basic science and health benefits of physical activity. The aim of this study was to assess the provision of physical activity teaching content in the curricula of all medical schools in the UK. Our results, with responses from all UK medical schools, uncovered some alarming findings, showing that there is widespread omission of basic teaching elements, such as the Chief Medical Officer recommendations and guidance on physical activity. There is an urgent need for physical activity teaching to have dedicated time at medical schools, to equip tomorrow's doctors with the basic knowledge, confidence and skills to promote physical activity and follow numerous clinical guidelines that support physical activity promotion.

## INTRODUCTION

Physical inactivity is a leading cause of worldwide morbidity and mortality. The use of physical activity (PA) promotion in clinical settings by doctors is supported by National Institute for Health and Clinical Excellence guidelines in primary care.<sup>1</sup> Thirty nine different disease-specific clinical guidelines also support PA and exercise promotion, usually as a primary treatment and management recommendation, covering a wide range of diseases and conditions.<sup>2</sup>

The vast majority of the population in England live largely sedentary lives when measured objectively (ie, well below levels recommended for basic health benefits), placing them at greater risk of developing or having been diagnosed with chronic disease.<sup>3</sup> PA promotion is therefore applicable to most of the population and patients, and a recent systematic review of randomised controlled trials assessing promotion of PA to sedentary adults recruited in primary care, demonstrated significantly increased PA levels at 12 months.<sup>4</sup> Approximately, one in four people in England say they would be more active if they were advised to do so by a general practitioner (GP) or nurse and yet 54% of patients reported not even being provided advice on diet and exercise by their GP.<sup>5 6</sup>

It is not entirely clear why this paradox exists and why clinical practice is seemingly not

following evidence-based guidance and national policy initiatives to the detriment of individual and population health.<sup>7 8</sup> Explanations of the 'Cinderella' status of physical activity in healthcare and public health propose that doctors are neither trained, experienced, nor confident to provide PA promotion effectively to their patients in accordance with a growing number of clinical and public health guidelines.<sup>9</sup>

Almost 30 years ago, it was recognised that physical activity education within medical schools was required to support increasing evidence that PA promotion was important in the management, treatment and prevention of disease and also in the promotion of health.<sup>10</sup> When Harvard Medical School introduced a preventive medicine course, medical students confidence in exercise promotion was improved.<sup>11</sup> However, only 13% of USA medical schools feature PA education within their curriculum,<sup>12</sup> and we do not have the equivalent data from the UK. The aim of this study was to assess the provision of PA teaching content in the curricula of all medical schools in the UK.

## METHODS

We designed a questionnaire to assess the content, form and timing of key aspects of education on PA promotion according to current national guidelines, within the 31 medical schools in the UK. Each medical school was contacted by telephone to introduce the study and confirm the curriculum lead/director for medical studies. A questionnaire and cover letter were sent by electronic mail to each curriculum director. If a response was not received within 2 weeks, a reminder electronic mail was sent, followed a further 2 weeks later by a phone call to the curriculum director.

The questionnaire quantified the amount, number of years and total time devoted to teaching PA within the full undergraduate curriculum of each medical school. Direct questions were asked in relation to the current Chief Medical Officer (CMO) guidance for PA and its feature in the curriculum, as well as the specific teaching modules in which PA education was contained.<sup>13</sup> Free text explanation was requested for future plans in relation to the teaching of PA and allowing further comment. The questionnaire was designed to cover basic aspects of PA basic knowledge and promotion that would equip future doctors with the basic knowledge and skills to be able to promote physical activity effectively to patients.

## RESULTS

A 100% response rate was achieved. Response rates for individual questions varied. Five medical schools (16.1% of responders and 93.5% responded) did not include any specific PA teaching within their curricula. Four medical schools (15.4% of responders and 83.9% responded) taught PA within all 5 years of the curricula and the average year of this teaching was 2.3 years (SD 1.5, 83.9% responded). The average number of hours devoted to teaching PA throughout the entire curricula was 4.2 (SD 2.6), however this question was only answered by 12 schools (38.7%). Only 15 (55.6% of responders and 87.1% responded) medical schools teach the current CMO guidance for PA. Two common themes emerging from free text responses in relation to teaching PA were that the curriculum was 'integrated' (12 mentions by 8 schools) and that it is 'difficult to quantify/assess' (5 mentions by 4 schools) the teaching of physical activity within these curricula.

The modules within which PA teaching featured varied greatly between medical schools. For example, in some schools it featured within public health (eight mentions), cardiology (seven mentions), respiratory or endocrine (seven mentions), health promotion (two mentions) and community and general practice (two mentions).

## DISCUSSION

Only 56% of medical schools in the UK teach the CMO guidance for PA to future doctors. This represents a major inconsistency between undergraduate medical education, evidence-based clinical guidelines in the treatment and management of many chronic conditions and national policy promoting physical activity for health and disease prevention. A basic understanding of the benefits of PA, how to effectively promote PA (with behaviour change techniques) and combat sedentary behaviour for different age groups, underpin the ability of future doctors to manage modern non-communicable chronic diseases and follow clinical guidelines. It is not clear if tomorrow's doctors will be adequately prepared to counsel patients on PA behaviour change to reduce the unsustainable burden of the broad range of 'inactivity'-related diseases.

Time spent teaching PA science and promotion during UK medical school education is minimal (4.2 hours) and negligible when compared with the mean 109 hours (range 18 to 336 hours) spent teaching pharmacology.<sup>14</sup> This does not reflect the potential public health impact those medical students will have, as doctors, when caring for their patients and their understanding of physical inactivity, one of the main causes of chronic disease. Furthermore, the apparent low prioritisation of PA education in medical schools seems to contradict a Royal College of Physician policy statement that doctors should be able to effectively deliver primary prevention through behaviour modification to tackle socioeconomic health inequalities.<sup>15</sup>

The results suggest that there is considerable variation and difference in interpretation between those medical schools where PA education is taught. Free text comments from several medical schools reported that for 'integrated' curriculum's it can be difficult, and on occasions it is not possible, to quantify the amount of PA education. However, two integrated medical schools provided an unsolicited and very detailed breakdown of physical activity teaching within their entire curricula.

Many curriculum directors are hospital specialists, which perhaps reflect further barriers to curriculum change,<sup>16</sup> where their own secondary care clinical experiences seeing rarer forms of disease and lifestyle may counter-influence their perceptions of the relative importance of lifestyle promotion and

behaviour change in primary care settings. Our survey also suggests that there may be an urgent need to promote PA among medical educators, as several medical schools commented that this survey prompted them to look into their lack of PA education. Efforts to increase the presence of PA promotion would also need to be focused on Board examinations, which ultimately determine the content of undergraduate curricula.

Our data have limitations, being collected from one person at each school who could be biased because of their own knowledge, interests and interpretation of the survey questions and their curriculum. However, by obtaining responses from the curriculum leads and directors, responsible for the curriculum, we have exposed the depth and scale of the problem and barriers to change. We have also highlighted institutional challenges facing a highly variable and non-uniform undergraduate medical education system that is incapable of reacting to evolving PA public health policy and clinical guidelines, in already pressured timetables.

## CONCLUSION

Delivery of PA teaching is varied across UK medical schools but overall, was sparse or non-existent. Increasingly integrated curricula make PA teaching difficult to quantify and introduce into existing and established curricula based on 'traditional' medical specialties. There is widespread omission of basic teaching elements, such as the CMO recommendations and guidance on PA, which has been endorsed by all four UK Departments of Health. There is an urgent need for PA teaching to have dedicated time at medical schools, to equip tomorrow's doctors with the basic knowledge, confidence and skills to promote PA and follow numerous clinical guidelines that support PA promotion. This will need to be supported with behaviour change skills, which are fundamental to the delivery of most aspects of preventive medicine and clinical communication.

### What are the new findings

- ▶ Delivery of physical activity (PA) teaching is varied across UK medical schools but overall was sparse or non-existent.
- ▶ There is widespread omission of basic teaching elements, such as the Chief Medical Officer recommendations and guidance on PA, which has been endorsed by all four UK Departments of Health.
- ▶ Dedicated and defined time for PA education in medical schools, backed by curriculum change, with an emphasis on PA promotion and delivery, is urgently required to equip tomorrow's doctors with the basic knowledge, confidence and skills to promote PA and follow numerous clinical guidelines that support PA promotion.

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

- ▶ There is an urgent need for physical activity teaching to have dedicated time at medical schools, to equip tomorrow's doctors with the basic knowledge, confidence and skills to promote physical activity and follow numerous clinical guidelines that support physical activity promotion. The results from this paper should therefore generate much needed discussion and further research to assess the best methods for teaching physical activity science and promotion to future healthcare professionals.

**Contributors** RW and ES conceived the idea. RW, SC and ES designed the questionnaire. RW and SC collected the data from the medical schools as per method. NC performed data entry and data analysis. RW drafted the initial paper and all authors contributed equally to the drafting and writing process. All authors critically revised and approved the final version of the manuscript.

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