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GP speciality trainees’ knowledge and values towards physical activity: a national survey of Scottish trainees

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ABSTRACT

Background: Despite the known benefits of physical activity (PA), one third of adults in the UK fail to meet recommended levels of PA. PA promotion in primary care has been shown to be effective at improving PA in patients but implementation of PA promotion by GPs remains poor. Research has shown a need to improve PA education in undergraduate medical education, but no review of postgraduate medical education has been performed.

Aim: Assess the knowledge and values towards PA promotion in General Practice specialist trainees (GPST) in Scotland.

Design and Setting: Cross-sectional survey distributed to GPSTs trainees in Scotland.

Methods: A mixed methods cross-sectional survey, informed by previous research, was developed, and distributed, to all (n = 1205) GPSTs in Scotland in December 2022. Descriptive statistics were used to analysis quantitative data. A content analysis of free text responses was also performed.

Results: A total of 168 GPSTs responded, representing 13.4% of all GPSTs in Scotland. Of respondents, 93.5% reported no previous experience in Sports and Exercise Science/Medicine. Overall, 38.9% of respondents stated they were unaware of the current UK PA guidelines, with 33.9% unable to correctly identify the UK PA guidelines when presented with multiple choice options. 83% felt they had been inadequately trained to deliver PA advice during their medical training.

Conclusion: This study highlights a lack of knowledge, confidence, and education in PA promotion in GPSTs in Scotland. Given the importance of primary prevention, this urgently needs to be addressed.

How this fits in: Promotion of PA in primary care has been shown to increase patients PA. This novel work highlights for the first-time that future GPs do not feel adequately trained in PA promotion. This manifests in a lack of knowledge and confidence in discussing PA with patients. This urgently needs to be addressed, given the burden of physical inactivity on healthcare and society as a whole.

Keywords: education, physical activity, primary care
Introduction

Research demonstrates that regular physical activity (PA) results in extensive physical and mental health benefits (1). In 2019, the Chief Medical Officer for the UK introduced updated PA guidelines, building on previous iterations. These guidelines recommend that adults should aim to accumulate at least 150 minutes of moderate intensity aerobic exercise per week, including at least two sessions weekly aimed at muscle strength and balance (2). These recommendations align with the latest World Health Organisation PA guidance released in 2020 (3). Despite this, one third of adults in the UK fail to meet the 2019 Chief Medical Officer’s PA guidelines (4). This is important as physical inactivity results in huge detrimental implications on an already stretched health service (4). For example, the Department for Health of England and Wales report that a lack of PA is associated with one in six deaths in the UK and costs the National Health Service (NHS) £0.9 billion annually (and £7.2 billion to the UK economy) (4).

Lifestyle interventions delivered via primary care (e.g., brief interventions promoting walking) have been shown to be effective at initiating behavioural change and reducing the risk of disease progression (5). A recent systematic review by Kettle and colleagues (6) shows that PA interventions delivered in primary care are effective at increasing PA in patients. Furthermore, research has shown PA promotion interventions within primary care to be cost-effective (7), with a shifting emphasis within health-care settings from treatment to cure (8).

Despite primary care being a key point of influence for PA behaviours, a 2017 Royal College of General Practitioners (RCGP) and Public Health England survey evidenced poor implementation of PA promotion by General Practitioners (GPs) (9). A frequently cited reason for this is a lack of knowledge among health professionals about the benefits of PA and how to appropriately promote it (10-18). In a nationwide survey of GPs in England, only 20% of respondents (n = 203) were broadly familiar with the UK PA guidelines, and 55% (n = 557) reported they had not undertaken any training regarding PA counselling or advice (9). A failure of medical school education in the UK was suggested by Weiler and colleagues (19), whereby their assessment of medical school curricula demonstrated that only 56% of medical schools taught the Chief Medical Officer’s guidelines on PA to medical students, with a mean
time spent teaching the benefits of PA of 4.2 hours. These findings were supported by a study of Scottish final year undergraduate medical students which revealed that only 40% were aware of current PA guidelines (20). Inadequate education in PA is not isolated to UK medical schools, with concerns raised in the USA and Australian(21, 22). It is also not a new problem, with inadequate PA education first highlighted in 2000 (23), with an editorial published in 2023 calling for the issue to be re-addressed in response to the lack of change (24). This reported lack of change is supported by a recent survey of undergraduate medical students in London (25). Given the known benefits of PA and the effectiveness (including cost effectiveness) of PA promotion in primary care, training GPs of the future is crucial for enacting positive change. Despite research having been done within the context of undergraduate medical education, there is an absence of research reviewing postgraduate medical education. This is especially the case within primary care – often viewed as a cornerstone of public health messaging and disease prevention due to its unconditionality, longevity, and person-centred approach, while remaining the most widely accessed part of healthcare (e.g., over 300 million GP consultations yearly in the UK) (26, 27). Within the UK GP training is a 3-year programme combining primary and secondary care exposure that is regulated by the RCGP and GMC, combining exposure-based and outcome-based learning. In the Scotland, it is a combination of 18 months of primary care and 18 months in secondary care (3 x 6-month blocks of differing specialities).

PA is a crucial part of disease prevention, management, and treatment (1), with adequate education of GPs essential to ensure this is delivered appropriately and effectively. This study therefore aims to address this by assessing knowledge and values towards PA promotion in general practice specialist trainees (GPSTs).

Methods

A mixed methods cross-sectional survey was developed using an online platform; Jisc Online Survey (JOS) tool. The questions were compiled by an advisory panel including NHS Education Scotland (NES) representatives (n = 2), academic researchers (n = 2), and a GP with a special interest in PA (n = 1). The study design was informed by research previously performed by Dunlop and Murray (20) within an undergraduate medical setting. The survey aimed to assess all previous training related to PA (five questions), level of knowledge regarding the UK PA guidelines (two questions), and perceived confidence (three questions) through a range of
single best answer, five-point Likert scale, and free text questions. The survey can be found in Appendix 1. The survey was disseminated to all GPSTs in Scotland via email from the NES on 24/11/2022. A reminder email was sent on 09/12/2022, with the survey closing on 24/12/2022. Data-analysis was performed using SPSS Amos 28.0.0.0 (190).

Descriptive statistics were used to present quantitative data. As the study only aimed to describe GP trainees’ experience of education, knowledge of PA, and confidence in PA promotion, inferential statistics were not used. Free text responses were independently reviewed by two authors (CL and KA) to identify themes using NVIVO software (v1.5) in a conventional content analysis, as described by Hsieh and colleagues (28). Following this, discussion between all authors of independent sub-themes resulted in the creation of three themes identified in this paper.

Ethics

This study received an ethics waiver NES and the Scottish Medical Education Research and Innovation Group. This project was considered as a service evaluation.

Results

A total of 168 GPSTs responded, representing 13.4% of all GPSTs in Scotland (n = 1205) at the time the survey was distributed. Over half of the sample (n = 86 (51.2%)) were in their final year of the three-year programme (GPST3s), while 28.6% (n = 48) were second year GPSTs, and 20.2% (n = 34) were first year GPSTs, respectively. The mean time to complete the survey was 2 minutes 20 seconds.

Of all respondents (n = 168), 93.5% reported no previous experience in Sports and Exercise Science/Medicine. Experience reported included undergraduate, intercalated, and master’s degrees in Sports and Exercise Science/Medicine, in addition to one respondent with a personal training qualification.

Overall, 38.9% of respondents stated they were not aware of the current UK PA guidelines, while 33.9% were unable to correctly identify the UK PA guidelines for adults. Of the GPSTs who stated they were aware of the guidelines, 83.3% were able to correctly identify them. Conversely, of those GPSTs who stated they were not aware of the guidelines, 40% correctly identified them. Knowledge of the UK PA guidelines increased with training, with 47.1% of
GPST1s (n = 18) able to correctly identify the guidelines, compared to 71.4% (n = 60) of GPST3s.

GPSTs acknowledged the importance of PA in preventing disease (100% agreement) and treating disease (97% agreement), but 51.8% of respondents did not feel confident in advising patients regarding PA (figure S1). Confidence in advising patient on physical activity did not improve as GP progressed through training (47.06% of GPST1s felt confident, compared to 47.60% of GPST3s).

Regarding their own training in PA promotion, 83.3% of respondents felt it had been inadequate (figure S2). Only 21.4% and 23.5% of respondents felt that their undergraduate or postgraduate medical curriculum provided good teaching to enable them to advise patients, respectively.

Free text responses (n = 39) revealed three main themes: (1) a lack of teaching in PA in both the undergraduate and postgraduate curriculum; (2) the available teaching tending to focus on the benefits of PA but lacked teaching on the deliverance of PA promotion; and (3) that the opportunities available were often optional and/or independent of GP training (see table S1).

Discussion

Summary

The majority of GPSTs in Scotland (93.5%) had no previous experience in Sport and Exercise Science/Medicine, with 38.9% not aware of the UK PA guidelines. However, GPSTs agreed that PA was important in disease prevention (100%) and disease treatment (97%). Despite this, 51.8% did not feel confident in advising patients on PA, with 83.3% feeling that they had been inadequately trained to provide PA advice and promotion.

Strengths and Limitations

To the best of our knowledge, this is the first study of GP trainees in the UK regarding attitudes to PA. It does, however, have several limitations. The analysis was performed on a small number of respondents (n = 168), with a response rate of 13.4% of all GPSTs in Scotland. This compares to the response rate in a survey of GPs in England by Chatterjee and colleagues of 12.1% (9). This response rate may have been influenced by unprecedented pressures on
health professionals at the time of the survey. As with all survey-based research, response rate may have an impact via responder bias. This may include more respondents who have a pre-existing interest in PA. Participants were only from Scotland, and so does not represent all post-graduate primary care deaneries in the UK. A responder bias was noted towards GPST3s, with 18.4% of GPST3 responding compared to 10.2% of GPST1s and 11.9% of GPST2s. This however does offer more insight into the postgraduate curriculum across Scotland as GPST3s near completion of their training.

Comparison with existing literature

Despite the majority of GPSTs supporting the benefits of PA, 38.9% were not aware of the current UK PA guidelines. Confidence in giving PA advice was low, with 51.8% of GPSTs not feeling confident in the provision PA advice. Research on PA promotion within fully qualified GPs has shown only 35.1% reported being at least ‘somewhat familiar’ with the PA guidelines, but 74.1% felt confident raising the topic of PA with their patients (29). Given the role primary care plays in promoting PA (5-7), this is concerning and needs to be addressed.

Within primary care it has been established that a lack of education on PA is seen as the main barrier to its promotion (29). Despite this issue being repeatedly raised over the last decade (particularly regarding the undergraduate curriculum) (19-22), this research identifies that the issue is ongoing – only 21.4% of respondents felt their undergraduate teaching and 23.5% felt their postgraduate teaching on PA had been good. This was lower than figures reported in final year medical students in 2014, with 52% feeling they have been adequately trained to give PA advice to the general population (20). Similarly, amongst fully qualified GPs, a 2016 survey revealed 55% had not undertaken any training in PA promotion.

The broad nature of barriers in postgraduate education are consistent with undergraduate medical education, including a lack of curriculum space, time, and qualified educators (19, 23, 30). However, medical education needs to adapt. A knowledge and experience of behavioural change and motivational interview techniques within primary care are increasingly important for PA promotion. This research suggests that the postgraduate curriculum in primary care needs to provide training in these techniques. A novel approach by Maini and colleagues (31) found that using medical students as health coaches was an effective way of improving medical student self-efficacy and communication skills. This provides a possible template,
both for undergraduate and postgraduate medical education. Within primary care, the RCGP are currently attempting to address the need for education, launching the Active Practice Charter in 2018 (32) and, more recently, the parkrun practice initiative (33). Despite this, GP training offers a unique platform for education at an early career stage with a captive audience.

**Implications for practice**

This is the first survey to assess the PA education within a postgraduate curriculum setting. Replication throughout a wider sample of primary care postgraduate deaneries in the UK would help further identify and quantify these findings. The consistency with previous research in undergraduate settings reinforces that these issues still need to be addressed, and highlights the need for GP trainees to gain additional training in the promotion of PA. Although some novel research has been done to address knowledge and experience gaps in undergraduate settings, these need to be extended to postgraduate education, with a particular emphasis on the practical implementation of PA promotion in primary care. Pugh and colleagues have shown in undergraduate settings that self-guided tools can improve knowledge of PA and confidence in advising regarding PA (34), offering a template for further research in a postgraduate setting. However, concerns regarding PA promotion within medical education have been routinely raised since 2000 (23), and despite a recurrent acknowledgement of the need for change (19-22), progress is not being made.

GPSTs that completed this study highlighted a limited understanding of UK PA guidelines, a lack of confidence in the implementation of PA promotion and expressed a lack of education in both their respective undergraduate and postgraduate curriculums. Despite recurrent ‘call to arms’ editorials highlighting the issue, very little original research exists on the topic. This paper identifies an urgent need to train our GPs of the future in PA (and effective PA promotion), particularly given the increasing burden of lifestyle related disease in the UK. A systematic approach within both undergraduate and postgraduate environments is required. A clear theme that emerged from the free text responses was that teaching that does occur focuses on highlighting the benefits of PA, without providing guidance on how to promote PA effectively. Given the universal acknowledgement of the benefits of PA, postgraduate education could specifically aim to address this issue within primary care. Over the last 20 years, postgraduate medical education has developed from an experience-based to an
outcome-based system (35). The RCGP has developed specific learning outcomes for GPSTs including knowledge of lifestyle factors, evidence-based approaches, and skills in behavioural change (36, 37). Assessment ensures enforcement of the curriculum, but while the curriculum includes the above learning outcomes, these are not included in the assessment criteria (38).

In relation to postgraduate primary care environments, education needs to focus on the practical elements of delivering PA promotion and advice.

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References
