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Physical activity habits of doctors and medical students influence their counselling practices

F Lobelo,1 J Duperly,2 E Frank3

ABSTRACT
Doctors are well positioned to provide physical activity (PA) counselling to patients. They are a respected source of health-related information and can provide continuing preventive counselling feedback and follow-up; they may have ethical obligations to prescribe PA. Several barriers to PA counselling exist, including insufficient training and motivation of doctors and improvable, personal PA habits. Rates of exercise counselling by doctors remain low; only 34% of US adults report exercise counselling at their last medical visit. In view of this gap, one of the US health objectives for 2010 is increasing the proportion of patients appropriately counselled about health behaviours, including exercise/PA. Research shows that clinical providers who themselves act on the advice they give provide better counselling and motivation of their patients to adopt such health advice.

In summary, there is compelling evidence that the health of doctors matters and that doctors’ own PA practices influence their clinical attitudes towards PA. Medical schools need to increase the proportion of students adopting and maintaining regular PA habits to increase the rates and quality of future PA counselling delivered by doctors.

Regular participation in physical activity (PA) is associated with a range of health benefits, including a markedly reduced risk of chronic disease morbidity and premature mortality; PA is a cornerstone of the prevention and clinical management of chronic diseases.

While population-wide efforts for the promotion of a physically active lifestyle are fundamental to transition into a preventative model, such efforts need to be complemented by regular clinical PA prescription. Lifestyle modification is key to managing chronic disease risk, and evidence shows that counselling by doctors can help patients to increase their activity levels. In addition, doctors are well positioned to provide health advice and counselling to their patients. First, they are often viewed as the most credible and respected source of health-related information. Second, they see many patients regularly, averaging three visits a year, which enables them to provide continued preventive counselling feedback and follow-up.

In addition, because of the substantial evidence for the health benefits of PA, clinicians may have ethical obligations to prescribe PA, an example of “Salus aegroti suprema lex” (Beneficence—A practitioner should act in the best interest of the patient’), one of the six basic principles of medical ethics. Accordingly, healthcare providers, and particularly doctors, are expected, as recommended by scientific and medical organisations, to provide preventive counselling to their patients, including exercise prescriptions. If this occurs at a population level, provider-initiated, preventive counselling will become a population-wide intervention for chronic disease management and prevention.

EXERCISE COUNSELLING BY DOCTORS REMAINS LOW
Despite the large amount of information about the health benefits of PA and the effectiveness of PA prescribed by doctors, rates of exercise counselling by doctors remain low. Only 54% of US adults reported exercise counselling at their last medical visit. In recognition of this gap, one of the US health objectives for 2010 (objective 1–3; HP2010) is increasing the proportion of patients appropriately counselled about health behaviours, including exercise/PA.

Clinical providers indicate several barriers to PA prescription, including limited time, lack of reimbursement and lack of training in prevention. For example, only 15% of 102 US medical schools in 2002 included PA and health in the curriculum. Additionally, doctors’ and medical students’ personal PA habits are important predictors of their counselling practices; physically inactive doctors are less likely to provide exercise counselling to patients, and provide less credible role models for the adoption of healthy behaviours.

This paper focuses on the demonstrated principle that clinical providers who act on the advice they give, in this case the health benefits of regular PA, do a better job at counselling and motivating their patients to adopt such health advice. A growing body of research on this question has been accumulating over the past two decades and we herein summarise its results.

ACTIVE DOCTORS PRESCRIBE ACTIVITY
Early evidence on the association between doctors’ personal and clinical exercise habits came from the national questionnaire-based US Women Physicians’ Health Study (WPHS, n = 4501). Women doctors complying with the Centers for Disease Control/American College of Sports Medicine (CDC/ACSM) PA recommendations were more likely to counsel patients on exercise, to counsel confidently and to be trained in counselling. In addition, those seeing exercise as a high priority were more likely to counsel on exercise. Similar trends (healthier doctor habits = better patient counselling attitudes/practices of such habits) were also reported for smoking, nutrition and many other habits by WPHS participants.
Findings from WPHS and other studies\textsuperscript{20–23} provided initial evidence of the strong association between doctors’ personal habits and their related counselling practices. A subsequent study, the Healthy Doc = Healthy Patient (HD = HP) project, focused on the effects of the medical education received on a student’s personal and clinical prevention-related practices. Frank et al surveyed a representative sample of students from 16 US medical schools (n = 2316; 4-year response rate 80.3%) in the class of 2003 at freshman orientation (first year) and again at entrance to wards (third year) and senior (fourth) year.\textsuperscript{27–30} Among freshmen, 64% of students complied with PA recommendations of the CDC/ACSM and 79% believed it would be highly relevant to their future medical practices to counsel patients about exercise. In addition, those who believed exercise counselling would be highly relevant in their future practice reported taking part in more vigorous PA than those reporting low relevance for exercise counselling (105 ± 4 min/week vs 87 ± 1 min/week; p<0.001).\textsuperscript{43}

Follow-up showed that PA levels were relatively stable during medical education and correlated with the frequency of PA counselling to their patients.\textsuperscript{29} At first year, 64% of students reported meeting PA recommendations; this decreased to 56% at third year and returned to 62% by fourth year. Also, students who felt more positive about the attitudes of their schools (p = 0.02) and classmates (p = 0.007) towards exercise promotion were more likely to comply with PA recommendations. Strongly agreeing with the statements—“In order to effectively encourage a patient, a doctor must also adhere to a healthy lifestyle,” “I will be able to provide more credible and effective counselling if I exercise and stay fit” and “Medical school faculty members should set a good example by practising a healthy lifestyle”—was also positively associated with compliance with PA recommendations. However, the proportion of students perceiving PA counselling in their future practices as highly relevant decreased significantly from first (69%) to fourth (55%) year (p<0.001).

The HD = HP study confirmed that throughout medical school there is a strong association between personal PA habits and PA counselling attitudes and practices, even among freshman students. And despite rates of compliance with PA recommendations remaining stable and somewhat better than those of the general population, there remains considerable room for improvement. However, the most troubling finding from this study was that the relevance students give to PA counselling decreases significantly during medical school.\textsuperscript{29}

**INTERVENTIONS CAN AUGMENT PHYSICAL ACTIVITY PRESCRIPTION: GLOBAL DATA**

In addition to the natural history HD = HP study, Frank and colleagues developed and implemented a 4-year curricular and extracurricular intervention to promote healthy behaviours among students in the class of 2005 attending Emory University School of Medicine in Atlanta, Georgia.\textsuperscript{42–43} The objective of this intervention was to test whether promoting medical student health would efficiently improve patient counselling, using the class of 2002 as controls. Data were collected at the first, third and fourth medical-school year time points (the number of controls was 110, 109, 100, respectively; the number receiving the intervention was 114, 104, 106, respectively; all response rates were >90%). Students receiving the intervention perceived the medical school as a healthier environment than did control students and reported significantly more agreement with school-controlled items such as curricular encouragement of PA, emphasis on preventive medicine, provision of extracurricular activities such as PA classes/sessions, as well as encouragement of exercising by classmates.\textsuperscript{44} In addition, the proportion of students in the control group meeting PA recommendations fell from 64% to 50% (third to fourth year), but changed little in the intervention group, from 71% to 66%, although these differences did not reach statistical significance (p\textsubscript{group-time} = 0.2). Significantly, students in the intervention group had about 50% greater odds of providing extensive counselling on exercise (p = 0.03) during their standardised patient encounters than did the control students.\textsuperscript{45} In summary, students receiving the intervention perceived their medical school as a healthier environment than did control students and their PA prevention-related attitudes and counselling practices were positively influenced by the intervention.

To date, most studies examining the association between personal PA habits among doctors and medical students and their related counselling practices have been conducted in the USA and other developed countries. However, the HD = HP principles were believed to be applicable to medical students and doctors in developing countries and we decided to test the HD = HP principle in Colombia. We initially collected data during 2006 from first and fifth year students attending eight medical schools in Bogota, Colombia, and recently expanded collection to a nationally representative sample of 24 medical schools. Bogota phase analyses (n = 661) confirmed the US findings of a strong association between personal health habits (including PA) and attitudes towards related preventive counselling.\textsuperscript{44–45} We found lower rates of compliance with PA recommendations among Colombian students than among US medical students (50% vs 61%), although these were still better than their age-matched peers in the Colombian general population. And we found that after controlling for age, gender and medical training related factors (student’s basic knowledge, perceived training and school environment) reports of a healthier behaviour were positively associated with a more positive attitude towards counselling (although for PA the association was also positive, it did not reach significance: odds ratio (OR) = 1.73; p = 0.25).\textsuperscript{44} Finally, analyses on fifth year students (n = 254) indicated that their knowledge of the health effects of PA (with 66% classified as having adequate knowledge) was associated with compliance with the PA recommendations (OR = 1.9, 95% CI 1.1 to 3.3, p = 0.024).\textsuperscript{46} The Colombian HD = HP study provides further evidence of the strong, consistent and generalisable association between personal health practices and preventive counselling attitudes among doctors in training.

Beyond the WPHS and HD = HP studies, others have also assessed the activity levels\textsuperscript{35–36 46–54} and PA counselling practices\textsuperscript{35–36 46–54} of doctors in training and in practice. These studies generally indicate that doctors are more active than their peers in the general population and that, while PA counselling varies by practice setting and specialty, it can be generally concluded that it is still suboptimal and has numerous barriers.\textsuperscript{24} There have been few additional studies assessing the association between personal and clinical PA practices\textsuperscript{35–36 46–54} but they have also concluded that more physically active doctors are more likely to counsel their patients about the benefits of PA. Collectively, evidence indicates that there is a robust association between personal PA behaviours and PA counselling practices in both practising doctors and medical students.

In addition, we have also demonstrated that if you as a clinician talk to your patients about your own exercise habits it makes you more believable and credible and it improves your...
ability to motivate your patients to adopt an active lifestyle. 
Perhaps it is the personal exercise experience of doctors themselves that really makes a difference to activity counselling.

Despite these findings, to date, most interventions aimed at improving PA counselling have primarily focused on practising doctors and have yielded mixed results, perhaps because these have not included a personal PA component for the provider.

6, 7 22 67–69 Few interventions to date have focused on residents and medical students or have been designed to improve counselling practices by improving personal health behaviours.

TAKE HOME MESSAGE FOR CLINICIANS AND MEDICAL EDUCATORS: PRACTISE IT AND PREACH IT

In conclusion, we have provided compelling evidence that doctors’ health matters and that doctors’ personal PA practices influence their clinical PA attitudes and practices. This association is strong and independent of many demographic, training and clinical practice factors. In addition, the HD = HP project shows that this relationship is already present at the beginning of medical training, is evident in students from both developed and developing nations and is responsive to intervention. The more, current and future doctors know about and perform exercise, the more they appreciate its value as a preventive and therapeutic tool. The implementation of medical school interventions to increase the proportion of students adopting and maintaining regular PA habits should constitute a powerful therapeutic tool. The implementation of medical school education. Subsequently, this could have a large impact on the management and prevention of chronic diseases in both developed and developing countries.

Competing interests: None.

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