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Physical activity habits of physicians and medical students influence their counseling practices

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Abstract

In this article, we describe how physicians are well-positioned to provide physical activity (PA) counseling to patients, and how they could be even more so. Physicians are a credible and respected source of health-related information who can provide ongoing preventive counseling feedback and follow-up. We also believe that they have ethical obligations to prescribe PA. If this were to occur more frequently, provider-initiated preventive counseling will become an important population-wide intervention for chronic disease management and prevention.

Despite this powerful rationale for physicians' prescribing exercise, there are several barriers to PA counseling, including physicians' insufficient training and motivation, and improvable personal PA habits. Rates of doctors' exercise counseling remain low; only 34% of U.S. adults reported exercise counseling in their last medical visit. Recognizing this gap, one of the U.S. health objectives for 2010 (objective 1-3; HP2010) is increasing the proportion of patients appropriately counseled about health behaviors, including exercise/PA. We summarize the growing body of research showing that clinical providers who act on the advice they give (including on PA) do a better job at counseling and motivating their patients to adopt such health advice. Findings from the U.S. Women Physicians' Health Study (WPHS, n=4,501) and other studies provided initial evidence on the strong association between physicians' personal habits (including PA) and their related counseling practices. Similarly, Frank et al surveyed a n=2316 students from 16 U.S. medical schools, confirming that (from freshman at orientation through seniors) there is a strong association between personal PA habits and PA counseling attitudes and practices. A troubling finding from this study was that the relevance students give to PA counseling decreases significantly during medical school. However, Frank and colleagues also developed and implemented a 4-year-long curricular and extracurricular intervention to promote healthy behaviors (including PA) among students. Students in the intervention group had approximately 50% greater odds of providing extensive counseling on exercise (P = .03) during their standardized patient encounters than did control students.

In summary, there is compelling evidence that physicians' health matters and that physicians' personal PA practices influence their clinical PA attitudes and practices. There is a need for medical school interventions to increase the proportion of students adopting and maintaining regular PA habits to increase the rates and quality of future physician-delivered PA counseling. This could have a large impact on the management and prevention of chronic diseases in both developed and developing countries.

Introduction

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;[1] PA is a cornerstone in the prevention and clinical management of chronic diseases.[1-3]

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 there is evidence that physician counseling can help patients to increase their activity levels.[4-7] In addition, physicians are well-positioned to provide health advice and counseling to their patients. First, they are often viewed as the most credible and respected source of health-related information.[8,9] Second, they see many patients regularly, averaging 3 visits per year, which enables them to provide continued preventive counseling feedback and follow-up.[10,11] In addition, because of the substantial evidence on the health benefits of PA, clinicians may have ethical obligations to prescribe PA,[12] 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.[13] Accordingly, health care providers and particularly physicians are expected, as recommended by scientific and medical organizations, to provide preventive counseling to their patients, including exercise prescriptions.[3,7,14] If this occurs at a population-level, provider-initiated preventive counseling will become a population-wide intervention for chronic disease management and prevention.

Doctors' exercise counseling remains low

Despite the large amount of information about the health benefits of PA and the effectiveness of physician-prescribed PA, rates of doctors' exercise counseling remain low[15-19] Only 34% of U.S. adults reported exercise counseling in their last medical visit.[20]. Recognizing this gap, one of the U.S. health objectives for 2010 (objective 1-3; HP2010) is increasing the proportion of patients appropriately counseled about health behaviors, including exercise/PA.[3]

Clinical providers indicate several barriers for PA prescription including limited time, lack of reimbursement and lack of training in prevention.[22-25] For example, only 13% of 102 U.S. medical schools in 2002 had some curriculum on PA and health.[21] Additionally, physicians' and medical students' personal PA habits are also important predictors of their counseling practices;[22,26-29,34-39] physically inactive physicians are less likely to provide patient exercise counseling, [34] and provide less credible role models for the adoption of healthy behaviors.[30,68], 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 counseling and motivating their patients to adopt such health advice. A growing body of research on this question has been accumulating over the last two decades and we herein summarize its results.

Active physicians prescribe activity

Early evidence on the association between physicians' personal and clinical exercise habits came from the national questionnaire-based U.S. Women Physicians' Health Study (WPHS, n=4,501).[32] Women physicians complying with the Centers for Disease Control/American College of Sports Medicine (CDC/ACSM) PA recommendations[33] were more likely to counsel patients on exercise, to counsel confidently, and to be trained in counseling. In addition, those having a high priority to exercise more were more likely to counsel on exercise.[34] Similar trends (healthier physician habits=better patient counseling attitudes/practices on such habits) were also reported for smoking,[35] nutrition,[36] and many other habits by WPHS participants. [26,38]

Findings from WPHS and other studies [28,30,37-39] provided initial evidence on the strong association between physicians' personal habits and their related counseling practices. A subsequent study, The Healthy Doc=Healthy Patient (HD=HP) Project, focused on the effects of the medical education experience on student's personal and clinical prevention-related practices. Frank et al surveyed a representative sample of students from 16 U.S. medical schools (n=2316; 4-year response rate=80.3%) in the class of 2003 at freshman orientation (1st year) and again at entrance to wards (3rd year) and senior (4th) year.[27, 40] Among freshmen, 64% percent of students complied with CDC/ACSM's PA recommendations and 79% believed it would be highly relevant to their future medical practices to counsel patients about exercise. In addition, those who believed exercise counseling would be highly relevant in their future practice reported engaging in more vigorous PA than those reporting low relevance for exercise counseling (105±4 min/week vs. 87±1 min/week $p<0.001$).[41] Follow-up showed that PA levels were relatively stable during medical education and were correlated with frequency of PA counseling to their patients.[29] At 1st year, 64% of students reported meeting PA recommendations; this decreased to 56% at 3rd year, and returned to 62% by 4th year. Also, students who felt more positive about their schools' ($P=0.02$) and classmates' attitudes ($P = 0.007$) towards exercise promotion were more likely to comply with PA recommendations. Strongly agreeing with the statements, ''In order to effectively encourage a patient, a physician must also adhere to a healthy lifestyle,'' ''I will be able to provide more credible and effective counseling if I exercise and stay fit,'' and ''Medical school faculty members should set a good example by practicing a healthy lifestyle,'' were also positively associated with compliance with PA recommendations. However, the proportion of students perceiving PA counseling in their future practices as highly relevant decreased significantly from 1st (69%) to 4th (53%) year ($p<0.001$). The HD=HP study confirmed that throughout medical school there is a strong association between personal PA habits and PA counseling 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 counseling decreases significantly during medical school.[29]

Interventions can augment physical activity prescription: Global data

In addition to HD=HP's natural history study, Frank and colleagues developed and implemented a 4-year-long curricular and extracurricular intervention to promote healthy behaviors among students in the Class of 2003 attending Emory University School of Medicine in Atlanta, Georgia.[42,43] The objective of this intervention was to test whether promoting medical student health would efficiently improve patient counseling, using the Class of 2002 as controls. Data was collected at the 1st, 3rd and 4th medical-school year time-points (N controls = 110, 109, 100; N intervention = 114, 104, 106; all response rates greater than 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 classmate encouragement of exercising.[43] In addition, the proportion of students in the control group meeting PA recommendations fell from 64% to 50% (3rd to 4th year), but changed little in the intervention group, from 71% to 66%, although these differences did not reached statistical significance ($P_{group*time}$ = .2). Significantly, students in the intervention group had approximately 50% greater odds of providing extensive counseling on exercise (P = .03) during their standardized patient encounters than did the control students.[43] 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 counseling practices were positively influenced by the intervention.

To date, most studies addressing the association between personal PA habits among physicians and medical students and their related counseling practices have been conducted in the U.S. and other developed countries. However, the HD=HP principles were believed to be applicable to medical students and physicians in developing countries, and we decided to test the HD=HP principle in Colombia. We initially collected data during 2006 from 1st and 5th year students attending 8 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 U.S findings of a strong association between personal health habits (including physical activity) and attitudes towards related preventive counseling.[44,45] We found lower rates of compliance with PA recommendations among Colombian vs. U.S. 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 behavior was positively associated with a more positive attitude towards counseling (although for PA the association was also positive, it did not reach statistical significance OR = 1.73; p = 0.25).[44] Finally, analyses on 5th year students (n=254) indicated that their knowledge on PA's health effects (with 66% classified as having adequate knowledge) was associated with compliance with the PA recommendations (OR 1.9, CI 1.1 – 3.3, p 0.024).[45] The Colombian HD=HP study provides further evidence of the strong, consistent, and generalizable association between personal health practices and preventive counseling attitudes among physicians in training.

Beyond the WPHS and HD=HP studies, others have also assessed the activity levels [28,30,39,46-54] and PA counseling practices [15,16,18-20,28,30,39,51,52,55-62] of physicians 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 counseling varies by practice setting and specialty, it can be generally concluded that it is still sub-optimal and has numerous barriers.[22,25] While there have been few additional studies assessing the association between personal and clinical PA practices[30,39] they have also concluded that more physically active physicians are more likely to counsel their patients about PA benefits. Collectively, evidence indicates that there is a robust association between personal PA behaviors and PA counseling practices in both practicing doctors as well as 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.[68] Perhaps is the personal exercise experience as doctors what really makes a difference for activity counseling.

Despite these findings, to date, most interventions aimed at improving PA counseling have primarily focused on practicing physicians and have yielded mixed results, perhaps because these have not included a personal PA component for the provider.[6,7,23,63-67] Very few interventions to date have focused on residents and medical students or have been designed to improve counseling practices by improving personal health behaviors.[42,43,47]

Take home message for clinicians and medical educators: practice it and preach it

In conclusion, we have shown compelling evidence indicating that physicians' health matters and that physicians' 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 strategy to increase the rates and quality of future physician-delivered PA counseling. 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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Notes