Clinical Counseling for Physical Activity: Translation of a Systematic Review Into Care Recommendations

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Abstract

Clinical health care providers have been increasingly called on to respond to the physical inactivity epidemic in the United States. Given their high frequency of contact with sedentary patients, health care professionals, such as physicians, nurses, dietitians, nurse practitioners, exercise physiologists, and pharmacists, are in a unique position to facilitate physical activity via clinical counseling interventions. The literature on national, state, and local investigations that have assessed the frequency of physician-based physical activity counseling was reviewed. Despite the recent appeals and importance of physical activity in preventing and managing diabetes, results indicated that only about 40% of U.S. physicians regularly engage in physical activity counseling, with little improvement over the past few decades. In addition, three recent reviews on the efficacy of physician-based physical activity counseling have generated equivocal results. Strategies that may increase the frequency and improve the effectiveness of clinical counseling are discussed.

Physical inactivity is a clear threat to American public health,[1] with at least 23% of deaths from chronic diseases linked to sedentary lifestyles[2] and costing taxpayers $77 billion annually in medical expenses.[3] Regular physical activity, however, is associated with numerous health benefits. As described in the American Diabetes Association position statement on exercise, a physically active lifestyle for individuals with diabetes reduces blood glucose levels and improves insulin sensitivity.[4] The U.S. Department of Health and Human Services recommends that adults get at least 2.5 hours of moderate physical activity each week.[5] More than 60% of U.S. adults are insufficiently active, however, and > 25% are completely inactive during their leisure time.[1] Women, ethnic minorities, and less educated adults represent the least active subgroups.[6]

Because of the inactivity of the American population along with the strong link between physical activity and diabetes, the U.S. Preventive Services Task Force[7] and *Healthy People 2010*[8] recommend that physical activity counseling be included as part of preventive health care services. Similar appeals have been made since at least the 1980s.[9]

It remains unclear how often physicians actually engage in this sort of counseling behavior. The primary purpose of this article is to review the literature regarding the prevalence of physician-based physical activity counseling. In addition, strategies for improving the frequency and effectiveness of physician counseling will be discussed.

Methods

A literature search was conducted using the PubMed online database (http://www.ncbi.nlm.nih.gov/pubmed) to produce relevant articles on physician-based physical activity counseling. Additionally, the "ancestry approach" was employed by

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searching bibliographies of selected studies.[10] Specific inclusion criteria incorporated studies that were published since 1983 in the English language, employed a quantitative assessment method, and collected data directly from U.S. physicians.

Studies that assessed other health care providers (e.g., nurses, dietitians, nurse practitioners, or physician assistants) were excluded because of the lack of available articles that directly assessed these groups. However, the findings are discussed across all health care providers in the Discussion section. Key words used in the online search included physician, counseling, physical activity, and exercise. The primary outcome of interest was the frequency or proportion of physicians who engage in physical activity counseling. Studies are summarized chronologically and presented as national and state/local assessments.

Studies were broken down by design, sample, measures, and findings. In addition, each study was considered in the context of how well it may support the design, development, and implementation of clinical applications. Methodological quality (e.g., sample size, assessment tool, and internal validity) and experimental design were considered in placing the observation in the context of program design principles previously described in the literature.[11]

Results

One hundred seventeen unduplicated records were initially returned from the online search. Twelve studies (seven from the online search and five from the bibliographies search) met the inclusion criteria (Table 1).

National assessments

Relatively few national surveys assessing the frequency of physician counseling have been conducted. Early reports generally indicated low engagement in counseling. A 1985 survey of 350 family practice physicians revealed that 40% of respondents advised their patients on physical activity, and only 15% offered structured exercise prescriptions.[12] A 1991 random sample of 1,251 general and specialty practice physicians from various sites around the United States found that 48% reported counseling inactive patients about exercise.[13] At around the same time, Russell and Roter[14] reviewed the audiotapes of 439 doctor-patient office interactions from the United States and Canada. Despite 43% of all interactions including a discussion on diet or weight control, only

Table 1. Studies on the Frequency of Physician-Based Physical Activity Counseling

Study	Design	Sample	Measures	Findings	Rating/Comments
Wechsler et al., 1983[19]	Cross-sectional survey	433 primary care physicians from Massachusetts (82 general practitioners, 73 family practice, and 278 internists)	Proportion of physicians who routinely ask patients about exercise	The response rate was 76%. 47% of physicians routinely asked their patients about exercise (31% of general practitioners, 47% of family practitioners, and 53% of internists).	Fair: Self-report assessment; overly broad definition of counseling; adequately powered sample
Wells et al., 1984[16]	Cross-sectional survey	151 physicians from a California county medical society (45 family practitioners, 44 internists, 49 surgeons, and 11 obstetricians-gynecologists)	Proportion of physicians who engaged in exercise counseling oriented toward primary and tertiary prevention	Response rate was 76%; 25% of physicians reported counseling their patients about exercise.	Fair: Self-report assessment
Orleans et al., 1985[12]	Cross-sectional survey	350 family practice physicians from across the United States	Proportion of physicians who advised patients about exercise, offered programs, and/or made referrals to other programs	The response rate was 57%; 40% of physicians advised their patients about exercise; 15% had exercise programs at their practice; 18% gave referrals to other exercise programs.	Poor: Self-report assessment; sample size small for a national survey

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Table 1. Studies on the Frequency of Physician-Based Physical Activity Counseling

Study	Design	Sample	Measures	Findings	Rating/Comments
Lewis et al., 1991[13]	Cross-sectional survey	1,251 general practice and specialist physicians from across the United States (654 generalists, 597 specialists)	Proportion of physicians who engaged in exercise counseling to all patients	The response rate was 75%; 47.5% of physicians reported counseling their patients about exercise (51% of generalists, 43.5% of specialists).	Fair: Self-report assessment; good power in sample size with clear definition of counseling
Reed et al., 1991[20]	Cross-sectional survey	126 physicians from Utah (63 family practitioners, 63 internists)	Proportion of physicians who recommend exercise to at least half of their patients	The response rate was 62%; 44% of physicians reported regularly recommending exercise to their patients.	Poor: Self-report assessment; small sample size
Williford et al., 1992[21]	Cross-sectional survey	168 physicians from Alabama (75% either family practitioners or internists)	Proportion of physicians who encourage exercise to their patients and/or develop exercise prescriptions	The response rate was 69%; 91% of physicians reported encouraging exercise; 30% reported developing exercise prescriptions.	Poor: Self-report assessment; unclear definition of exercise counseling
Russell and Roter, 1993[14]	Cross-sectional observation (video)	439 taped doctor-patient interactions from across the United States and Canada (49 physicians, 439 patients) (It was not possible to separate the responses generated from each country's physicians in this study.)	Percentage of interactions where physical activity discussion was observed	21% of interactions involved discussions about physical activity habits.	Good: Objective assessment; adequately powered sample
Sherman and Hershman, 1993[17]	Cross-sectional survey	422 internal medicine physicians from Massachusetts	Proportion of physicians who counsel (variable)% of their patients about exercise	The response rate was 61%; 17% of physicians reported counseling 0–25% of their patients, 22% reported counseling 26–50% of their patients, 28% reported counseling 51–75% of their patients, and 33% reported counseling 76–100% of their patients about exercise.	Fair: Self-report assessment; clear breakdown and definition of exercise counseling

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Table 1. Studies on the Frequency of Physician-Based Physical Activity Counseling

Study	Design	Sample	Measures	Findings	Rating/Comments
Podl et al., 1999[22]	Cross-sectional observation (video, billing review)	4,215 doctor-patient interactions from northeastern Ohio (138 family practitioners)	Percentage of interactions where exercise counseling was observed	20.1% of interactions involved counseling on physical activity.	Good: Objective assessment with good power in sample size; clear definition of exercise counseling
Walsh et al., 1999[23]	Cross-sectional observation (video)	175 physicians from four San Francisco–area hospitals (81% internists, 19% family practitioners)	Proportion of physicians who engage in exercise counseling and/or exercise prescription writing to at least half of their patients	The response rate was 54%. 43% of physicians reported counseling their patients about exercise. 14% reported prescribing exercise regularly.	Fair: Self-report assessment with small sample size; good differentiation between counseling intensities
Abramson et al., 2000[15]	Cross-sectional observation (video)	298 primary care physicians from across the United States (84 family practitioners, 79 pediatricians, 58 geriatricians, and 77 internists)	Proportion of physicians who engage in exercise counseling to at least 60% of their patients	The response rate was 25%. 38% of family practitioners, 12% of pediatricians, 22% of geriatricians, and 48% of internists reported counseling their patients about exercise.	Fair: Self-report assessment; small sample size (mainly due to low response rate), but clear definition of exercise counseling
Johansen et al., 2003[18]	Cross-sectional observation (video)	277 nephrologists from across the United States	Percentage of physicians who often ask, counsel, ask plus counsel, prescribe, provide written materials, refer, or provide equipment regarding exercise for dialysis patients	The response rate was not available. Results were reported as follows: 46.3% asked, 55.1% counseled, 38.0% asked plus counseled, 28.2% prescribed, 5.8% provided written materials, 25.1% referred, and 11.4% provided equipment.	Fair: Self-report assessment; good sample size, but limited representation of U.S. physicians; good differentiation between counseling intensities

21% addressed physical activity in particular.

More recent data on national assessments came from a sample of primary care physicians from internal medicine, family practice, geriatrics, and pediatrics.[15] Of the 304 doctors who responded, 12% of pediatricians, 22% of geriatricians, 38% of family practitioners, and 48% of internists reported counseling > 60% of their patients on the benefits of regular exercise. Consistent with other research,[16,17] physicians who regularly engaged in exercise themselves were most likely to counsel their patients about physical activity. Another recent national survey assessed the frequency of counseling among nephrologists and found that 55% reported counseling their dialysis patients often about exercise.[18]

State and local assessments

The majority of studies focused on assessing the frequency of physician counseling at the state level or in specific local regions, such as cities or metropolitan areas. Similar to national surveys, early research observed low engagement in counseling. A 1983 survey conducted by Wechsler et al.[19] analyzed the counseling practices of 433 primary care physicians (general practice, family practice, and internal medicine) in Massachusetts. Forty-seven percent of those surveyed reported "routinely asking" patients about exercise. Interestingly, 40% of physicians felt "very prepared" to counsel

their patients, but only 8% felt "very successful" in their efforts. A 1984 survey by Wells et al.[16] found that only 25% of California physicians surveyed from a county medical society reported regularly providing exercise counseling.

A 1991 survey of Utah family practitioners and internists revealed that 87% of physicians reported a strong belief in the benefits of exercise, but only 44% prescribed exercise to at least half of their patients.[20] Similarly, Williford et al.[21] found 91% of surveyed physicians reported encouraging their patients to exercise, but only 30% consistently developed exercise prescriptions. A 1993 mail-in questionnaire of Massachusetts internal medicine doctors found that 33% reported counseling at least three-fourths of their patients about physical activity.[17] A study of 4,215 office visits with family practice physicians in northeastern Ohio observed exercise counseling in 20% of office visits, with patients who were older, male, or chronically ill receiving the bulk of counseling.[22]

Walsh et al.[23] conducted a comprehensive written survey of 175 internal medicine and family practitioners at four San Francisco–area hospitals. Results indicated that 43% of physicians reported counseling at least half of their patients about exercise. Only 14%, however, reported offering an exercise prescription for their patients. Attending and older physicians were the most active counselors.

Discussion

Literature review conclusions

It appears that the percentage of U.S. physicians who regularly counsel their patients on physical activity is low, with the exact number probably falling somewhere in the range of 30–50%. Regional variation was unremarkable, but there was some evidence to indicate higher rates of counseling among kidney specialists working with dialysis patients.[18]

This approximation falls close to a 1994 report that estimated that 30–60% of U.S. physicians regularly ask their patients about exercise.[24] Corroborating evidence has also appeared from the consumer's end. Four surveys involving U.S. adults revealed that 28–48% reported receiving physician advice on physical activity.[25–28] Despite the recent appeals for more physical activity counseling in clinical care and the fact that most individuals with diabetes have at least some contact with a primary care provider, little to no increase in counseling was observed over the past few decades.

Conclusions were limited by several factors. Although most studies received a fair or good methodological rating and were representative of different specialties, "counseling" encompassed a loose operational definition across studies, ranging from simple advice to detailed exercise prescriptions. The biggest weakness, however, involved the use of self-report instruments to assess physician counseling behavior. All but two studies used voluntary mail-in questionnaires (with a response rate averaging ~ 60%) to assess self-reported counseling. Nonstandardized self-report instruments open the door to questionable reliability (e.g., response biases, demand characteristics).[29]

Not surprisingly perhaps, the two studies that used direct observation (and received the highest quality ratings) to assess physical activity counseling found the lowest rates of counseling. Future research attempting to assess the frequency of physician-based physical activity counseling should strive to use more objective assessment tools.

Counseling efficacy

Given the increased attention physical activity has received among public health agencies, it is tempting to simply suggest that physicians should counsel their patients more frequently. Three systematic reviews on the efficacy of physician counseling, however, have called such suggestions into question.[30–32] The general consensus of these articles indicated that physician counseling outcomes tend to be modest and short-lived at best. Methodological shortcomings limited the validity of most trials,[32] but even large, well-conducted investigations have yielded mixed results.[33,34]

Interventions focusing on a tailored approach, such as those based on the Transtheoretical Model,[35] have shown the most promise to date. More research is clearly needed to identify the most effective intervention components for consistent, long-term success.

Broader implications and recommendations

Equivocal findings in the literature on physician-based physical activity counseling have essentially left health care providers with a dilemma about how to best go about addressing the problem of physical inactivity in their patients. The most common barriers cited by clinicians include inadequate training, insufficient time, little reimbursement, and a perceived lack of effectiveness.[36] These barriers must be addressed to help the broader health care community have a meaningful impact on sedentary lifestyles.

Some clinicians need training that provides them with the background and confidence necessary to engage in counseling. Basic counseling skills are already part of some health disciplines (e.g., nursing and dietetics), but these skills could also be included in residency training or continuing education for physicians.[36] In addition, more immediate environmental cues, such as chart reminders, could be used during office visits to prompt nurses, medical assistants, or ancillary clinic staff to raise the issue of physical activity during office visits with patients most likely to suffer the sequelae of an inactive lifestyle (e.g., diabetes, obesity, and arthritis). Referrals to other resources, such as interactive Internet-based programs, could complement office-based conversations and give patients more ongoing support between visits.

Perhaps most importantly, the positive consequences of engaging in physical activity counseling, from the clinicians' standpoint, must be strengthened. Although simply increasing reimbursement for counseling offers one possible solution, it would likely reduce benefits for other preventive services (e.g., mammograms or lipid screenings) in the current health care services reimbursement environment. First, clinical counseling for physical activ-

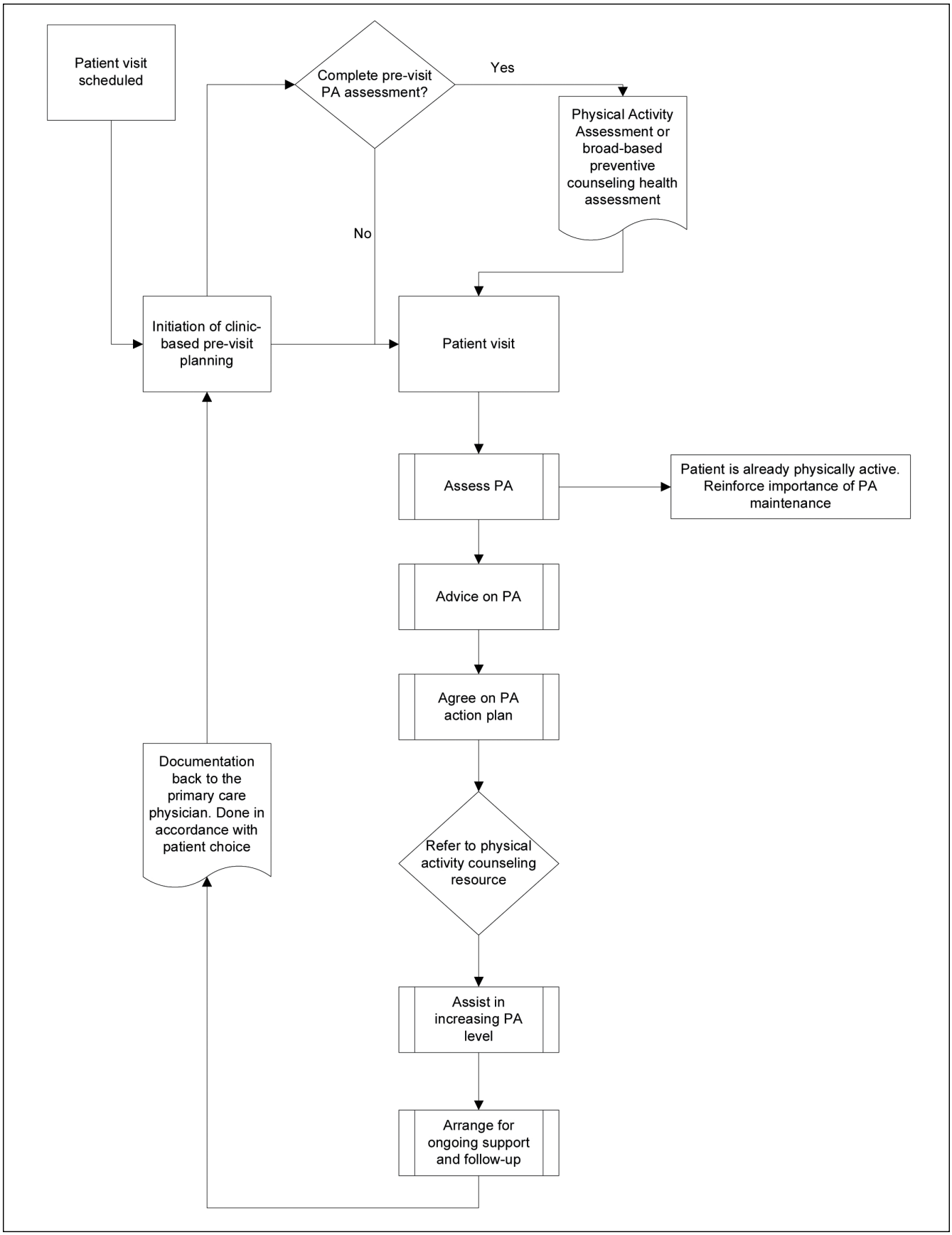

Figure 1. Evidence-informed model of clinical counseling for physical activity. PA, physical activity.

ity must be reinforced with effective results. In other words, clinicians would likely begin or continue counseling more frequently if they saw it work for their patients.

Achieving this goal is complex given that successful counseling efforts typically address the span of factors that determine whether an individual is physically active or sedentary. Some of these may include readiness to change, self-efficacy, perceived stress, outcome expectations, time, social support, and facilities access.[37,38] Addressing the gamut of such factors for each patient during a brief office visit is likely impossible.[39] Consequently, as some researchers have suggested,[31,40] a multidisciplinary approach may be best, wherein providers raise the issue of physical activity in their sedentary patients and refer patients to a support system of allied health professionals that can provide ongoing counseling and follow-up as part of their diabetes education efforts.

Examples and descriptions of such integrated programs are scarce but have been outlined to provide counseling for several health behaviors, including physical activity.[11] In this design, physicians, nurses, and other primary care providers engage in brief counseling using an adapted 5As model (i.e., Assess the issue, Advise change, Agree on action plan, Assist with securing resources, and Arrange follow-up)[41] to "prime" patients for more detailed discussions about physical activity.[42] Patients are then connected directly to a centralized resource center that is staffed with dietitians, exercise physiologists, and behavior-change experts who provide ongoing follow-up (Figure 1). Progress is documented in patients' electronic medical records. Over a 6-month period, this service significantly improved stages of readiness for physical activity among patients with type 2 diabetes.[43] In addition, it nearly doubled walking activity for adults enrolled in a pedometer-based walking program.[44]

Improving the results that physician counseling generates may be the key to increasing its frequency and making it a systemic, sustained part of clinical encounters. Change in the reimbursement models for preventive services will also be necessary to increase physical activity counseling. The multidisciplinary approach, which is already common practice in diabetes self-management education, offers a promising avenue for future research because it aligns the key health service providers via an extended-care team. Such an approach is seen to complement the role of primary care providers by providing the "nuts and bolts" of physical activity counseling.

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