BRIEF REPORT JNP

Improving Exercise Prescribing in a Rural New England Free Clinic

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ABSTRACT

This quality improvement project was undertaken to improve exercise prescribing frequency and quality in a rural New England free clinic. Prescribing guidelines from the American College of Sports Medicine and the American Academy of Family Physicians were used. Following a provider education program and workgroup-implemented documentation changes, overall exercise prescription frequency increased significantly from 34.6% in the pre-intervention group to 65.0% in the post-intervention group ($P < .05$). The use of some prescription elements (frequency, intensity, and timing) improved significantly ($P < .05$). Further study from the patient perspective is warranted.

Keywords: exercise prescription, FITT-PRO mnemonic, free clinic, inactivity, quality improvement, rural

INTRODUCTION

Background Knowledge

The World Health Organization (WHO) identifies inactivity as the fourth leading cause of mortality, accounting for 6% of deaths worldwide.[1] This places inactivity behind only high blood pressure (13%) and tobacco use (9%) as causative factors for mortality and is equal to high blood glucose (6%). Although obesity logically follows from a sedentary lifestyle, inactivity is a risk factor for abdominal adiposity and coronary heart disease independent of body mass index (BMI).[2]

Multiple factors and antecedents contribute to inactivity, including lack of time or motivation, increasing use of technology for work and recreation, and lack of knowledge.[3] For lower income persons, barriers to daily exercise exist in terms of money, time, and access to exercise equipment, yet most intervention studies have not accessed disadvantaged populations.[4,5] Barriers to exercise notwithstanding, research findings suggest that advice from respected health care professionals can have a positive impact on exercise rates.[6,7]

Despite evidence supporting the benefits of exercise, providers use exercise prescribing on a limited basis. In 2010, only 9.2% of provider office visits in the United States included counseling patients to participate in regular physical activity.[8] One reason for providers' failure to prescribe is lack of time, even when structured programs are in place to assure consistency and follow-up.[9-12] Provider knowledge deficits about the specifics of exercise prescribing and confidence in prescribing abilities also play a role.[13]

Providers are most adept at utilizing the first 2 elements of the "Ask-Advise-Agree-Assist-Arrange" model used for change coaching[12]; they are not as comfortable at assessing readiness to change ("Agree") or providing follow-up ("Assist" and "Arrange"). Ackermann et al[14] found that providers were more likely to prescribe exercise for patients who were in the contemplation stage of change. In addition, providers are generally more inclined to target activity prescribing for obese individuals or those suffering from chronic disease.[8,15]

The American College of Sports Medicine (ACSM) has published recommendations for exercise prescribing in all populations.[6] The prescribing mnemonic "FITT-PRO" (Frequency, Intensity, Type, Time, and PROgression), as described by the American Academy of Family Physicians guideline, instructs the provider to consider each type of exercise (aerobic or endurance, flexibility, strengthening, and balance) and develop a prescription.[16] For example, a provider may create a prescription that reads: "Aerobic activity such as walking (Type), daily (Frequency) for 30 minutes per day (Timing). Exercise hard enough so that you cannot sing but are still able to talk (Intensity). Start

with 10 minutes per day as tolerated; increase by 5 minutes every 3 days until you reach 30 minutes daily" (Progression).

Local Problem

As part of ongoing quality improvement (QI) efforts before this project, gaps were identified in addressing leisure time physical activity with each patient. The Leavitt's Mill Free Health Center (LMFHC) patient baseline activity rates (36%) and documentation of provider exercise prescribing (32%) were comparable to national statistics for similar populations (N = 50).[8,17]

Intended Improvement

The aim of this QI project was to improve exercise prescribing frequency and improve exercise prescribing quality at LMFHC by implementing the ACSM exercise prescribing guidelines and the prescribing mnemonic FITT-PRO from the American Academy of Family Physicians.[6,16] The target for improvement was to double exercise prescribing rates from baseline.

METHODS

Ethical Issues

Approval for this project was granted by the institutional review board of Simmons College and the board of directors of the LMFHC. Potential bias by the project investigator, who also served as the health center's director, was safeguarded by the use of graduate assistants who managed all primary data and de-identified data before analysis.

Setting

The setting for this project, LMFHC, is a nurse-managed, rural free clinic located in southern Maine. With an active patient roster of 250, LMFHC has served over 1,700 patients in its 12-year history. The majority of patients are working adults living at or below 250% of the federal poverty level. Six part-time volunteer primary care providers and 3 part-time nursing support staff form the patient care team. Patient care documentation is paper-based, with selected patient statistics and visit data maintained in an encrypted database.

Planning the Intervention

Needs assessment interviews and educational session. After receiving informed consent, clinic staff (n = 9) were interviewed to ascertain their comfort and knowledge about exercise prescribing and advising. The data from these interviews formed the basis of the 90-minute educational intervention. The educational session was provided, which included a brief overview of current evidence regarding exercise benefits and the principles of exercise prescribing using the ACSM exercise prescribing guidelines, and the FITT-PRO mnemonic.[6,16] Specific information was offered regarding the particular absolute and relative contraindications to an exercise prescription. Strategies for incorporating the FITT-PRO elements of a complete exercise prescription were presented with an emphasis on timing and progression, components unfamiliar to this group of providers.

QI workgroup. Monthly staff meeting/QI workgroups began in the first month of the project and continued throughout the 7 months of the project. The focus of the staff QI workgroups involved systems improvements such as documentation tools, patient resources, and workflow changes. Standardized exercise prescription forms (basic and advanced) were adopted from the Veterans Administration's MOVE! website.[18] The forms were paper-based using a check-box format for "Frequency, Intensity, and Timing" and requiring free text entry for "Type and Progression." Initially, the forms were made available for use in a central cabinet, but the QI group soon recommended they be placed on the chart to cue providers at the annual wellness visit.

Data Collection and Analysis

Patient records were audited using a convenience sampling method. Records of the most recently occurring history and physical were audited pre-intervention (n = 52) and post-intervention (n = 42). Chart audit data elements included: patient age and gender; body mass index (BMI); chronic illnesses/comorbidities; baseline leisure time physical activity; and documentation of exercise prescribing and inclusion of the FITT-PRO elements. Data from chart audits were analyzed using chi-square testing to detect differences.