Research Article
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Primary care referral for exercise evaluation and prescription in obese populations

Abstract

Background: The Centers for Medicare and Medicaid Services approved primary care setting reimbursement for diet and exercise interventions for individuals with BMIs>30kg/m2. As the obese population often presents with co-morbidities, exercise evaluation and prescription warrants special consideration. Two allied health professions are cited as potential providers: Exercise Physiologists (EP) and Physical Therapists (PT).

Methods: Thirteen KSAs for exercise evaluation and prescription in obesity and metabolic disease domains were selected from the American College of Sports Medicine's published guidelines. The questionnaire was delivered to 411 EPs and 673 PTs. Participants were asked to self-rate competence on a 6-point Likert scale (1=not competent, 6=very competent).

Results: Statistically significant differences were observed for summed self-rated competence (EP=5.37+0.52; PT=3.42+1.07; P<0.001), and across each KSA, with EPs reporting higher competence for all 13 KSAs (EP min=4.78+1.34, max=5.85+0.41; PT min=1.84+1.37, max=4.87+1.36; P<0.01).

Conclusion: Exercise physiologists self-rate as "competent"; whereas, physical therapists self rate as "moderately competent" in areas related to energy expenditure and "not competent" in critical areas germane to safety.

Keywords: physical activity, chronic disease prevention, health policy, public health

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Abbreviations: CMS, centers for medicare and medicaid services; EP, exercise physiologists; PT, physical therapists; IBT, intensive behavioral therapy; AMA, american medical association; RCEP, registered clinical exercise physiologists; EPACQ, exercise and physical activity competence questionnaire; KSAs, knowledge skills and abilities; APTA, american physical therapy association; BMI, body mass index

Introduction

In response to the myriad of chronic disease conditions associated with physical inactivity, poor nutritional habits and obesity, the Centers for Medicare and Medicaid (CMS) announced in late 2011, reimbursement for Intensive Behavioral Therapy (IBT), as a stand-alone billable service, in which individuals with a BMI>30kg/m^2 can receive counseling and therapy for intensive exercise and dietary programming to promote sustained weight loss and health.[1,2] Medicare beneficiaries are potentially eligible for 22 sessions in a 12-month period if all program requirements are met. Eligible participants receive one face-to-face visit every week for the first month; one face-to-face visit every other week for months 2 through 6; and one face-to-face visit every month for months 7 through 12, if the beneficiary meets the 6.6lb. (3kg.) weight loss requirement during the first 6months. Currently, all IBT sessions must take place in a primary care setting and CMS recommends referring to diet and exercise content experts (e.g. Dietitians). However payment does not follow, if the services are delivered outside of the primary care setting.

In primary care settings,<12% of physicians counsel patients about exercise,[3] and when recommendations are delivered, they are usually prescribed in a cursory manner.[4] In part, this delivery mode has produced dismal results, with less than 5% to 28% of the U.S. population meeting the most basic physical activity public health recommendations,[5,6] despite primary-care providers being keenly aware of the benefits of exercise.[7–17] Physicians routinely cite lack of time, lack of reimbursement, and lack of content expertise as the most salient barriers for not providing more comprehensive services regarding exercise programming.[18] As this may preclude the effectiveness of CMS's IBT program, many leaders of public health and medical organizations have called for the American Medical Association (AMA) to partner with the ACSM to develop a delineated arm of allied healthcare, in which primary care providers can refer for exercise evaluation and prescription. The Exercise is Medicine campaign (exerciseismedicine.org), a joint effort by the AMA and ACSM, has evolved recently as a widely publicized initiative to meet this goal, among others. One of the top priorities of this initiative is to establish a conduit between primary care providers with credentialed exercise professionals that can safely and effectively prescribe and supervise exercise for obese individuals. To date, two healthcare professions are largely cited as potential providers for the exercise programming aspect of IBT, and more broadly, primary care exercise programming for overweight, metabolically at risk populations in general: Exercise Physiologists (EP) and Physical Therapists (PT).[19–21]

Exercise physiologists have a successful empirical track record of

providing exercise programming in outpatient settings such as cardiac and oncology rehabilitation programs.[19] In particular, registered clinical exercise physiologists (RCEP) are required to have a master's degree or higher in exercise physiology, a minimum of 600 hours of clinical exercise physiology experience and a passing score on the ACSM registered clinical exercise physiologist examination. Based on scientific evidence RCEPs assess, design, implement, and supervise exercise programming for primary and secondary prevention of chronic diseases associated with obesity, such as cardiovascular disease and type II diabetes, as there is an enormous empirical base to support exercise in sufficient quantity and quality as a standard of care for these diseases.[22–24] Physical Therapists assess, design, implement, and supervise exercise programming to reduce pain, improve function and restore mobility in largely a rehabilitation-occupational context such as post trauma or injury. From this perspective, even though considerable educational and experiential overlap is possible, there is a sizeable difference in scope between the two professions and the tendency to conflate the two, as "exercise professionals", may be misleading and clinically inappropriate across disease, disorder, or disability. Exercise prescription and programming for obese populations who often have additional comorbidities present a special challenge for potential providers to safely produce weight loss and health utilizing exercise.[25] And given the outlined 6.6 lb. (3 kg.) temporal weight loss requirement for beneficiaries to continue receiving reimbursement for IBT treatment, it appears crucial at this juncture to identify the most appropriate and qualified allied healthcare provider to deliver safe and effective exercise programming for obese individuals. Therefore, as a first approach to answering this question, the purpose of the present study was to assess the self rated competency of practicing EPs and PTs with the published standards, knowledge, skills, and abilities as put forth by the ACSM for exercise evaluation and prescription, specifically for obese, metabolically at risk populations.

Methods

Instrumentation

Predicated on the Exercise and Physical Activity Competence Questionnaire (EPACQ),[26] data were collected using a similar questionnaire developed exclusively for the purpose of this investigation. In 1975, ACSM first established guidelines for exercise programming with the first edition of ACSM's Guidelines for Exercise Testing and Prescription,[27] and now on its 9th edition, it remains the most widely circulated gold standard set of clinical guidelines for exercise practice. In this text, there are>100 published KSAs (knowledge, skills and abilities) presented to establish empirically based standards to safely and effectively evaluate, prescribe and supervise exercise programming for a wide variety of populations. For the purposes of the present study, a panel of 3 post-graduate educated clinical exercise physiologists and 3 doctorate of physical therapy candidates were instructed to select ACSM KSAs for clarity and purpose that were specific to evaluating and prescribing exercise for obese, metabolically at risk individuals. On multiple occasions, panelists met and discussed KSAs that were selected, and all panelists had to agree for a KSA to be incorporated into the questionnaire. KSAs for the questionnaire were drawn from ACSM's Guidelines for Exercise Testing and Prescription, thereby supporting and maintaining content validity. The final questionnaire was comprised of 13 KSA's that are specific to exercise testing and prescription in the context of weight loss, obesity, metabolic disease, and pharmaceutical interactions (Table 1). Participants were asked to rate self-perceived competence for all 13 KSAs on a 6-point Likert scale (1=not competent, 6=very competent). Ratings<2 were deemed "not competent", ratings between>2 and<4 were deemed "moderately competent", and ratings>4 were deemed "competent" as described by Vallance et al.[28]

Table 1 Self rated competence for critical Knowledge, skills, and abilities to evaluate, prescribe, and supervise exercise programming for obese, metabolically at risk populations

»» Not competent 1 2 3 4 5 6 Very competent »»			
KSA	**RCEP (N=183)**	**PT (N=231)**	***P***
Ability to design and prescribe an exercise training program that results in a 6.6lb. Weight loss in a predetermined time period	5.15±1.14	3.81±1.56	<0.001
Ability to calculate the effect of caloric intake and energy expenditure on weight management	5.29±1.04	3.60±1.54	<0.001
Ability to design, adapt, and supervise an appropriate exercise prescription for individuals with cardiovascular disease	5.85±0.41	4.40±1.39	<0.001
Ability to design, adapt, and supervise an appropriate exercise prescription for individuals with type II diabetes	5.69±0.56	4.47±1.40	<0.001
Ability to design, adapt, and supervise an appropriate exercise prescription for individuals that are clinically obese	5.59±0.67	4.62±1.32	<0.001
Ability to explain the public health consensus on acceptable and unacceptable methods of weight loss	5.33±0.87	4.06±1.52	<0.001
Ability to explain how body composition can be altered with exercise, diet, and behavior modification	5.67±0.61	4.87±1.19	<0.001
Ability to risk stratify individuals and make legally appropriate recommendations for cardiovascular exercise stress testing	5.56±0.76	3.09±1.64	<0.001
Ability to select and employ appropriate techniques for preparation and measurement of Electrocardiogram (ECG)	5.36±1.06	1.86±1.32	<0.001
Ability to select and employ appropriate techniques for preparation and measurement of oxygen consumption	4.78±1.34	2.42±1.59	<0.001
Ability to safely perform a cardiovascular exercise stress test in individuals who are currently taking antianginals, antihypertensive, antiarrhythmics, anticoagulants, bronchodilators, and hypoglycemic medications	4.87±1.36	1.84±1.37	<0.001
Ability to safely prescribe a cardiovascular exercise training program in individuals who are currently taking antianginals, antihypertensive, antiarrhythmics, anticoagulant, bronchodilators, and hypoglycemic medications	5.61±0.66	2.89±1.64	<0.001

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Table Continued....

»» Not competent 1 2 3 4 5 6 Very competent »»			
KSA	**RCEP (N=183)**	**PT (N=231)**	***P***
Ability to describe to health care professionals the acute and long-term physiological adaptations that occur in response to cardiovascular exercise training	5.01±1.12	2.54±1.47	<0.001

Data were collected across the United States during the time period of January to April 2012.

Procedures

A cross-sectional survey research design was employed. The University of Vermont's Institutional Review Board approved all instrumentation and methods. Due to the methods, the study was approved under the exempt status, with no requirement for an informed consent. However, at initial contact, full explanation, rationale, and contacts for the study were presented to potential participants. Potential participants were identified from American Physical Therapy Association (APTA) and ACSM databases. Registered clinical exercise physiologists and practicing outpatient PTs that were specifically practicing in orthopedic and cardiopulmonary settings were invited to participate. In total, 411 RCEPs and 673 PTs were invited to participate through email correspondence. An email was sent to all participants that explained the study and directed them to an internet link in which the questionnaire could be completed online and automatically submitted. A total of 3 emails were sent to encourage participation, and after completion, no follow-up contact was required. Data were collected in 2012 and analyzed in 2013 by Student's T-tests using SPSS version 21. Data are presented as means and standard deviations.

Results

Data were collected for 183 RCEPs and 231 PTs with a response rate of 38%. Overall self rated competence for RCEPs was 5.37+0.52, and for PTs it was 3.42+1.07; P<0.001. Furthermore, RCEPs reported higher competence for all 13 KSAs (EP min=4.78+1.34, max=5.85+0.41; PT min=1.84+1.37, max=4.87+1.36; P<0.01) (Table 1). Although, our data were operationalized using the criteria reported by Vallance et al.,[28] for medical students, it is unlikely clinicians would be viewed as functionally competent or provide best practice with a self rating of<4 out of 6 on KSAs reported to be commensurate with providing safe and effective exercise programming for obese populations. The ACSM requires a passing score of 550 points out of 800 for all certification exams. Operationalized to our data, this would imply that a PT or RCEP would have to self rate at a minimum of 4.12 out of 6 to qualify as functionally competent to work with obese, metabolically at risk patients, as ACSM views this baseline score "as minimal competency or the lowest acceptable score." Our KSAs were largely selected from energy balance and metabolic disease domains. In these domains, according to the present data, PTs did not self-rate as functionally competent, as on average across all 13 KSAs they self-reported ~12% below (PT=3.42+1.07) the minimum competency level. Moreover, if the 13 KSAs are viewed as individual competencies, PTs meet the minimal competency threshold for 4 out of the 13 selected competencies or approximately 30% of the KSAs established by the ACSM to safely and effectively perform exercise testing and prescription in this population. Using the same criteria, RCEPs self-reported as functionally competent with an average self-rating of 20% above the baseline threshold of 4.12. RCEPs also met the minimum competency for all 13 of the individual competencies selected for this study or 100% of the KSAs designated by the ACSM to safely and effectively perform exercise testing and prescription for obese, metabolically at risk populations. Please see Table 1 for full results.

Conclusion

The results from this investigation provide preliminary support that exercise physiologists are the most qualified and appropriate allied healthcare professionals for exercise programming in obese, metabolically at risk populations; whereas, physical therapists self-report as moderately competent with some of the knowledge, skills, and abilities to safely and effectively carry out these tasks in the population outlined by the Center for Medicare and Medicaid's Intensive Behavioral Therapy program. Although similar exercise programming competency studies have been performed in medical students[28] and school of medicine administrators,[26] to our knowledge, this is the first report to directly examine the self-rated competency of practicing registered clinical exercise physiologists and physical therapists.

The results support our a priori hypothesis, as all of the investigators currently reside in an academic department that trains both exercise scientists and physical therapists. From our purview, these two health professions have a preponderate focus and scope of practice, and this hypothesis bears out in the current analysis. Clinical exercise physiologists tend to be trained in the domains of health promotion, disease prevention and treatment, with a broad focus on aerobic and strength conditioning programs aimed at chronic impairments, such as cardiovascular disease, metabolic disease, cancer, pulmonary disease, etc. Conversely, physical therapists tend to be trained in the domain of rehabilitation, with a broad range of therapeutic modalities, such as massage therapy, ultrasound, exercise, electrical stimulation, and traction, with a focus on rehabilitating an injury, trauma, or disability. By these outlined scopes of practice, physical therapists would not be expected to fare well on KSAs aimed at baseline competencies for working with patient populations that fall squarely within an exercise physiologist's educational and clinical training and ultimately, scope of practice.[27] Nevertheless, considerable public and published declarations have been made by affiliates of such organizations as the American Physical Therapy Association[21,29] and the World Confederation for Physical Therapy (http://www.wcpt.org/node/33341) that physical therapists are qualified to carry out exercise programming in patient populations that fall outside of their defined scope of practice.

Clinical exercise physiology is currently an unregulated profession in almost all U.S. states, which allows for anyone to identify as a qualified clinical exercise physiologist. In an effort to remedy this, currently 8 U.S. states are seeking licensure (Maryland, Massachusetts, Montana, North Carolina, Oklahoma, Texas, Utah, and Wisconsin), with Louisiana as the only state that currently has licensure for clinical exercise physiologists. To sit for the registered clinical exercise physiologist examination offered by ACSM, at minimum, one must possess a graduate degree in exercise physiology

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and obtain>600 hours of clinical exercise physiology experience. If this is used as a baseline, the educational requirement for clinical exercise physiologists is commensurate with other health professions, such as nursing, dietitians, speech pathologists and physical therapists. Until licensure can be established nationwide for clinical exercise physiologists, the results of the current study support the aforementioned level of training as the baseline threshold to safely and effectively deliver exercise programming for obese at risk populations, as the central tenet of defining a scope of practice is to "protect the public from unregulated practice."

Although further lab-based competency studies might be warranted, the findings from the present analysis support registered clinical exercise physiologists as the most appropriate and qualified healthcare professional to deliver exercise programming in patient populations that are outlined in the Center for Medicare and Medicaid's Intensive Behavioral Therapy program. Primary care providers should consider referring to clinical exercise physiologists that meet the minimum standards to be a registered clinical exercise physiologist as defined by the American College of Sports Medicine and recognized by the American Medical Association, American Heart Association, and the American Public Health Association.

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Conflict of interest

The author declares no conflict of interest.

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