Exercise Recommendations in Patients With Newly Diagnosed Fibromyalgia

Brad Wilson, DO, Horace Spencer, MS, Patrick Kortebein, MD

Objective: To evaluate exercise recommendations in patients newly diagnosed with fibromyalgia.
Design: A retrospective chart review.
Setting: A public university rheumatology clinic.
Patients: Patients newly diagnosed with fibromyalgia (N = 122).
Main Outcome Measurements: Frequency and type of exercise recommendations.
Results: The mean (standard deviation) age of these patients with fibromyalgia was 45 ± 12 years; 91% were women. Exercise was recommended as part of the documented treatment plan in 47% of these patients (57/122); only 3 patients had a documented contraindication for exercise. Aquatic exercise was most frequently recommended (56% [32/57]), followed by combined aquatic-aerobic exercise (26% [15/57]), and, infrequently, aerobic exercise only (5% [3/57]); only 7% of these patients (4/57) were referred for physical therapy. The primary method of communication was verbal discussion (94% [54/57]).
Conclusions: Although there is well-documented evidence that exercise is beneficial for patients with fibromyalgia, we found that less than half of patients with newly diagnosed fibromyalgia in our study were provided recommendations to initiate an exercise program as part of their treatment plan. Further investigation of these findings are warranted, including evaluation of other university and community rheumatology practices as well as that of other physicians caring for patients with fibromyalgia. However, our findings indicate that there appears to be an opportunity to provide more specific and practical education regarding the implementation of an exercise regimen for patients with newly diagnosed fibromyalgia. Physiatrists may be particularly well suited to manage the exercise component of patients with fibromyalgia because of their specialized training in exercise prescription.

PM R 2012;4:252-255

INTRODUCTION

Fibromyalgia is a clinical syndrome characterized by chronic diffuse pain with muscle tender points, as well as dysfunctional sleep, fatigue, and inactivity [1,2]. In young and middle-aged women, fibromyalgia is the most common cause of generalized musculoskeletal pain, and is approximately 6 times more common in women than men among all age groups [2-4]. Current treatment recommendations for fibromyalgia strongly support a multifaceted regimen, including patient education, cognitive behavioral therapy, specific pharmacotherapy, restorative sleep, and exercise. Exercise may include low-impact aerobic exercise (eg, aquatic therapy), strengthening, and flexibility [2,3,5]. Several recent systematic reviews regarding exercise in patients with fibromyalgia have found beneficial effects on physical fitness, aerobic performance, pain, and tender point thresholds as well as quality of life, in subjects participating in exercise training compared with control patients [6-10]. However, despite the demonstrated positive impact of exercise training for patients with fibromyalgia, these studies have found that, in general, drop-out rates are relatively high (eg, 13%-44%) and that continued compliance after an exercise intervention is variable [7,10].

Although the efficacy of exercise in patients with fibromyalgia has been documented in multiple research investigations, to our knowledge, no previous study has examined how recommendations regarding the implementation of an exercise program are disseminated to

B.W. Department of Physical Medicine and Rehabilitation, University of Arkansas for Medical Sciences, Little Rock, AR
Disclosure: nothing to disclose

H.S. Department of Biostatistics, University of Arkansas for Medical Sciences, Little Rock, AR
Disclosure: nothing to disclose

P.K. Department of Physical Medicine and Rehabilitation, University of Arkansas for Medical Sciences, Little Rock, AR 72205. Address correspondence to: P.K.; e-mail: pmkortebein@uams.edu
Disclosure: nothing to disclose

Peer reviewers and all others who control content have no relevant financial relationships to disclose.

Disclosure Key can be found on the Table of Contents and at www.pmrjournal.org

Submitted for publication October 14, 2011; accepted November 25, 2011.

PM&R
1934-1482/12/$36.00
Printed in U.S.A.

Vol. 4, 252-255, April 2012
DOI: 10.1016/j.pmrj.2011.11.012

patients with fibromyalgia in a clinical setting. Therefore, the purpose of this study was to examine how frequently exercise was recommended to patients with newly diagnosed fibromyalgia, and, in those patients to whom an exercise recommendation was made, to identify the method of patient education regarding the initiation of the exercise program.

METHODS

A retrospective chart review was completed of a convenience sample of 200 patients seen in the University of Arkansas for Medical Sciences Rheumatology Clinic from January 2009 to March 2010 with a diagnosis of fibromyalgia (International Classification of Diseases, Ninth Revision, Clinical Modification [ICD-9-CM] code 729.1). Each individual patient chart was reviewed in detail by one of the investigators (B.W.), with assistance from the senior investigator (P.K.). A patient was selected for more detailed review only if this was the patient's initial evaluation at the University of Arkansas for Medical Sciences Rheumatology Clinic and fibromyalgia was the patient's primary diagnosis at that initial visit. A patient was excluded if the notations in the chart indicated that the patient had previously been diagnosed with fibromyalgia and this was a subsequent clinic visit for fibromyalgia management (ie, a follow-up visit). Study data were collected in a deidentified manner and managed by using the Research Electronic Data Capture (REDCap) electronic data capture tool hosted at the University of Arkansas for Medical Sciences. REDCap is a secure, Web-based application designed to support data capture for research studies and provides the following: (1) an intuitive interface for validated data entry, (2) audit trails for tracking data manipulation and export procedures, and (3) automated export procedures for seamless data downloads to common statistical packages [11]. The following data were collected using REDCap: age, gender, American College of Rheumatology fibromyalgia diagnostic criteria (ie, widespread pain, symptom duration >3 months, ≥11/18 tender points), and documentation of an exercise recommendation in the treatment plan; if exercise was recommended, then data regarding the type of exercise (eg, walking, aquatic), the method of communication of the exercise information (eg, verbal discussion, handout), and documentation regarding any contraindications for exercise also were collected. Questions regarding interpretation of the clinical documentation were resolved by joint review of the clinical chart by 2 of the investigators (B.W., P.K.).

Statistical Analysis

Data obtained from this retrospective chart review are presented descriptively. Specifically, means (standard deviations [SD]) are presented for continuous data, whereas counts and percentages are presented for categorical data. No formal statistical testing was performed.

Table 1. *Exercise recommendations in patients with fibromyalgia*

	No. of Patients/Total (%)
Exercise recommended	57/122 (47)
Aquatic exercise	32/57 (56)
Aquatic + aerobic exercise	15/57 (26)
Aerobic exercise	3/57 (5)
Physical therapy referral	4/57 (7)
Exercise, general	3/57 (5)

RESULTS

Of the 200 patient charts, 122 (61%) met the inclusion criteria for patients with newly diagnosed fibromyalgia; the other 78 patients had previously been seen in this clinic for fibromyalgia management. The mean (SD) age of the 122 patients was 45 ± 12 years, and 111 were women (91%). Clinical documentation of all 3 American College of Rheumatology criteria for fibromyalgia was found for only 35 of the 122 patients (29%); documentation of the individual criteria was much higher, with widespread pain and at least 11 positive tender points documented in 67 patients (55%), and symptom duration longer than 3 months in 75 patients (61%). A documented contraindication for exercise was noted in 3 of the 122 patients (2%); one patient had a knee meniscal tear, another had pulmonary fibrosis with limited pulmonary reserve, and the third individual had multiple medical problems (eg, asthma, prior knee and/or ankle surgery).

The documentation regarding exercise recommendations for the 122 patients with a new diagnosis of fibromyalgia is summarized in Table 1. Exercise was recommended in 57 of the patients (47%). Of these 57 patients, aquatic exercise was most frequently recommended (56%), with referrals for combined aquatic and aerobic exercise documented in 26% of these patients, and only 5% were advised to initiate solely an aerobic exercise program. A formal referral for physical therapy was documented in only 4 patients; 2 of these patients were advised to start an aquatic exercise program as well. In 3 patients, only vague recommendations regarding an exercise program were reported (eg, "begin exercise," "stressed exercise"). The primary documented method of communication for these exercise recommendations was verbal (54/57 [95%]), with the other 3 patients provided educational handouts.

DISCUSSION

Numerous research studies have reported on the positive impact of exercise on pain and function for patients with fibromyalgia; however, it has not previously been reported how frequently exercise is recommended to these patients in actual clinical practice. In this novel study from a university rheumatology clinic, we found that an exercise program was

recommended in less than half of the patients with newly diagnosed fibromyalgia.

Patients with fibromyalgia often are inactive and deconditioned. The initial study that documented the beneficial effects of aerobic exercise for patients with fibromyalgia was published more than 20 years ago [12]. Since then, many studies have examined a variety of exercise interventions in patients with fibromyalgia. In general, moderately intense (eg, 55%-75% of age-adjusted maximum heart rate) aerobic exercise appears to be most beneficial for improving the physical fitness and self-efficacy of these patients, as well as decreasing their tender point pain threshold [7,9,10,13]. Other nontraditional forms of exercise (eg, tai chi, yoga, Pilates) may be of benefit as well [7]. Patient education regarding how to initiate an exercise program is important, because many patients with fibromyalgia are fearful that exercise will exacerbate their symptoms. In general, it is recommended that these patients start exercising at a low intensity and then gradually progress to higher-intensity exercise [7,9,14,15]. Dropout rates from exercise studies have been rather high, and the percentage of patients with fibromyalgia who persist with an exercise program after study completion has generally been low [7,9,10]. Subjects that continue exercising tend to do better long term, with less pain and better maintenance of function [7,8,10].

Virtually all of the exercise studies in patients with fibromyalgia have been performed as part of a research intervention, and we were unable to identify any prior studies that examined how exercise recommendations are communicated to these patients in actual clinical practice. Our results indicate that, in this university rheumatology clinic, it is relatively uncommon for patients with newly diagnosed fibromyalgia to be advised to initiate an exercise program for management of their fibromyalgia symptoms. There are several possible reasons for the relatively low rate of exercise recommendations. In general, physicians have limited training regarding the specifics of prescribing exercise, and thus these physicians may not have been comfortable providing detailed information regarding an exercise program; although we did not examine this, these physicians may have been more inclined to provide a medication prescription instead. Alternatively, although these particular rheumatologists may have had the expertise to provide an exercise prescription, they may have believed that they were too busy and that they lacked the time to explain the specifics of an exercise program during a clinic visit. In addition, these rheumatologists may have noted poor compliance or efficacy when providing exercise recommendations in the past, and they may have decided that it was not worthwhile to recommend exercise. Future investigations might examine these issues.

Physiatrists are trained in prescribing exercise as well as in the evaluation and management of patients with fibromyalgia as part of their residency training. Thus, our findings would indicate that, for physiatrists who manage patients with fibromyalgia, there appears to be an opportunity to more specifically address the initiation and maintenance of an exercise program as part of the multifaceted treatment regimen for these patients. In fact, some physiatrists may be the primary physician managing a patient with fibromyalgia and, as such, may have a greater opportunity to emphasize the benefits of exercise and provide more specific education. For physiatrists with a more limited interaction with patients with fibromyalgia, at a minimum, exercise should be reinforced as a known effective component for the management of fibromyalgia.

There are several limitations to this study. Our data were collected retrospectively from a single university rheumatology clinic and obtained from the clinical documentation recorded in the medical chart; it is certainly possible that these physicians did in fact provide more detailed information and/or informational brochures regarding initiation of an exercise program, and that this was simply not documented. In addition, less than one-third of these patients fulfilled the American College of Rheumatology criteria for fibromyalgia by their clinical documentation, thus it could be argued that some of these patients did not actually have fibromyalgia. This finding is most likely due to inadequate documentation, because the age and gender distribution of our patients is typical of a fibromyalgia population. However, this issue should not be relevant to our investigation, because we were interested in whether the evaluating physician recommended exercise as a treatment and not in whether the physician's documentation supported a diagnosis of fibromyalgia. Exercise contraindications were documented in very few patients, although it is possible that exercise was not prescribed in additional patients due to an undocumented medical condition or other concern (eg, not interested in exercise). Future investigations could address these limitations by more accurately documenting the physician-patient discussion regarding treatment recommendations in individuals with fibromyalgia. Also, because at least an informal medical evaluation should be completed before initiating an exercise program, subsequent studies might examine how physicians decide whether patients with fibromyalgia are medically fit for exercise.

With future investigations, it would appear prudent to replicate our evaluation to determine whether the exercise prescribing patterns (eg, frequency, method of communication) for patients with newly diagnosed fibromyalgia are similarly low in additional university and private clinical rheumatology practices. In addition, similar studies might examine the rates of exercise prescription by other types of physicians who frequently manage patients with fibromyalgia (eg, primary care physicians, physiatrists). Other areas of investigation might include comparing the frequency of medication prescriptions with exercise recommendations for patients with fibromyalgia and examining barriers to providing an exercise prescription (eg, lack of knowledge regarding exercise, lack of time). If time

constraints are in fact a limiting factor for physicians, then it may be worthwhile to investigate the benefits of patient educational handouts, Internet-based educational programs (eg, American College of Sports Medicine "Exercise Is Medicine"), and/or the use of ancillary staff (eg, exercise trainers, physical therapists) to provide more thorough education and training regarding the initiation and maintenance of an exercise program for patients with fibromyalgia.

CONCLUSIONS

Despite the recognized research evidence regarding the beneficial effects of exercise for the management of fibromyalgia, our findings indicate that fewer than half of the patients with newly diagnosed fibromyalgia in this study were advised to initiate an exercise program. Additional investigations are needed to determine whether similar low rates of exercise prescription are common in patients diagnosed with fibromyalgia. If verified, our findings would indicate that a majority of these patients would benefit from more specific and practical information regarding the implementation and maintenance of an exercise regimen as part of their multimodal treatment program. Because physiatrists have specialized training in exercise prescription, they are well suited to provide this type of exercise education for patients with fibromyalgia. For exercise to be an effective component of fibromyalgia treatment in clinical practice, these patients must be provided the appropriate education and training to initiate and to remain engaged in an exercise program.

REFERENCES

1. Wolfe F, Smythe HA, Yunus MB, et al. The American College of Rheumatology 1990 criteria for the classification of fibromyalgia: Report of the Multicenter Criteria Committee. Arthritis Rheum 1990;33:160-172.
2. Smith HS, Harris R, Clauw D. Fibromyalgia: An afferent processing disorder leading to a complex pain generalized syndrome. Pain Physician 2011;14:E217-E245.
3. Goldenberg DL. Management of fibromyalgia syndrome. JAMA 2004;292:2388-2395.
4. Weir PT, Harlan GA, Nkoy FL, et al. The incidence of fibromyalgia and its associated comorbidities: A population-based retrospective cohort study based on International Classification of Diseases, 9th Revision codes. J Clin Rheumatol 2006;12:124-128.
5. Carville SF, Arendt-Nielsen S, Bliddal H, et al. EULAR evidence-based recommendations for the management of fibromyalgia syndrome. Ann Rheum Dis 2008;67:536-541.
6. Busch AJ, Schachter CL, Overend TJ, Peloso PM, Barber KA. Exercise for fibromyalgia: A systematic review. J Rheumatol 2008;35:1130-1144.
7. Busch AJ, Webber SC, Brachaniec M, et al. Exercise therapy for fibromyalgia. Curr Pain Headache Rep 2011;15:358-367.
8. Hauser W, Klose P, Langhorst J, et al. Efficacy of different types of aerobic exercise in fibromyalgia syndrome: A systematic review and meta-analysis of randomized controlled trials. Arthritis Res Ther 2010;12:R79.
9. Thomas EN, Blotman F. Aerobic exercise in fibromyalgia: A practical review. Rheumatol Int 2010;30:1143-1150.
10. Busch AJ, Barber KA, Overend TJ, Peloso PM, Schachter CL. Exercise for treating fibromyalgia syndrome. Cochrane Database Syst Rev 200717(4):CD003786.
11. Harris PA, Taylor R, Thielke R, Payne J, Gonzalez N, Conde JG. Research electronic data capture (REDCap): A metadata-driven methodology and workflow process for providing translational research informatics support. J Biomed Inform 2009;42:377-381.
12. McCain GA, Bell DA, Mai FM, Halliday PD. A controlled study of the effects of a supervised cardiovascular fitness training program on the manifestations of primary fibromyalgia. Arthritis Rheum 1988;31:1135-1141.
13. Jones KD, Liptan GL. Exercise interventions in fibromyalgia: Clinical applications from the evidence. Rheum Dis Clin N Am 2009;35:373-391.
14. Gowans SE, deHueck A. Pool exercise for individuals with fibromyalgia. Curr Opin Rheumatol 2007;19:168-173.
15. Rooks DS. Talking to patients with fibromyalgia about physical activity and exercise. Curr Opin Rheumatol 2008;20:208-212.

This CME activity is designated for 1.0 AMA PRA Category 1 Credit™ and can be completed online at me.aapmr.org. Log on to www.me.aapmr.org, go to Lifelong Learning (CME) and select Journal-based CME from the drop down menu. This activity is FREE to AAPM&R members and $25 for non-members.

CME Question

Which of the following is true regarding exercise prescription in this study of newly diagnosed fibromyalgia patients in a university-based rheumatology clinic?

a. Exercise was prescribed in over half the patients.
b. Exercise recommendations usually included a written therapy order.
c. An aquatic exercise program was recommended most frequently.
d. Alternative exercise program such as yoga and pilates were more frequently prescribed than aerobic exercise.

Answer online at me.aapmr.org