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Healthcare Provider Advice to Engage in Walking Regimens and Adherence in Women With Fibromyalgia

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Abstract

Purpose: The aim of the study was to analyze the profile of fibromyalgia patients receiving medical advice to walk and who complied with the advice according to a specific clinical pattern. A further aim has been to analyze the elements that increase adherence to walking.

Design: A cross-sectional study with 920 women with fibromyalgia.

Methods: Sociodemographic and clinical variables, walking behavior, and medical advice to walk were assessed.

Findings and Conclusions: Patients who adhere to walking have a lower likelihood of being tired. Regular walkers (patients who walk according to a specific clinical pattern) have a lower likelihood of comorbidity. Patients who receive medical advice to walk are more likely to walk more than 30 minutes and to take a break between bouts.

Clinical Relevance: Nurses caring for people with fibromyalgia should include strategies to promote walking, especially in patients with low adherence profiles, paying attention to all elements of behavior.

Keywords: Adherence; fibromyalgia; healthcare provider advice; nursing; walking.

Fibromyalgia is a chronic condition of unknown etiology characterized by chronic widespread pain present for more than 3 months and which often coexists with sleep disturbances, cognitive dysfunction, fatigue, high disability levels, and negative mood, among other symptoms (Wolfe et al., 2010).

Exercise is a crucial part of multicomponent treatments for people with fibromyalgia (Clauw, 2014; Sumpton & Moulin, 2014). In the past few years, studies analyzing the effects of different types of physical exercise (e.g., aerobic exercise, strength and flexibility training, tai chi, yoga, Nordic walking, vibration techniques) as well as a physically active lifestyle have been studied to determine their effects on fibromyalgia (Busch et al., 2011, 2013; Larsson et al., 2015). A meta-analysis carried out by Busch, Schachter, Overend, Peloso, and Barber (2008) provides moderate-quality evidence supporting that aerobic-only exercise, carried out at the intensity levels recommended by the American College of Sports Medicine, has positive effects on global well-being and physical function, and it may also have an effect on pain and tender points. Strength and flexibility remain underevaluated; however, strength training may have a positive effect on fibromyalgia symptoms (Busch et al., 2008). Among these forms of exercise, research supports aerobic training (low-moderate intensity) as a way to improve physical fitness and function, reduce fibromyalgia symptoms, decrease anxiety and depressive features, and improve quality of life (Busch et al., 2011; Guymer, Maruff, & Littlejohn, 2012; Sañudo, Carrasco, de Hoyo, & McVeigh, 2012).

Several studies have included walking as the main component of exercise programs, whereas others have assessed its effects independently. Specifically, walking has resulted in improvements in physical function, symptoms, self-efficacy, distress, well-being, and quality of life (Lee & Kang, 2016; O'Connor et al., 2015). Among fibromyalgia patients, positive effects of walking have been observed for a number of symptoms, such as pain, sleep, fatigue, tender point count, depression, and fitness (Fernandes, Jennings, Nery Cabral, Pirozzi Buosi, & Natour, 2016); aerobic capacity and tenderness (García-Hermoso, Saavedra, & Escalante, 2015); functional capacity and level of activity

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limitations (Mannerkorpi, Nordeman, Cider, & Jonsson, 2010); and emotional and mental health aspects, ventilatory anaerobic threshold, and maximum oxygen uptake (Kayo, Peccin, Sanches, & Trevisani, 2012; Valim et al., 2003). Some of these improvements have persisted for periods between 6 and 11 months (Burckhardt, Mannerkorpi, Hedenberg, & Bjelle, 1994; Giannotti et al., 2014) or even up to a year (Richards & Scott, 2002), showing even better results in comparison to other types of exercise in symptom management during the follow-up period (Kayo et al., 2012).

Walking regularly is a simple and inexpensive intervention, can be self-managed by the patients, and depends exclusively on individual motivation; however, it needs to be maintained for the longer term. An advantage is that the patient is involved in a therapeutic task, thus increasing self-management (Rooks et al., 2007). Nevertheless, some studies have shown that patients tend to present low adherence to different exercise recommendations, including walking (Geneen et al., 2017; Hicks et al., 2012). This low adherence has been associated with variables such as possible increases in symptoms (Busch et al., 2008), especially pain and fatigue. Although pain is the main symptom of fibromyalgia, fatigue is one of the most relevant symptoms (Eilertsen et al., 2015). Previous studies show that, in women with fibromyalgia, pain and fatigue are the main inhibitors for walking as exercise (López-Roig et al., 2016; Pastor et al., 2015). Different authors have pointed out the importance of certain aspects of walking, such as intensity (Norregaard, Lykkegaard, Mehlsen, & Danneskiold, 1997; van Santen et al., 2002) and persistence (Gowans & deHueck, 2004). Exercise programs must start at a level just below the participants' capacity and then progress slowly to assure tolerability. Even with these precautions, exercise may still produce short-term increases in pain and fatigue that should be tolerable and abate within the first few weeks of exercising (Gowans & deHueck, 2004).

In this sense, motivational interventions with general recommendations are not enough. Interventions for fibromyalgia need to be more specific and should be aimed toward increasing adherence to a particular walking pattern. This pattern should include specific amounts of time for walking, weekly frequency, consecutive number of weeks that walking should be maintained, and the possibility of breaks if deemed necessary to avoid fatigue and continue the activity. For example, one of the recommended patterns for fibromyalgia is to walk between 2 and 4 days a week, about 50 minutes, in bouts of 15–20 minutes, with a small rest between bouts over a minimum of six consecutive weeks (Gusi, Parraca, Adsuar, & Olivares, 2009).

Given what is known, the recommendation to walk is a key element for treatment in fibromyalgia. A significant association has been reported between the recommendation to walk and the actual carrying out of the behavior (Pastor et al., 2015), although not necessarily according to the recommended pattern for this population. Therefore, the recommendation to walk plays an important role in motivating the patient to do the behavior, but it must also incorporate specific educational guidelines about how to carry out the behavior correctly, according to the recommended pattern. These guidelines will help to prevent an increase in symptoms and to allow the patient to benefit from walking. Although motivation plays an important role, it is this specific information included in the guidelines that increases the adherence to the behavior. For example, it is known that one of the factors that contribute to the absence of pain is, in fact, the maintenance of walking through time (Gowans & deHueck, 2004).

Despite its importance, to our knowledge, there are no studies that analyze the role of healthcare provider advice on walking in fibromyalgia patients. Specifically, the characteristics of patients that adhere to the advice to walk are unknown, as are the characteristics of those who walk according to the recommended pattern for this population (Gusi et al., 2009). Also, there are no studies that analyze the elements of walking that differentiate between patients who have been advised to walk from those who have not. Although exercise is recognized as one part of the management of fibromyalgia, not all of the clinically relevant and practically important aspects of exercise advice have been identified (Busch et al., 2008). The recommendation to walk should be part of the nursing care plan, as this could contribute to clinically relevant outcomes in the management of patients with fibromyalgia (Karper, Jannes, & Hampton, 2006; Schaefer, 2004). This recommendation should include guidelines such as how and under what circumstances to carry out the behavior; interventions directed toward motivation should also be included, as this could increase adherence to the behavior and therefore enhance its benefits.

To obtain information to promote adherence, the aims in the current study are as follows:

Aim 1. Characteristics of patients:

Aim 1a. To analyze the differences between the profile (sociodemographics variables, disease progression, symptoms, and comorbidity) of the patients who have received the medical advice to walk and those who have not.

Aim 1b. To explore the differences in the proportions of patients receiving the medical recommendation to walk depending on the healthcare service they are attending.

Aim 2. Adherence to walking in patients who have received the advice to walk:

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Aim 2a. To analyze the differential profile (sociodemographics variables, disease progression, symptoms, and comorbidity) between the patients who walk and those who do not.
Aim 2b. To analyze the differential profile (sociodemographics variables, disease progression, symptoms, and comorbidity) between the patients who walk according to the recommended pattern and those who do not.
Aim 2c. To explore the differences in the proportions of patients who walk depending on the healthcare service they are attending.
Aim 2d. To explore the differences in the proportions of patients who walk according to the recommended walking pattern depending on the healthcare service they are attending.
Aim 3. Characteristics of walking behavior in those receiving versus not receiving medical recommendation to walk: To analyze the differential profile in relation to walking (days/week, minutes walking, consecutive weeks walking, breaks, and circumstances) among the women who walk having received medical advice to walk and those who walk in spite of not having received the recommendation.

Methods

Design

A cross-sectional descriptive study took place during 2012–2013.

Sample

This study is part of a larger study aimed at increasing unsupervised walking in fibromyalgia patients. The sample size was calculated considering a 5% of risk alpha and 80% of power, and a 30% drop-out rate (Pastor et al., 2014). A convenience sample was selected using patients' associations of Alicante (ADEFA), Elche (AFEFE), Madrid (AFIBROM) and Talavera de la Reina (AFIBROTAR), all in Spain, with a total of 2,438 members. Inclusion criteria for this study were three: female, between 18 and 70 years of age, and meet the London Fibromyalgia Epidemiology Study Screening Questionnaire criteria (London-4). A total of 2,227 met two of the inclusion criteria (women, between 18 and 70 years of age), according to the associations' records. Of them, 972 agreed to participate in the study. Finally, after applying the third criterion for inclusion (the London-4 criteria), 920 patients constituted the final sample (44 did not fit London-4 criteria and 8 questionnaires did not contain enough data). The London-4 is a questionnaire with four pain and two fatigue items. A positive screen was defined in two ways: (1) positive responses to all four items on pain and (2) positive responses to all pain and fatigue items (White, Harth, Speechley, & Ostbye, 1999). As no second clinical diagnosis confirmation was available, the London-4 criteria were used to ensure population homogeneity. Although these criteria screen only for widespread musculoskeletal pain and do not take into consideration other clinical aspects of fibromyalgia, they give an optimal sensitivity (100%) in fibromyalgia screening population studies and good positive predictive values for women in rheumatology settings (Branco et al., 2010).

Measures

Sociodemographic Variables and Time Since Diagnosis

A questionnaire was used to elicit demographic data including age, marital status, educational level, working status, temporary and/or permanent work incapacity, and time since diagnosis.

Comorbidity

Reported by patients in an "ad hoc" scale with dichotomous answers (yes/no) including diagnoses of hypertension, diabetes, hypercholesterolemia, lung disease, heart disease, digestive disease, allergy, lower back pain, osteoarthritis, spondylitis, slipped disc, scoliosis, arthritis, lupus, osteoporosis, and other chronic diseases in an open answer. The total number of diseases was calculated in addition to fibromyalgia.

Symptoms Associated to Fibromyalgia

(a) Pain intensity. Following the recommendations set by Jensen et al. (Jensen, Turner, Romano, & Fisher, 1999; Jensen, Turner, Turner, & Romano, 1996), the mean score from four items was used: the maximum, minimum, and overall pain intensity during the last 7 days and pain intensity at the current time in a numerical rating scale (0 = *no pain* and 10 = *the worst pain you can imagine*; internal consistency = 0.87). This scale has shown good psychometric properties in Spanish fibromyalgia samples (Pastor et al., 2014).

(b) Other fibromyalgia symptoms (fatigue, waking unrefreshed, and cognitive symptoms). Six items were created that would allow patients to assess all three symptoms (fatigue, waking unrefreshed, and cognitive symptoms); these were taken from the fibromyalgia symptom severity criteria developed by Wolfe et al. (2010), based on two criteria (intensity and interference of the symptom in daily living). Therefore, two items were designed for each symptom, one as a measure of intensity and the other as a measure of interference. These items were assessed with a numerical rating scale (0 = *nothing* to 10 = *totally*), so as to maintain the same scoring format as with the items assessing pain. A composite measure (arithmetic mean of intensity and interference items) was obtained for each symptom: fatigue (internal consistency = 0.72), waking unrefreshed (internal consistency = 0.60), and cognitive symptoms (internal consistency = 0.90).

Treatment Services

Data were collected regarding the specialist service where the participants were being treated. The answer had five options that were not mutually exclusive: rheumatology,

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primary care, orthopedics, rehabilitation, and neurology. An open option as "Other (please specify)" was also added.

Walking Behavior

Three variables or sets of variables were considered relating to walking (all questions referred to walking with the aim to do physical exercise):

(a) Walking (yes/no). Using a dichotomous response, participants were asked if they walk with the specific purpose of doing physical exercise.

(b) Elements of walking behavior. Ad hoc self-reported items were used to record walking including the following aspects:

- days per week (1 day, 2 days, 3 days, 4 days, more than 4 days);
- minutes of walking per session (less than 30 minutes, between 30 and 60 minutes, more than 60 minutes);
- consecutive weeks walking: never, rarely (1 or 2 weeks a month, but not every month), sometimes (1 or 2 weeks a month every month or every week but not more than one consecutive month), mostly (every week of the month for two consecutive months), and always (every week of the month for three or more consecutive months);
- breaks when out walking (before or after 15 minutes, after 30 minutes, or no breaks);
- circumstances when out walking (leisure time, daily/work activities).

These elements of walking behavior have been contemplated both independently (for Aim 3) and together creating a composite variable (regular/insufficient walkers; for Aim 2b and Aim 2d). This composite measure refers to adhering to the recommended walking pattern for this population (Gusi et al., 2009). Although the walking behavior proposed by Gusi et al. (2009) for fibromyalgia patients was selected, the minimum daily time was reduced to 30 minutes and at least 2 days a week because the targeted population is sedentary. Many authors describe the difficulty of adherence to physical exercise in patients with fibromyalgia (Busch et al., 2008; O'Connor et al., 2015); this is due to fibromyalgia patients reporting that physical activity might both aggravate and relieve pain (Jones & Liptan, 2009). This composite measure was chosen as it includes several components that encourage fibromyalgia patients to do unsupervised physical exercise (Pastor et al., 2014). Participants were classified into women who walk meeting the recommended walking behavior (regular walkers) and those who do not, walking below the minimum (insufficient walkers).

Medical Advice to Walk

Participants were asked, in a dichotomous (yes/no) question, if they had been advised to walk by their doctors.

Ethical Considerations

This study has been approved by the Research Ethics Board of the Miguel Hernández University and the Rey Juan Carlos University. Informed consent was also obtained from each participant.

Data Analysis

Analyses were performed with SPSS 21 Statistics Package (Armonk, NY). Descriptive analysis and internal consistency analysis (Cronbach's alpha coefficient) were performed. Comparisons were performed using χ^2. Because of the number of comparisons, level of significance was established at $p < .01$. Binary logistic regression analyses were conducted to adjust variables and to identify the corresponding predictors (sociodemographic/clinical profile and walking behavior) according to the three established aims. Exploratory analyses were performed using logistic regression for each variable. The criterion for the inclusion of later variables in the multivariate analysis was p (Wald) values < .20 in the univariate regressions (Hosmer & Lemeshow, 2000). The predictors that met the criteria were introduced in the multivariate analysis using the BSTEP (LR) method and applying the Hosmer–Lemeshow goodness of fit test. Binary logistic regression used chi-square statistic and its significance level. Significance level (p value) is the probability of obtaining the chi-square statistic given that the null hypothesis is true, which is compared to a critical value ($p \leq .05$ or $p \leq .01$) to determine if the overall model is statistically significant.

Results

Participants

Nine hundred twenty women with fibromyalgia with an average age of 52.64 years (SD = 8.82, range = 24–69) were included. Most of them (74.9%) were married, 9% were single, 11.5% divorced, and 4.6% were widowed. Forty-three percent had primary studies, 29.5% had secondary education, 15.5% had high school education, and 12% had no studies. Twenty-nine percent were working at the time of the study, 24.6% did not work, and 19.3% were absent from work. Seven percent were retired (not because of pain) whereas 10.7% were retired because of pain, and 9% were on sick leave. Average reported time since diagnosis was 9.94 years (SD = 5.74). A more extensive description of the participants' characteristics can be found in previous work (Pastor et al., 2014).

Aim 1. Receiving Medical Advice to Walk

Profile of Patients Who Had Medical Advice to Walk

Regarding the possible differential profile of the patients with (n = 712, 77.5%) and without (n = 207, 22.5%)

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medical advice to walk, a logistic regression was conducted, which included the following, as predictors: sociodemographic variables, time since diagnosis, symptoms (pain intensity, fatigue, waking unrefreshed, and cognitive symptoms), and comorbidity variables. None of these variables met the criteria to be included as a predictor (χ^2 = 1.329, p = .249, df = 1, p[goodness of fit test] = .969).

Health Services Where Women Are Being Treated and Medical Walking Advice

In relation to the health services, 44% of patients were being treated within just one service, 20% at two services, and 28% at three or more services, and 18% reported not being treated in any service (Table 1). Of the patients who were being treated in one service, most of them were being treated in the rheumatology service or primary care. Regarding the category "Others," several services were mentioned, although they present a low frequency ($n \leq 5$) and belong to services that are outside the reach of this study as they refer to treating symptoms which are noncharacteristic of fibromyalgia (digestive, ophthalmic, endocrine, cardiology, among others). Also, it is important to point out that 4.9% (n = 45) of the patients in this category report being treated by psychiatric services.

The possible difference in proportions of patients receiving medical advice to walk depending on the service/s where they were being treated was analyzed. Chi-square tests showed significant differences in proportions of patients receiving medical advice to walk (χ^2 = 7.895, df = 1, p = .005), depending on whether or not they were being treated in rheumatology services (independently or in combination with other services). Specifically, patients who were being treated in rheumatology services received medical advice to walk in a greater proportion (81.8%) than those who were not being treated in this service (74%). No differences were found regarding other health services.

Aim 2. Adherence to Walking in Patients Who Have Received the Advice to Walk

Profile of Patients Who Adhere to the Medical Advice to Walk

Comparisons were made within the group of patients receiving the advice to walk (n = 712), between those who actually do walk (n = 446, 62.6%) and those who do not. Results of logistic regression confirmed that patients who walk have a higher likelihood of being unemployed (OR = 1.701, 95% CI [1.178, 2.456]) or retired (OR = 2.209, 95% CI [1.368, 3.568]). They are also less likely to be tired (OR = 0.901, 95% CI [0.829, 0.979], χ^2 = 17.474, p < .0001, p[goodness of fit test] = .059).

Profile of Patients Who Adhere to the Medical Advice to Walk and Do So According to or Not According to the Recommended Pattern

Comparisons were made within the group of patients who adhere to the advice, between those who walk according to the walking pattern (regular walkers n = 237, 53.1%) and those who walk but do not walk according to the pattern (insufficient walkers). Results of logistic regression showed that regular walkers have a lower likelihood of comorbidity (OR = 0.909, 95% CI [0.838, 0.986], χ^2 = 8.942, p = .011, p[goodness of fit test] = .485).

Health Services Where Women Are Being Treated: Differences in Walking Adherence and in Following the Recommended Pattern

Regarding the services where patients are being treated, within the group of patients receiving the advice to walk, no statistically significant differences in proportions of patients who walk, according or not to the recommended pattern, were found (Table 1).

Aim 3. Walking Following the Medical Recommendation: Differences in Walking Behavior

Table 2 shows the frequencies of the different elements of the behavior (days/week, minutes walking, consecutive weeks walking, breaks, and circumstances) in women

Table 1 Distribution of the sample by services. Frequencies of medical advice, walking and regular walking by services

Service	*n*	(%)	Medical Advice of Walking *n* (%)	Walking *n* (%)	Regular Walking *n* (%)
No service	165	17.9	114 (69.1)	98 (59.4)	53 (54.1)
One service	405	44.0	313 (77.5)	234 (57.8)	120 (51.3)
Rheumatology	162	17.6	131 (80.9)	93 (57.4)	45 (48.4)
Primary care	160	17.4	116 (73)	100 (62.5)	56 (56)
Traumatology	6	0.6	6 (100)	4 (66.7)	3 (75)
Rehabilitation	6	0.6	6 (100)	2 (33.3)	1 (50)
Neurology	8	0.9	7 (87.5)	6 (75)	1 (16.7)
Other services	63	6.8	47 (74.6)	29 (46)	14 (48.3)
Two services	182	19.8	150 (82.4)	111 (61)	60 (54.1)
Three or more services	168	18.2	135 (80.4)	102 (60.7)	50 (49)
Total	920				

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Table 2 Frequencies of walking behavior elements in fibromyalgia patients with and without medical advice to walk

	Walking With Medical Advice (*n* = 446)	Walking Without Medical Advice (*n* = 99)
Days of the week used to walk		
1 day	32 (7.2)	5 (5.1)
2 days	69 (15.5)	23 (23.2)
3 days	103 (23.1)	21 (21.2)
4 days	80 (17.9)	18 (18.2)
More than 4 days	162 (36.3)	32 (32.3)
Continuous time walking		
Never	2 (0.4)	0 (0)
Rarely	43 (9.6)	10 (10.1)
Sometimes	106 (23.8)	24 (24.2)
Mostly	118 (26.5)	20 (20.2)
Always	177 (39.7)	45 (45.5)
Time when out walking		
Less than 30 minutes	82 (18.4)	25 (25.3)
Between 30 and 60 minutes	289 (64.8)	61 (61.6)
More than 60 minutes	75 (16.8)	13 (13.1)
Breaks when out walking		
Yes, before or after 15 minutes	149 (33.4)	26 (26.3)
After 30 minutes or no breaks	297 (66.6)	73 (73.7)
When out walking		
Leisure	231 (52)	50 (50.5)
Daily activities	213 (48)	49 (49.5)

Note. Data are presented as *n* (%).

who walk having received medical advice to walk and in those who walk not having received the recommendation.

Results of the logistic regression confirmed that patients who walk having received medical advice to walk ($n = 446$, 81.8% of patients who walk) compared to those who walk even though they have not been advised to ($n = 99$, 18.2% of patients who walk) are more likely to walk between 30 and 60 minutes ($OR = 1.995$, 95% CI [1.167, 3.409]) or more than 60 minutes ($OR = 2.524$, 95% CI [1.179, 5.406]) and to take a break at 15 minutes or earlier ($OR = 1.683$, 95% CI [1.011, 2.801], $\chi^2 = 8.920$, $p = .030$, p[goodness of fit test] = .996).

Discussion

The results show no differences in sociodemographic, symptom, comorbidity, or clinical profiles between patients receiving advice to walk and those who do not, indicating that walking is considered an effective and recommended treatment for all fibromyalgia patients, regardless of their pain and fatigue levels or other associated symptoms. Although no specific studies were found with which to compare these results, the data point in the direction of previous literature, showing the beneficial effects of walking in fibromyalgia patients (Kayo et al., 2012; Mannerkorpi et al., 2010; O'Connor et al., 2015) and the recommendation to advise it to all patients within multicomponent treatments (Häuser, Thieme, & Turk, 2010). In this context, a particularly interesting result is that symptoms (including pain intensity) were not a differentiating variable in relation to the advice to walk. Despite the erroneous beliefs that patients have about the negative effects of walking on pain (De Bruijn et al., 2011; Pastor et al., 2015), the data suggest that the recommendation to walk should be given to all patients, regardless of their individual pain level.

Another interest of this study has been to analyze the specialist services in which patients report being treated. To our knowledge, there are no studies that specifically analyze the different health services where fibromyalgia patients are treated. Previous studies have shown the large amount of health resources required by this disease (Luciano et al., 2016), specifically in rheumatology and primary care services, in comparison with other patients treated in these services. The unknown etiology and the complexity of the pain experience increase the rotation through different specialists before and after diagnosis (Rivera, 2012).

A topic of discussion is the treatment of these patients in specialized services or in the context of primary care (Sicras-Mainar et al., 2009). The data in this study show very similar percentages of treatment in the rheumatology service and in primary care, when patients are being treated in only one service. However, it should also be noted that more than half of the sample was being treated in more than one service, even up to six services, which shows that the current treatment of these patients requires many specialists because of their varied and complex symptoms in addition to pain (Sumpton & Moulin, 2014).

The data also show that being treated in rheumatology service increases the likelihood of patients receiving the advice to walk but does not guarantee their adherence or regularity. Given that the majority of patients, in similar percentages, are treated either in primary care or in rheumatology services, it would seem that the recommendation to walk is a treatment modality most characteristic of the latter. An important practical application in this regard is to promote the recommendation to walk within the context of primary care. As previously noted, an advantage of walking is that it is a simple and inexpensive behavior that can be self-managed by the patients (Rooks et al., 2007) and also that the health professionals giving the advice need no specialist knowledge or techniques to be able to make the recommendation. Indeed, in this context, it is possible to conclude that nurses have a key role in making recommendations regarding walking for fibromyalgia patients, as well as in monitoring adherence.

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One issue of particular interest for its practical relevance is walking adherence. Previous studies indicate adherence rates to be around 60% (López-Roig et al., 2016). The data from the current study show that adherence is related primarily to working variables, specifically associated to the circumstances that allow patients to have more free time to perform the behavior (unemployed or retired; López-Roig et al., 2016). Of the symptom variables, being less tired is associated with higher probability of walking, also consistent with the results previously found by the research group in relation to control beliefs (Pastor et al., 2015), which is an essential element of the Theory of Planned Behavior (Fishbein & Ajzen, 2010). The Theory of Planned Behavior (Fishbein & Ajzen, 2010) is one of the most popular psychosocial models about prediction of behaviors, including physical exercise in general and walking in particular (Ajzen, 2011). Control beliefs refer to the variables that either facilitate or inhibit the accomplishment of the behavior, along with the assessment of their facilitating or inhibiting power. It is interesting that pain is not a differentiating symptom for walking.

One of the elements of the behavior, the use of breaks to avoid fatigue (Gusi et al., 2009), could be incorporated as a necessary element in giving specific advice to patients about how to perform the behavior to improve their adherence (Fontaine, Conn, & Clauw, 2011). Furthermore, to improve walking adherence, patients' lifestyles should be analyzed, especially among those who are working, to provide advice and scenarios as to when and where to perform the behavior. The advantages of walking (Rooks et al., 2007) in comparison to other types of physical exercise (simple, inexpensive, easy, accessible, safe, with a low injury rate) facilitate the generalization of the behavior in different contexts.

This study has a number of limitations that should be borne in mind. First of all, the findings are based on cross-sectional data, and the use of self-reports was included to measure symptoms and elements of the walking pattern. Another limitation is the difficulty of generalizability of the findings to other samples of fibromyalgia patients; nevertheless, it should be pointed out that the sample size is considered to be representative and that no differences were found in the three areas sampled (Pastor et al., 2014).

In spite of the above limitations, the current study has important practical implications. The fact that almost half of the sample that received advice to walk does not carry it out according to the recommended walking pattern shows the importance of health professionals' training in the promotion of adherence to adequate walking behavior in fibromyalgia patients. Specifically, the data show two distinctive elements that differentiate patients who walk because of medical advice: the time dedicated to the walking behavior (walking more than 30 minutes) and the taking of breaks at 15 minutes. The inclusion of a break as part of the walking pattern (and not in response to fatigue) is another key element to ensure adherence and to improve the beneficial mid-term behavioral effects of walking (Mannerkorpi, 2005).

However, in the current results, there are other elements that have shown to be essential in improving symptoms but that do not appear as distinctive of patients who walk according to medical advice. Among these elements, the role of persistence should be highlighted, in the short term (days/week) and in a mid-long term (consecutive weeks; Gowans & deHueck, 2004).

As is known, adherence increases when the indications are operational, specifying all the elements involved and including situational and temporal circumstances where the behavior will take place (McDonald, Garg, & Haynes, 2002). In this sense, the explicit explanation of the walking behavior, with all the elements involved, should be promoted by health professionals, as a therapeutic aim. As pointed out earlier, rehabilitation nurses, as part of an interdisciplinary healthcare team, can play an important role in this regard, within the comprehensive care of fibromyalgia patients, through two fundamental functions: on the one hand, they have an effect on motivation and help to plan implementation to achieve the recommended behavior, and on the other hand, they reinforce and follow up on walking once the behavior has been implemented.

Many patients are referred to rehabilitation settings for physical or exercise therapy. Although exercise is helpful in the control of the pain, stiffness, fatigue, sleep disorders, and mood changes, a holistic approach to treatment is more effective. Rehabilitation nurses are uniquely positioned to offer patients a holistic approach to help them to be as healthy as possible while also having a chronic pain disease (Schaefer, 2004). Attention to exercise, in particular to walking, promoting the implementation and continuity of the recommended behavior, constitutes one of the possible fields of action within this holistic approach.

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Key Practice Points

- Walking regularly is a simple and inexpensive recommendation for fibromyalgia patients, which results in improvements in physical function and symptoms; nevertheless, adherence is low.
- Data show two distinctive elements that differentiate patients who walk because medically advised to do so: the time dedicated to the walking (walking more than 30 minutes) and the taking of breaks every 15 minutes.
- The role of persistence in the short term (days/week) and mid-long term (consecutive weeks) has shown to be essential in improving symptoms, but it does not appear to be distinctive of patients who walk according to medical advice.
- The fact that almost half of the sample who received the advice to walk does not do it according to the recommended walking pattern shows the importance of health professionals' intervention. Rehabilitation nurses, in collaboration with physicians and other members of the interdisciplinary team, can play an important role in this regard.

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