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A Randomized Trial of a Lay Person-Led Self-Management Group Intervention for Back Pain Patients in Primary Care

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Abstract

Study Design. Randomized, controlled trial.

Objective. To evaluate a four-session self-management group intervention for patients with pain in primary care, led by trained lay persons with back pain. The intervention was designed to reduce patient worries, encourage self-care, and reduce activity limitations.

Background Data. Randomized trials of educational interventions suggest that activating interventions may improve back pain outcomes. Expert opinion increasingly regards effective self-management of back pain as important in achieving good outcomes. In this study, an educational intervention designed to activate patients and support effective self-management was evaluated.

Methods. Six to 8 weeks after a primary care visit for back pain, patients were invited to participate in an educational program to improve back pain self-management. Those showing interest by returning a brief questionnaire became eligible for the study. Participants (n = -255) randomly were assigned to either a self-management group intervention or to a usual care control group. The effect of the intervention, relative to usual care, was assessed 3, 6, and 12 months after randomization, controlling for baseline values. The intervention consisted of a four-session group applying problem-solving techniques to back pain self-management, supplemented by educational materials (book and videos) supporting active management of back pain. The groups were led by lay persons trained to implement a fully structured group protocol. The control group received usual care, supplemented by a book on back pain care.

Results. Participants randomly assigned to the self-management groups reported significantly less worry about back pain and expressed more confidence in self-care. Roland Disability Questionnaire Scores were significantly lower among participants in the self-management groups relative to the usual care controls at 6 months ($P = 0.007$), and this difference was sustained at 12 months at borderline significance levels ($P = 0.09$). Among self-management group participants, 48% showed a 50% or greater reduction in Roland Disability Questionnaire Score at 6 months, compared with 33% among the usual care controls.

Conclusions. Self-management groups led by trained lay persons following a structured protocol were more effective than usual care in reducing worries, producing positive attitudes toward self-care, and reducing activity limitations among patients with back pain in primary care.

Recent outcome studies among patients with back pain in primary care have found that back pain is typically recurrent, and that chronic phases of back pain are most common than previously believed.2,3,16,26,29 Recurrent back pain shares features of both acute pain (episodes are time-limited) and chronic pain (diagnosis is often uncertain and pain continues after "normal healing"). Recurrent back pain as well as chronic pain can result in significant activity limitations.26 For these reasons, primary care needs to adequately address the concerns and activity limitations of patients with recurrent and chronic back pain, as well as the diagnostic and pain management needs of patients with acute back pain.

Expert opinion increasingly regards self-management as integral to effective back pain care.5,6,31 Most back pain episodes are managed by self-care.30 There is increasing emphasis on the importance of effective self-management for improving outcomes of chronic illness in general.27 Clark et al 4 and Lorig 8 identified core self-management tasks for chronic illness directly applicable to back pain, which include engaging in health promoting activities (*e.g.,* exercise), minimizing the impacts of illness on daily activities, and monitoring illness and adapting to changes (*e.g.,* managing a flare-up). Unfortunately, health care for back pain (as with other forms of chronic illness) pays inadequate attention to enhancing patient abilities to carry out these self-management tasks.24,25 Rather, primary back pain care visits typically focus on diagnostic assessment, pharmacologic management, and brief advice about palliative care and exercise.19,24

Recently, a conference of leading researchers studying back pain in the primary care setting placed a high priority on research investigating ways of improving back pain self-care.1 They called for research to assess whether "educating and empowering patients to treat their own problems would counteract the negative impact that medicalization of the problem has had on individuals and society."1

For this conference, Turner 20 reviewed randomized controlled trials of educational and behavioral interventions to enhance back pain self-management. After concluding that interventions encouraging active management of back pain have shown success in improving patient outcomes, she recommended further research on incorporating activating interventions in primary care management of back pain. Educational interventions that teach only body mechanics and lifting techniques have not been consistently successful in preventing back pain.22 In contrast, interventions that encourage resumption of normal activities have yielded more promising results among those with back pain.12,20

This article reports the results of a large randomized controlled trial of an intervention to enhance back pain self-management and thereby reduce activity limitations. The intervention involved four two-hour sessions, supplemented by educational materials designed to support self-management. The group leaders were trained lay persons who had experienced problems with back pain themselves, and who were willing and able to lead groups according to a highly structured protocol. The intervention was designed to address specific patient worries about back pain,23 enhance confidence in self-care, and encourage an active problem-solving approach to reduce activity limitations. This article evaluates the effectiveness of this intervention in achieving these objectives over a 1-year follow-up period.

Methods

Setting and Participants. This research was carried out among patients with back pain enrolled in the Group Health Cooperative of Puger Sound (GHC), a health maintenance organization in Western Washington State. The study protocol was reviewed and approved by the human subjects committee of GHC. Patients with back pain aged 25 through 70 were contacted by mail 6 to 8 weeks after a back pain visit to a GHC primary care physician. These patients were identified from diagnoses recorded on automated visit encounter forms indicating that the patient was seen for back pain or strain, a disc disorder, or sciatica. Only patients who had been enrolled in GHC for at least 1 year were contacted to minimize the problem of disenrollment over the follow-up period. Patients who reported that they were being considered for surgery were excluded, as were patients planning to disenroll from GHC.

Patients who had made at least one prior back pain visit and who were interested in learning more about how to care for back pain could volunteer for the study by returning a brief eligibility questionnaire. Patients returning the questionnaire were asked to identify one or more of three initial group meetings that they would be able to attend if asked to participate. Groups began every other Tuesday evening and were held in two different locations.

Enrollment and Randomization. Those returning the eligibility questionnaire were contacted. Eligible patients willing to participate after informed consent completed a 2.5-minute baseline interview by telephone. They were then randomly assigned to the self-management group or the usual care control group.

Outcome Measures. Follow-up telephone interviews were conducted 3, 6, and 12 months after randomization for all participants (including those failing to participate in the self-management groups and those who disenrolled from GHC). The major outcome variables assessed in the baseline and follow-up interviews are discussed in the following sections.

Attitudes Toward Back Pain Self-Care. A five-item Self-Care Orientation Scale developed for this study was administered to assess patient attitudes toward the use of health care and prescription medications for back pain. Items included in this scale were shown to predict future use of health care and prescription pain medications for back pain. Participants indicated on a five-point scale (1 to 5 points for each item) whether they strongly agreed, agreed, were neutral, disagreed, or strongly disagreed with the following statements:

For your back pain problem, prescription pain relievers are necessary to control the pain when it is really bad.
Your back problem requires ongoing attention and advice from a physician.

You have found that things you do on your own are more helpful than medical treatments.
You feel able to care for your back problem on your own.
You would avoid using prescription medicines for back pain, even if it were severe.

The scale score was calculated by averaging the individual items. Several items were reverse coded so that a higher score would indicate more favorable attitudes toward self-care. Subjects also were asked to rate their agreement with the statement: "The next time I have back or leg pain, I will try to manage the problem myself without seeing a health care professional."

Back Pain Worries. At each interview, participants were asked, "How worried are you about your back problem, where 0 is not at all worried and 10 is extremely worried?" In addition to this global worry rating, participants were asked whether they strongly agreed, agreed, were neutral, disagreed, or strongly disagreed with the following statements:

When I have back or leg pain, I worry that it might be caused by a serious disease.
When I have back or leg pain, I worry that I might become disabled for a long time.
When I have back or leg pain, I sometimes worry that the wrong movement could lead to a serious problem.

Pain Intensity and Interference. At each interview, participants were asked to rate their average pain intensity in the preceding 3 months, as well as the extent to which back pain interfered with daily activities in the preceding 3 months.[28] Pain intensity was rated on a scale of 0 (no pain) to 10 (pain as bad as could be). Interference was rated on a scale of 0 (no interference) to 10 (unable to carry on any activities).

Roland Disability Questionnaire Score. A 23-item version of the Roland Disability Questionnaire, which measures severity of impairment and limitation of activities due to back or leg pain, was administered at each interview.[15,16]

Short-Form 36 Mental Health Inventory. The five-item mental health inventory from the Short-Form 36 (SF-36) was administered at each interview.[32]

Study participants were interviewed by trained staff who were blind to whether the interviewee had been randomly assigned to the self-management group or to usual care.

The Intervention. The intervention was modeled after Stanford University's lay person-led self-management classes for arthritis and chronic disease self-management.[9,11] These interventions have been shown to improve patient outcomes and reduce health care use in a series of large randomized controlled trials.[10] The intervention consisted of four 2-hour classes held once a week, with 10 to 15 participants, led by two trained volunteers. The lay leaders, persons with recurrent or chronic back pain, received 2 days of formal training by one of the coauthors (K.L.). There were eight individuals who co-led classes, of which seven were women. No significant problems arose with the lay leaders, and their capabilities in implementing the intervention were generally impressive.

The classes were conducted according to a fully structured protocol. Standardized information was presented, using flip charts, on topics including the "red flags" indicating a serious medical condition, the more common (and less worrisome) sources of back pain, factors contributing to increases or decreases in pain, appropriate pacing of exercise and activity, posture and body mechanics, the role of positive and negative self-talk in managing back pain, handling of back pain flareups, and working with health care providers. The lay leaders, following the intervention protocol, employed action planning or problem-solving techniques that engaged participants in identifying problems and activity limitations related to back pain, setting personal goals to overcome those problems, brainstorming potential steps to achieve their goals, developing a specific plan, and then implementing that plan.

In subsequent sessions, participants reviewed their action plans, evaluated their progress toward goals, and engaged in problem solving around difficulties that had arisen in trying to implement the plan. In practice, action plans often focused on increasing exercise, although each participant was left to identify his or her own personal goals.

Self-care materials developed for this study were provided to study participants at the end of the first class session. These materials included a book [13] and two professionally produced videotapes: a 40-minute videotape on back pain self-management and a 25-minute videotape demonstrating exercises.[14] Intervention subjects who did not attend any of the group sessions were not given these educational materials. The book and videotapes emphasized the safety and importance of resuming normal activities and presented examples of patients effectively managing back pain in their daily lives. Both the book and the videotapes were designed to complement and supplement the information provided in the lay person-led classes. The control group received usual care supplemented by a highly regarded book on back pain care: *Your Aching Back* by Augustus White.[33]

Analysis. Analyses included all randomized respondents for whom follow-up data were available (following the "intent to treat" rule). At each follow-up data collection point (3, 6, and 12 months), the significance of differences in means between self-management group participants and usual care control subjects were assessed by a *z* test, adjusted for the baseline value of the outcome variable and for self-rated health status. The *z* test was estimated using empirical standard error estimates from a general estimating equations (GEE) approach,[7] as implemented by the GENMOD procedure of SAS.[18] The GEE analysis adjusted for the baseline value of the outcome variable and for self-rated health status (to control for a baseline difference in self-rated health between intervention and control groups, as discussed in the Results section). The GEE analysis also took into account within-cluster correlation of intervention subjects assigned to the same group (of nine different groups). Separate tests for 3-, 6-, and 12-month outcomes are reported because a prior hypothesis about

the timing of intervention effects was not available. The significance of differences in percentages were assessed by chi-square tests that were not adjusted for baseline differences.

Results

Enrollment, Randomization, and Follow-Up

Between July and November 1996, invitation letters were sent to 3292 patients making a primary care visit for back pain. Among the 364 eligible individuals who returned the questionnaire while study recruitment was open, 255 (70%) completed the baseline interview and were randomized: 129 to the self-management groups and 126 to usual care. Among those returning the questionnaire who were not randomized, the most common reasons for exclusion were difficulties in identifying a potential group session that the person could attend if subsequently randomized to the self-management groups (n = 52), field work ending before the individual was contacted (n = 40), and refusal to participate (n = 17).

Of the 129 patients assigned to the self-management groups, 3- month follow-ups were completed with 124 (96.1%), 6-month follow-ups with 119 (92.2%), and 12-month follow-ups with 112 (86.8%). Among patients assigned to the usual care control group, 3-month follow-ups were completed with 121 (96.0%), 6-month follow-ups with 109 (86.5%), and 12-month follow-ups with 106 (84.1%).

Characteristics of Participants

The characteristics of study participants generally reflected the composition of the enrollment at GHC in that they were largely well educated, employed full-time or part-time, married, and white (Table 1).[17] The average age of participants was approximately 50 years, and more than half were women. More than half reported persistent back pain (more than 90 days of pain in the preceding 6 months), and moderate to severe interference with activities also was common (*i.e.,* chronic pain Grades III and IV [28]). The pain status of the participants suggested somewhat greater chronicity and severity than is typical for unselected primary care back pain patients 1 to 2 months after a primary care visit.[28] It seems likely that patients with continuing problems were somewhat more likely to participate than patients whose pain had fully resolved. Relatively small percentages reported prior surgery for back pain (10-11%), acceptance of worker's compensation or disability payments (5-6%), or involvement in legal action related to their back problem (5-6%).

	Self-Management Group (n = 129)	Usual Care (n = 126)	*P* Value
Mean age (SD)	49.4 (11.7)	50.3 (10.9)	0.510
Gender (% female)	68.2	56.4	0.051
Education (%)			
≤12 yr	12.4	16.8	0.611
Some college	39.5	37.6	
College graduate	48.1	45.6	
Race/ethnicity (%)			
White	91.4	79.7	0.008
Non-white	8.6	20.3	
Employment (%)			
Working full-time	55.0	59.0	0.706
Working part-time	14.7	10.4	
Homemaker	4.7	5.6	
Retired	14.7	16.0	
Unable to work	8.5	5.6	
Unemployed/laid off	1.6	3.2	
Other	0.8	0.0	
Marital status (%)			
Married or living as married	72.4	67.2	0.115
Never married	5.5	12.8	
Separate/divorced	20.5	16.0	
Widowed	1.6	4.0	
Chronic pain grade (%)			
Grade I	20.9	21.4	0.677
Grade II	19.4	15.9	
Grade III or IV	59.7	62.7	
90 + back pain days in 6 mo (%)	54.3	60.3	0.329
Prior surgery for back pain (%)	11.6	10.3	0.738
Receiving Worker's Compensation or disability payments for back pain	6.2	5.6	0.826
Involved in legal action to obtain compensation for back problem (%)	6.2	4.8	0.625

Table 1. Baseline Characteristics in Individuals Randomly Assigned to the Self-Management Groups and to Usual Care: All Persons Randomized (n = 255)

The characteristics of the intervention and control groups were generally quite similar (see Table 1). Only a few significant differences were observed between the two groups. A few more women and somewhat fewer nonwhites were randomly assigned to the self-management groups. The percentage rating their health status excellent, very good, or good (89.8% among the self-management group and 78.6% among usual care participants) also showed a significant difference between the two groups ([chi]^2 = 5.95; *P* = 0.015). These three variables were screened for an assessment of their relation to the study outcome variables. It was found that only self-rated health status was significantly associated with the outcome measures of interest. In estimating the effect of intervention on outcome variables, self-rated health status and the baseline value of the outcome variable were entered as covariates to control for lack of balance between the intervention and control groups.

Participation in the Self-Management Groups

Among those randomly assigned to the self-management groups, 68% attended three or all four of the sessions, whereas 11% attended none. The "no-shows" were included in the outcome analyses (*i.e.,* intent- to-treat analyses). According to postintervention quality ratings of the groups, they generally were well received by the participants.

Use of the Educational Materials

Among the 120 usual care control subjects who reported receiving the book, 15% read all of it, 32% most of it, and 29% part of it, whereas 17% skimmed the book, and 8% did not read the book at all. Among the 113 self-management group participants who reported receiving the self-care book, 27% read all of it, 42% most of it, and 21% part of it, whereas 7% skimmed the book, and 4% read none of it. In the self-management group, 91% reported receiving the videotapes. Among those individuals, 77% reported watching all of the self-management videotape, whereas 18% did not watch it at all. Regarding the exercise videotape, 62% reported watching all of it, whereas 22% watched none of it.

Attitudes Toward Self-Care

Among the participants in the self-management groups relative to usual care patients, attitudes toward back pain self-management (according to the Self-Care Orientation Scale) were significantly more favorable at 3- and 6-month follow-ups and continued to differ at a borderline significance level at 12 months (Table 2). As shown in Table 3, at 12 months 77% of the self-management participants as compared with 60% of the usual care control subjects agreed with the statement, "The next time I have back or leg pain, I will try to manage the problem without seeing a health professional" ($P = 0.008$). This item was not among the five items included in the Self-Care Orientation Scale, but it measures a similar attitude.

	Baseline	3 Months	6 Months	12 Months
Self-care orientation				
Self-management group	2.70 (0.71)	3.15 (0.80)	3.22 (0.82)	3.24 (0.81)
Usual care	2.70 (0.70)	3.00 (0.74)	2.96 (0.85)	3.04 (0.82)
		$P = 0.047$	$P = 0.032$	$P = 0.10$
Worry rating (0–10)				
Self-management group	5.80 (2.55)	4.00 (2.82)	2.97 (2.65)	2.63 (2.58)
Usual care	6.44 (2.81)	4.62 (3.17)	4.28 (3.15)	3.83 (3.08)
		$P = 0.612$	$P = 0.013$	$P = 0.013$
Average pain intensity				
Self-management group	5.36 (1.99)	3.87 (2.21)	3.37 (0.82)	3.22 (2.03)
Usual care	5.66 (2.06)	4.02 (2.13)	4.07 (0.85)	3.79 (2.35)
		$P = 0.748$	$P = 0.064$	$P = 0.19$
Roland Disability				
Self-management group	9.50 (6.11)	6.56 (5.61)	5.83 (5.89)	5.75 (6.31)
Usual care	9.42 (6.45)	7.40 (6.33)	7.23 (6.51)	6.75 (6.39)
		$P = 0.088$	$P = 0.007$	$P = 0.092$
Interference rating				
Self-management group	5.07 (2.44)	3.24 (2.40)	2.77 (2.45)	2.78 (2.38)
Usual care	5.19 (2.43)	3.55 (2.49)	3.35 (2.59)	3.10 (2.66)
		$P = 0.737$	$P = 0.204$	$P = 0.76$
Mental Health Inventory				
Self-management group	70.3 (18.2)	74.8 (16.4)	75.9 (15.6)	77.8 (16.1)
Usual care	68.6 (19.7)	72.7 (19.7)	76.1 (18.4)	75.8 (16.3)
		$P = 0.631$	$P = 0.990$	$P = 0.828$
No. of subjects				
Self-management group	127	124	119	112
Usual care	124	121	109	106

Note: Significance tests are adjusted for the baseline value of the outcome variable and for self-rated health status.

Table 2. Outcome Measures for Patients in Self-Management Groups vs. Usual Care Controls: Means (Standard Deviations) at Baseline, 3, 6, and 12 Months with All Persons Completing at Least One Follow-Up Interview (n = 251)

	Group	Baseline	3 Months	6 Months	12 Months
When I have back or leg pain, I worry that I might become disabled for a long time.	Self-management group	56.7	30.9	22.9	25.0
	Usual care	62.9	46.7	42.2	42.9
			$P = 0.012$	$P = 0.002$	$P = 0.005$
When I have back or leg pain, I worry that it might be caused by a serious disease.	Self-management group	17.3	7.3	6.8	7.1
	Usual care	20.2	16.8	11.9	18.1
			$P = 0.022$	$P = 0.181$	$P = 0.015$
When I have back or leg pain, I sometimes worry that the wrong movement could lead to a serious problem.	Self-management group	59.1	47.2	45.8	40.2
	Usual care	63.7	55.4	55.6	50.9
			$P = 0.199$	$P = 0.141$	$P = 0.111$
The next time I have back or leg pain, I will try to manage problem without seeing a health care professional.	Self-management group	50.4	69.1	78.6	76.8
	Usual care	46.8	62.0	66.1	60.0
			$P = 0.242$	$P = 0.034$	$P = 0.008$

Table 3. Percent With Specific Worries and Self-Care Attitudes at Baseline, 3, 6, and 12 Months Comparing Persons in the Self-Management Groups With Usual Care Controls

Worries About Back Pain

Self-management group participants and usual care subjects showed comparable reductions in the global worry rating from baseline to 3 months. However, the participants in the self-management groups showed a larger additional reduction in global worry from 3 to 6 months than did the usual care subjects (see Table 2). As a result, the difference in the global worry rating between intervention and control subjects was significant at 6 months. At 12-month follow-up, self-management group participants continued to report significantly

less worry than usual care control subjects (see Table 2). When specific worry items were examined, it was found that significant differences in specific worries were evident at 3-, 6-, and/or 12-month follow-up, depending on the item (see Table 3).

Pain Intensity and Interference With Activities

As shown in Figure 1 and Table 2, there was a highly significant difference in Roland Disability Questionnaire Score at 6 months (P = 0.007). At 6-month follow-up, 47.9% of the self-management group showed a 50% or greater reduction in Roland Disability Questionnaire Score from baseline, whereas 33% of the usual care control subjects showed a 50% or greater reduction in Roland Score (X^2 = 5.2; df = 1; P = 0.02). Self-management group participants continued to show more favorable Roland Disability Questionnaire Scores at 12-month follow-up (see Figure 1 and Table 2), a difference that reached borderline statistical significance (P = 0.092).

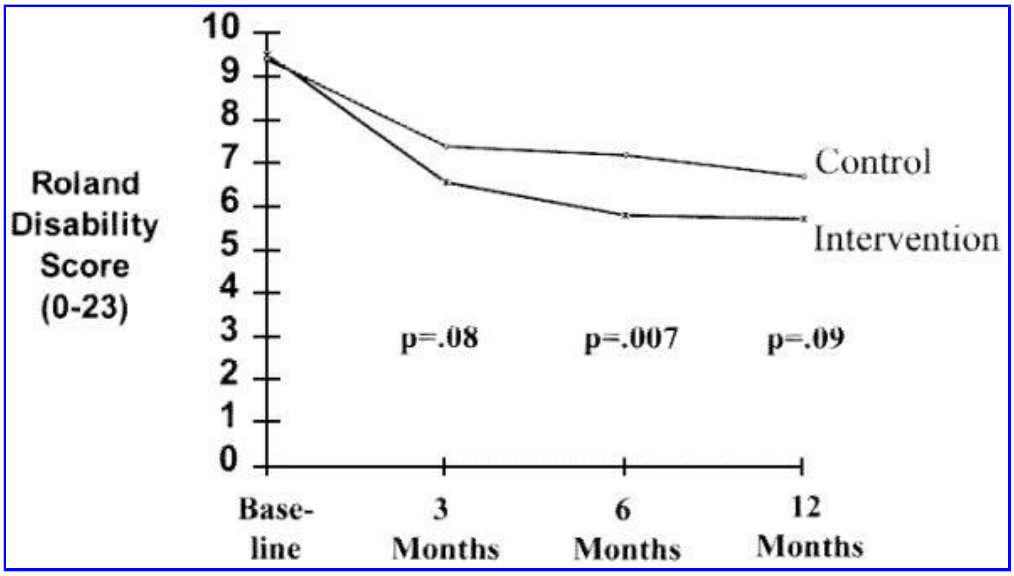

Figure 1. Roland Disability Questionnaire Scale at baseline, and 3, 6, and 12 months. Self-management group participants are compared with usual care control subjects.

Despite the greater reductions in activity limitations among the self-management group, at 6-month follow-up activity limitations were commonly reported by both the intervention and control group patients. The percentages of intervention and control patients reporting specific activity limitations at 6 months were, respectively, as follows: walking more slowly (24% and 37%), not doing usual jobs around the house (14% and 12%), using a handrail to get upstairs (23% and 31%), dressing more slowly (32% and 39%), being able to stand only for short periods of time (33% and 34%), having difficulty getting out of a chair (18% and 30%), walking only short distances (16% and 23%), experiencing disturbed sleep (38% and 42%), avoiding heavy jobs around the house (45% and 46%), staying in bed a lot (2% and 6%), experiencing decreased sexual activity (16% and 18%), doing less housework than usual (26% and 32%), and often expressing concern about health (13% and 18%). These impairments and activity limitations were reported as present and due to back or leg pain on the day of the interview. Clearly, significant activity limitations continued long after the primary care visit for many patients in both the intervention and control groups.

The pain intensity rating did not show a significant effect, although there was a trend favoring the self-management group participants at 6 months (see Table 2). The differences for the 0 to 10 rating of interference with daily activities were in the same direction, but were not significant.

Psychological Distress

Self-management group participants did not show more favorable mental health outcomes than usual care control subjects, as assessed by the Mental Health Inventory of the SF-36.32

Discussion

This initial evaluation of self-management groups produced promising results. Significant effects were observed for enhanced confidence in back pain self-care, reduced worries about back pain, and decreased Roland Disability Questionnaire Score. Both the self-management group participants and the usual care control subjects showed improvement from baseline to 3 months, but the extent of improvement was greater among the self-management group participants than among the usual care subjects. For confidence in self-care, worry, and Roland Disability Questionnaire Score, self-management group participants continued to show more favorable outcomes at 12 months than the usual care control subjects.

The self-management group intervention did not produce a large or a lasting effect on pain intensity ratings. A difference of borderline significance was observed at 6 months, favoring the self-management groups, but this difference was not sustained at 12-month follow-up. The lack of a large or enduring effect on pain intensity ratings is not surprising. The intervention was not designed or intended to reduce pain intensity. Rather, the intervention was intended to reduce patient worries, enhance confidence in self-care, and encourage

resumption of normal activities. Although modest reductions in pain can accompany reduced worry and enhanced activity levels, this was not a primary objective of the intervention.

The use of trained lay persons with a history of back problems was an innovative feature of this intervention trial. Lay person-led self-management group sessions have been found to improve outcomes for arthritis and other chronic conditions as well.[10] Within the context of this experimental evaluation of self-management groups, the use of lay leaders has several implications. Reductions in patient worries and more favorable attitudes toward self-care cannot be explained by reassurance from a professional expert providing patient-specific diagnostic information. Rather, these changes can be explained by the didactic information provided in the groups, the lay leaders who act as role models, the content of the written and videotaped educational materials, the interactions with other back pain patients in the groups, or some combination of these elements.

The pattern of results observed in this study does not seem explained by attributing the effect of the intervention to nonspecific (placebo) effects of the treatment. Nonspecific effects of treatment may result from attention; interest; concern; provider or patient expectations; the reputation, expense, or impressiveness of the intervention; or characteristics of the setting in which the treatment is provided.[21] It is expected that a nonspecific treatment effect would be greatest initially, and then dissipate with time, but this pattern was not observed in this study. Furthermore, no lasting effects on pain intensity ratings were observed, but enduring effects on patient worries, confidence in self-care, and activity limitations were seen. If nonspecific treatment effects of attention or expectations were responsible for the observed differences, an effect on pain intensity ratings might be expected.

Although this initial randomized controlled trial yielded promising results, there was room for improvement. Among the self-management group participants, the mean Roland Disability Questionnaire score at 12-month follow-up was 5.8, indicating that many participants continued to experience at least moderate levels of activity limitation because of back pain lasting more than 1 year after their primary care visit. A critical question for further research is whether the beneficial effects observed in this study can be increased in magnitude by refining the content and delivery of the intervention.

Because it was impossible to blind the participants to whether they were receiving the self-management or the less-intensive control intervention (usual care plus book), it is possible that the positive results observed reflect reporting biases. Long-term use of health care services and medications are now being assessed using the automated health care information systems of the health plan where the research was conducted. When these data become available, 24-month data on health care and medicine use will be reported. These long-term data will allow researchers to determine whether beneficial effects of the intervention on worries, confidence in self-care, and activity limitations are accompanied by significant reductions in health care use.

A limitation of this study is that the patient population was highly educated and predominately white. Generalizability of the results to other populations needs to be assessed. Other researchers (Morris Weinberger of Indiana University and Kate Lorig of Stanford University) are conducting large randomized controlled trials of interventions developed from the intervention methods and materials used in this study. These studies will enroll large numbers of minorities, and also will include patient populations with lower levels of education. These studies will shed light on the generalizability of current study results to more diverse populations.

A second limitation is that this study recruited volunteers. From those who received letters inviting participation, about 13% indicated interest by returning the eligibility questionnaire. This level of response to passive recruitment of patients for a group intervention is typical. In future research, the authors hope to determine whether the effectiveness of the intervention is maintained when a larger proportion of consecutive back pain patients is recruited through more active recruitment in the primary care setting. The results of this study suggest that the self-management groups, offering a low cost and safe intervention, can benefit patients motivated to participate when patients are recruited via a mailed invitation.

This research suggests the importance of learning more about how health care workers can effectively address and ameliorate the common worries of back pain patients. The major worries identified in this study were these: 1) concern about serious disease; 2) fear that severe pain indicates a serious medical condition; 3) anxiety about long-term disability (or chronic pain); and 4) worry that movement or activity will exacerbate the problem.

These worries are far from rare and should be actively identified and addressed routinely in primary care back pain visits. The data from this study suggest that these worries often continue long after a patient sees a doctor if they are not effectively addressed. Results of the current study show that brief educational interventions, even when provided by a nonprofessional, can significantly reduce these worries. It seems likely that the educational techniques used to good effect in the lay person led groups could also be employed by primary care physicians to address and reduce patient worries about back pain.

In summary, the lay person-led self-management groups yielded promising benefits in terms of reduced patient worries, enhanced confidence in self-care, and decreased activity limitations. The results of this study point to avenues for enhancing self-management among patients with back pain in primary care. Growing evidence now supports the effectiveness of interventions that encourage resumption of normal activities for improving back pain outcomes.[12,20]

This initial study provides some guidance for future efforts to find more effective ways of reducing activity limitations among patients with back pain. The findings suggest that engaging patients in problem solving to overcome ongoing activity limitations, enhancing patient

confidence in self-care, and addressing specific patient worries may be important components. The group technique evaluated in this research is only one possible means of engaging patients in back pain self-management.27 Given the growing evidence that interventions encouraging resumption of normal activities benefit patients with back pain in primary care,12,20 further research is needed to develop and test ways of delivering such interventions in health care settings. Such research is needed to achieve a more effective and cost effective balance between medical care and self-management of back pain in the primary care setting.

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