

PILOT STUDY

A Model for Integrative Transformation: A Back Pain Group Appointment Program

Keith S. Rayburn, MD

ABSTRACT

A back pain treatment program was developed for the outpatient, primary care clinic setting. In this pilot study, measured functional status scores improved in a cohort of patients enrolled in the program. The program consists of a series of 5 monthly group appointments and follows a sequential curriculum involving multiple therapeutic modalities. These modalities include exercise, social

interaction, motivation/raison d'être, holistic counselling, music, and behavioral modelling. The program provides a forum for the discussion and implementation of complementary and alternative approaches, alongside mainstream approaches, and represents a model of integrative medical practice. (*Altern Ther Health Med.* [E-pub ahead of print.]

Keith S. Rayburn, MD, practices family medicine at Santa Clara County Health and Hospital System in Gilroy, California.

Corresponding author: Keith S. Rayburn, MD
E-mail address: keithrayburn@gmail.com

As physicians in mainstream practice, we may wish to incorporate complementary/alternative modalities into our treatment regimens, yet we often encounter difficulties when trying to integrate them. The realities of seeing patients in the usual way do not lend themselves to an ideal form of integrative medicine. Financial survival in a “fee-for-service” setting mandates that a large number of patients be seen per day. The tools we have at our disposal that allow us to function in this setting consist primarily of powerful mainstream drugs and procedures, which address patients’ medical issues—if not adequately nor optimally, then at least long enough to finish the appointment and get on with the next patient.

Although eventually replacing “fee-for-service”¹ with “fee-for-outcome”² is theoretically an effective way to improve the situation, in practice this is far from being implemented.

Even if were it to become implemented, it is far from clear which parameters should determine and define *good outcomes* and how to appropriately incentivize them financially. In the meantime, what can we do to begin to practice integrative medicine in the current health care climate in a way that does not overtax our own physical, financial, and emotional health and well-being?³

Inspired by the emerging interest in developing the Medical Home Model where I work in the Santa Clara County Health and Hospital System (Santa Clara, CA, USA), clinical administrative leaders called on physicians to consider running group appointments for patients with chronic disease conditions, as a way to simultaneously incorporate more patient education and deliver efficient health care. In response, I developed a series of group appointments to address chronic back pain. This was something I had hoped to do for many years, as a solution to the frustration experienced when, during a 15-minute appointment slot, physicians try to squeeze in adequate treatment advice for back pain.

Typically, patients are being seen for other medical problems such as diabetes or hypertension (among many conditions), and most of the appointment time is well used dealing with those issues: going over results, changing medications, etc. The comment, “Oh, by the way, Doc, my back is killing me,” does not usually come until the appointment is essentially over and the physician is on the

way out the door. Of course, we do not want to abandon the patient with that dangling comment as we exit the exam room. Instead, we go back in and offer the patient some pain medication and advice, along with a handout about back exercise. Then we walk out.

The problem is that this does not do justice to the condition of chronic back pain, which is why I agreed to develop the Back Pain Group Appointment Series. In this program, we schedule a series of 5 monthly group appointments for approximately 10 patients—the same number I see in individual appointments during a typical half day in clinic. The appointments are billed for each patient in the normal fee-for-service way. The difference here is that we have adequate time to focus on their back pain in an optimal manner.

In this paper, I report an outline of the Back Pain Group Appointment Series program that we have put into practice at our clinic, along with functional outcome measurements and feedback from participants. This report does not represent a definitive trial; however, the positive results suggest that such a trial is warranted and that this method of health care delivery is likely to prove invaluable—not only for back pain, but for other chronic medical conditions as well.

Furthermore, this model appears to be an excellent vehicle for the delivery of integrative health care techniques that can be used in any mainstream clinical practice, today—without waiting for health care reform measures that may be years in coming.

CURRICULUM

The Back Pain Group Appointment Series consists of 5 monthly sessions. All the sessions are structured similarly, but new concepts are introduced in each session, with each concept setting the stage for the next. There are several important elements generally involved in this program as a therapeutic intervention:

1. Exercise.
2. Social interaction.
3. Motivation/raison d'être.
4. Holistic counselling.
5. Music.
6. Behavioral modelling.

Exercise

Two exercise routines are used, called level 1 and level 2. Both consist of basic, easy stretches and yoga-like positions that are well tolerated by the vast majority of patients. Level 2 differs only in having several moderately difficult exercises. The physician selects patients for either level 1 or 2 based on each patient's condition. Videos of these exercises are made available to the patients to help them remember the exercise routines.

Social Interaction

At each session, patients introduce themselves and report their progress during the recent month. During presentations, patients ask questions and provide comments. Conversations naturally arise between patients and between patients and providers. In our experience, this facilitates patients' comfort and cooperation in all session activities.

Motivation/Raison D'être

Patient motivation is central to this program as intervention. It is likely to be the main factor in determining positive patient outcomes for the long term. Each of the components contributes to the motivational aspect of this program, but especially important contributors are the relaxed atmosphere, the social interaction, the music, the holistic coaching, and the concept *raison d'être*. In the third session of the series, the physician briefly introduces this concept using and defining the French word *raison d'être*, meaning "reason for existence," to underscore the underlying intent of this program's intervention: to allow patients to begin—or begin again—to pursue their own, individual interests by improving their health. In the fourth session, the physician expands on this concept in a more formal presentation.

Holistic Coaching

The registered nurse presents a series of lectures covering multiple lifestyle choices, including nutrition, general exercise, water, sunshine, temperance/moderation, air, rest, positive attitude, laughter as medicine, hydrotherapy, massage, and aerobic exercise.

Music

Gentle instrumental music is played throughout the entire session, turning volume down only occasionally as necessary to hear presentations by the providers. There is support in the literature for the therapeutic potential of music. In our experience, music plays a key role in calming anxiety, facilitating exercises that are difficult for some patients. Focusing on the music while exercising also helps to pace transitions between different body positions.^{4,5}

Behavioral Modelling

The providers themselves agree with the program's philosophy and fully endorse it. They are physically fit but not flamboyant; the goal here is not to impress patients with their instructors' prowess, but rather instill the confidence that patients can improve their own fitness. Equally important is that the providers genuinely get along well with each other. These may not be job descriptions that one normally finds written down; however, they are essential for establishing credibility and for making patients feel comfortable in the sessions.

Below is an outline of the monthly session content:

Session 1:

Intake, vitals, pain scale
Warm-up exercises
Welcome/introductions
Overview of the series
Presentation/lecture: Back pain—
causes, anatomy, symptoms,
treatments
Back exercise routine (level 1 or 2)
Holistic coaching
Short walk
Repeat exercise routine
Pain scale

Session 2:

Intake, vitals, pain scale
Warm-up exercises
Welcome/patients report their
progress
Pain diagram: Patients color a body
chart describing their pain
Back exercise routine (level 1 or 2)
Holistic coaching
Short walk
Brief exercises for hands, knees, and
feet
Pain scale

Session 3:

Intake, vitals, pain scale
Warm-up exercises
Welcome/patients report their
progress
Raison d'être concept introduction (to be
continued in next session)
Back exercise routine (level 1 or 2)
Holistic coaching
Short walk
Brief exercise for hands
Pain scale

Session 4:

Intake, vitals, pain scale
Warm-up exercises
Welcome/patients report their progress
Presentation/lecture: Raison d'être—examples: brain
anatomy, motivation
Back exercise routine (level 1 or 2)
Holistic coaching
Brief exercise for knees
Pain scale

Session 5:

Intake, vitals, pain scale
Warm-up exercises
Welcome/patients report their progress
Back exercise routine (level 1 or 2)
Holistic coaching
Brief exercise for feet
Graduation ceremony
Pain scale

LOGISTICS

Here is an outline of personnel, resources, and administrative functions required for the program. For personnel, hours required per session are given.

Personnel

1. Physician (4 hours): Welcomes the patients, leads introductions, answers questions, gives presentations, leads exercises, documents in medical record.
2. Registered nurse (4 hours): Takes vitals, records pain levels, assists with exercises, gives holistic coaching presentations, documents in medical record.
3. Medical assistant (2 hours): Assists physician and nurse as needed, provides translation for Spanish groups.
4. Maintenance worker (2 hours): Sets up and tears down room with tables, chairs, audio-visual equipment, yoga mats, other equipment as needed.

Room

The room is well-lit and ventilated, with windows for natural lighting, and it measures 30 feet by 60 feet at a minimum.

Equipment

1. Fifteen high-quality yoga mats.
2. Six sturdy tables (used for exercises).
3. Fifteen chairs.
4. Audio-visual equipment, including laptop computer with broadband Internet access, projector and screen, good quality speakers.

Food/Water

1. A bottle of water for each patient for every session.
2. Snacks for all patients on the last session, graduation day.

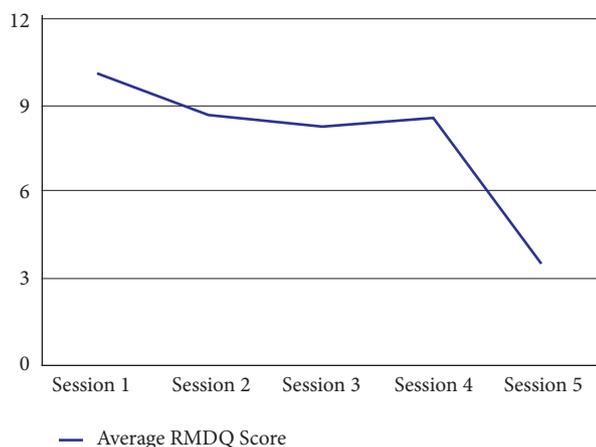
Office Supplies

Supplies include paper, pens, colored pencils, clipboards, etc.

Billing

Billing includes adequate documentation to support a 99213 level of service. An example of chart documentation for one patient is given in Appendix A.

Figure 1. Back Program Effect on Disability



Abbreviation: RMDQ, Roland-Morris disability questionnaire.

CLINICAL OUTCOMES

Roland-Morris Disability Questionnaire

The Roland-Morris disability questionnaire (RMDQ) consists of 24 questions regarding patients' difficulties with daily activities, such as getting out of a chair, climbing stairs, etc. A low score on this questionnaire indicates good function, whereas a high score indicates significant disability.⁶

We administered the questionnaire to all participants at each session in the series to assess changes in functional status in the course of the series. A total of 98 patients participated in the series. Some attended all 5 sessions, and others missed some of the sessions or started later in the series. The results—displayed in Figure 1—are averages of the raw scores, according to the number of sessions each patient attended. Although this data should not be regarded as definitive (without placebo control, blinding, or detailed statistical analysis), the positive results suggest that the intervention is potentially effective in improving patients' function in a dose-dependent fashion. Further in-depth study would therefore be warranted, using randomization, placebo control to the degree possible, more parameters, and appropriate statistical analyses.

Patient Comments

At the end of each series, we ask patients to fill out evaluations. The responses are invariably positive. Here are some examples of written comments:

1. "Beneficial, very beneficial."
2. "Your enthusiasm is energizing."
3. "More power to [the doctor and nurse] for a job well done. I am grateful and a big thank you to both of them. Very good communication and very friendly. More [programs] like this will be appreciated very much."

4. "I like that the doctor is taking an active position in encouraging his patients to make life changes. One on one interaction and information."
5. "I am very satisfied with this class. I feel better. I learned how to diminish my pain. My depression improved and now I do my work better. I thank [the doctor] and the helpers. Also, I improved my eating. I feel happy."
6. "Personally, [the program] helped a lot with my pain in the bones of my knees, hands, and back. I want to continue coming to [the next series]. It helps us a lot with our health. Thank you, Doctor and assistants."
7. "I only want to say thanks for helping us, because the exercises helped and everything else helped as well. I will recommend [the program] to my friends. Thanks a lot and God bless you. It was a pleasure to know you."

Wishlist of Parameters to Study

In future study, several parameters in addition to the RMDQ score might be hypothesized to be affected in the short term. Some of these might include pain scales, depression scales such as the PHQ-9, and blood pressure.

Ideally, a global measure of patients' overall health status could be monitored through time for evaluation of longer-term effects. Such a Health Risk Score could incorporate the parameters used in extant risk scores such as the Charlson Comorbidity Index,⁷ the Elixhauser algorithm, the Comorbidity Polypharmacy Score,^{8,9} and others, but further parameters could also be added, such as quantified health care use and ongoing laboratory and diagnostic reports. In time, a Health Risk Status Curve could be used to measure the effectiveness of this program or other clinical interventions.

Short of this, certain key clinical measures of chronic disease status could be monitored (such as hemoglobin A_{1c} for diabetes, serial echocardiograms for congestive heart failure, etc) along with numbers of hospital/emergency room (ER) visits, to determine the intervention's effect on comorbidities.¹⁰ Along with improved clinical outcomes, health care institutions will be interested in the potential for reduced costs associated with decreased need for ER visits and hospitalizations.

SUMMARY

The Back Pain Group Appointment Series program at our institution was developed to address chronic back pain holistically, using exercise, social interaction, motivation/raison d'être, music, lifestyle coaching, and behavioral modelling, while de-emphasizing medications and surgery. A measure of physical daily function, the RMDQ, was monitored throughout the 5-month series for a group of patients and showed progressive improvement. These results are consistent with other published reports showing improved function with structured exercise interventions.¹¹

Motivation is considered to be a central component of the program. Rather than focusing only on improving health,

patients are encouraged to visualize achieving their own personal goals, embodied in the French phrase *raison d'être*. This motivational concept is outlined as follows:

Methods -----> Health ----> Raison d'être

That is, with the goal in mind of being able to live fully, each patient uses the methods taught in the Back Program to improve health and thereby realizes their own *raison d'être*. Our experience with patients indicates that there is significant interest in this concept, and acceptance of the program as a treatment regimen has been excellent.

The program as clinical intervention consists of multiple components. Demonstration of which of the components or combination of components are responsible for any benefit achieved would be the subject of future study. This report does not represent definitive evidence of efficacy, but the positive results do suggest benefit, and future study is warranted.

The program provides a pragmatic method for the incorporation of integrative medicine techniques into mainstream practice. Some of the program components, such as music therapy and holistic coaching, would be considered complementary and alternative medical treatments, yet they fit in seamlessly with the program treatment regimen and are likely key factors in its efficacy. In particular, the holistic coaching component is an excellent forum for the discussion of alternative medical approaches, both from the patient's and the provider's perspectives. Our institution has successfully billed for the program, reimbursed in the same way as a regular clinic visit.

In addition to benefiting patient outcomes, the program improves provider job satisfaction, in our experience allowing for a more optimal approach to treatment of back pain and for rewarding interactions with patients.

ACKNOWLEDGEMENTS

Many people supported and helped with the development and implementation of the back program—too many to list individually here. However, chief among them, I want to thank Deena Vasutin, RN, who was my main collaborator in the development of the project from the beginning. I also want to thank Valley Medical Center administrators for their support, especially Gilroy Medical Clinic's Denise Ramos, RN, clinic manager; and Nubia Medina, MD, medical director. Thanks to Judith Mills, AHIP, MLIS, NCMA, medical librarian at Valley Medical Center, for assistance with the references for this article. In addition, I want to thank the many patients who have attended our sessions and given their invaluable recommendations and support.

APPENDIX A: Sample Chart Documentation

Procedure done by Keith Rayburn, MD:

This 56-y-old male is here today for low back pain group.

HPI:

Chronic low back pain, treating with exercises regularly at home, OTC meds occasionally PRN pain to assist with exercise and function. Experiencing no side effects from these PRN medications. Reported good adherence to assigned treatment regimen during the past month. Today, participated in all activities, doing the floor version of exercise routine level 1.

Patient Active Problem List

Diagnosis:

- Knee pain.
- Chronic low back pain.
- Folliculitis.
- Vitamin D deficiency.

Allergies:

No known allergies.

Medical History:

The past medical history was reviewed, no changes.

ROS:

Constitutional: No saddle anesthesia, incontinence, or focal weakness. See HPI for further ROS.

Physical Exam:

BP, 128/83 mm Hg | Pulse, 74 | Temp (Src), 36.8°C (98.3°F) (oral) | Respiratory, 17 | Height, 1.651 m (5' 5") | Weight, 78.382 kg (172 lb, 12.8 oz) | BMI, 28.76 kg/m² | SpO₂, 100%
General: Alert and oriented, no apparent distress.

Neuro: Normal gait, moving all extremities.

Psych: Normal affect.

Assessments and Plans:

Low back pain: Patient participated in group discussion, learned standard back exercise regimen, and was assisted with personalizing the regimen to suit individual needs, avoiding any positions causing pain. The regimen was practiced during the appointment. Gentle aerobic exercises and healthy diet were discussed.

Follow-up: As needed or as scheduled previously. He was educated about the diagnosis and treatment plan. Medications were reconciled and he was given a summary of the visit.

Abbreviations: HPI, history of present illness; OTC, over-the-counter; PRN, as needed; ROS, review of symptoms; BP, blood pressure; BMI, body mass index; SpO₂, blood oxygen level.

REFERENCES

1. Berenson RA. US approaches to physician payment: The deconstruction of primary care. *J Gen Intern Med.* 2010;25(6):813-618.
2. Chee T. Current state of value-based purchasing programs. *Circulation.* 2016;133(22):2197-2205.
3. Zirui S. Accountable care organizations in the U.S. health care system. *Clin Outcomes Manag.* 2014; 21(8):364-371.
4. Steckler MA. The effects of music on healing. *J Long Term Home Health Care.* 1998;17(1):42-48.
5. Huang AJ, Phillips S, Schembri M, Vittinghoff E, Grady D. device-guided slow-paced respiration for menopausal hot flashes: A randomized controlled trial. *Obstetrics Gynecology.* 2015;125(5):1130-1138.
6. Roland MO, Morris RW. A study of the natural history of back pain. Part 1: Development of a reliable and sensitive measure of disability in low back pain. *Spine.* 1983;8:141-144.
7. Austin SR. Why summary comorbidity measures such as the Charlson Comorbidity Index and Elixhauser Score. *Work Med Care.* 2015;53(9):e65-e72.
8. Moltó A. Comorbidity indices. *Clin Exp Rheumatol.* 2014;32(5 Suppl 85):S131-S134.
9. Stawicki SP. Comorbidity polypharmacy score and its clinical utility: A pragmatic practitioner's perspective. *J Emerg Trauma Shock.* 2015;8(4):224-231.
10. Guy D. Do patient-centered medical homes reduce emergency department visits? *HHSR: Health Serv Res.* 2015;50(2):418-438.
11. Pahor M. Effect of structured physical activity on prevention of major mobility disability in older adults: The LIFE Study randomized clinical trial. *JAMA.* 2015;311(23):2387-2396.