Preparing for Pain Management: A Pilot Study to Enhance Engagement

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Abstract: A significant proportion of individuals fail to engage in cognitive-behavioral treatments for pain. The aim of this pilot study was to develop and evaluate a Preparation for Pain Management Intervention administered before community-based therapy (CBT) pain management workshops. Participants (N = 78) were randomly assigned to a treatment group receiving a 2-session intervention including assessment and feedback based on the Preparation for Pain Management Profile (PPMP) or to a control group receiving assessment (treatment as usual) and an attention placebo interview in place of the feedback session. The interviews were conducted with both groups before patients were offered participation in pain management workshops. Results demonstrate that participants in the treatment group were significantly more likely to attend workshops than were participants in the control group (P < .01).

Perspective: This paper describes a randomized controlled trial assessing a brief motivational intervention aimed at increasing engagement in community-based pain management workshops. © 2004 by the American Pain Society

Key words: Motivation, chronic pain, brief intervention

Although cognitive-behavioral therapy (CBT) has been shown to be effective in managing chronic pain conditions, low rates of engagement in treatment, nonadherence to treatment recommendations, attrition from treatment, and relapse rates continue to pose significant problems for practitioners. These issues are increasingly coming into focus in the CBT research literature because they limit the suitability (and cost-effectiveness) of these types of interventions for a significant subset of individuals with chronic pain.

An individual’s level of motivation to engage in and maintain treatment recommendations has recently been identified as a factor that may significantly contribute to rates of engagement in treatment programs for patients who have chronic pain. Kerns et al have suggested that the stages of change concept from the trans-theoretical model may have relevance for understanding processes underlying the adoption of a self-management approach to chronic pain, and this has culminated in the development of the Pain Stages of Change model and the Pain Stages of Change Questionnaire (PSOCQ).

The Pain Stages of Change model proposes that individuals vary in their readiness to adopt a self-management approach to pain and that individuals may be categorized on the basis of their beliefs about their pain into one of 4 stages of readiness to change. These stages are Pre-contemplation (not considering any change in behavior), Contemplation (serious consideration of change sometime in the future), Action (concrete activities that will lead to the desired change), and Maintenance (active efforts to sustain the changes made).

The model also proposes that an individual’s current stage may determine the most effective therapeutic approach. For example, individuals in the Pre-contemplation or Contemplation stages may benefit from strategies such as cognitive restructuring and reconceptualization of the pain as being manageable, whereas individuals in the “higher” stages of change would be more likely to benefit from behavioral techniques such as pacing activities, relaxation strategies, and exercise, which assume readiness for active involvement and responsibility of the individual in the rehabilitation process.

Several other groups of investigators have provided support for the relevance of the Pain Stages of Change model in improving our understanding of processes of engagement, adherence, and change during self-management treatments for chronic pain. In extending the model further, Jensen and Kerns and Rosenberg asserted that “stage-matched” interventions and the use of client-centered techniques such as Motivational Interviewing and brief motivational interventions may assist patients to move through the stages of change toward action and maintenance, thereby enhancing engagement in treatment, reducing...
rates of drop out, and assisting in maintenance of treatment gains.

Brief motivational interventions are currently being successfully used in a number of other health care settings, including diabetes management, exercise adherence, mammography screening, and weight loss. These types of interventions are typically more structured than "pure" Motivational Interviewing and generally incorporate the 6 effective elements identified by Miller and Sanchez\(^2\) in the acronym FRAMES. These are feedback, responsibility (of the individual to make decisions regarding treatment rather than the practitioner), advice, menu of (treatment) options, empathy, and supporting self-efficacy. In brief motivational interventions, feedback on the patients’ current health status is given after a comprehensive structured assessment. Test scores and results of investigations and examinations are presented with an explanation and information regarding the likely health outcome of engaging or not engaging in a particular behavior. The aim of providing feedback is to increase the perceived discrepancy between where an individual wants to be regarding a particular self-management behavior and where that individual actually is in terms of engaging in the behavior.

It was hypothesized in the current study that a feedback profile of a number of dimensions of self-management could be developed for patients with chronic pain and that this profile could form the framework for a brief motivational intervention incorporating the FRAMES elements described above. Because recent research\(^8,9\) has demonstrated that patients may be in different stages of change for different self-management activities, it is argued that this type of clinical tool may be more helpful in the context of providing specific feedback than a psychometric assessment. Test scores and results of investigations and examinations are presented with an explanation and information regarding the likely health outcome of engaging or not engaging in a particular behavior. The aim of providing feedback is to increase the perceived discrepancy between where an individual wants to be regarding a particular self-management behavior and where that individual actually is in terms of engaging in the behavior.

In addition, it is thought that beliefs about self-management and actual behavior (engagement in specific self-management activities) may not always correspond; for example, a patient may believe that exercise would be helpful in managing pain but does not currently actually use exercise as a self-management behavior and conversely a patient may be engaging in exercises to manage pain because of being instructed to do so but may not believe it is helpful and is therefore less likely to maintain that self-management behavior. Both belief and behavior are therefore important dimensions of exploring self-management status.

In addition, an understanding of why an individual is a particular stage of readiness to change for each self-management activity is vital to enhancing movement through the stages. Bandura\(^1\) argues that a number of determinants may form the basis of inaction, including risk perception, efficacy beliefs, and outcome expectations; therefore, it was thought to be important to explore and profile both the value the individual places on each self-management activity and the confidence in actually engaging in that activity.

To date, there are no published studies that attempt to demonstrate or refute the hypothesis that brief motivational interventions can increase engagement in a self-management approach to chronic pain, and clearly there is a need for systematic empiric research in this area. This article describes the development of the Preparation for Pain Management Profile (PPMP) (previously referred to as the RASMAP-Q\(^8\)), which explores readiness to adopt a self-management approach to pain over 5 self-management activities. The information compiled on the profile is used as the feedback component of the Preparation for Pain Management Intervention (PPMI) offered before pain management workshops.

This randomized controlled trial is described as a pilot study because the aims were to determine (1) the effectiveness of the PPMP in increasing engagement in pain management workshops offered in the community and (2) any further refinements required for the structure or administration of the intervention before use with larger samples.

Material and Methods

Participants

The participants were patients who were being treated for chronic pain by practitioners in the community (eg, general practitioners, physiotherapists, chiropractors, occupational therapists) because there was no multidisciplinary pain clinic available in far north Queensland in Australia. Participants were recruited by means of media advertisements. This strategy was used to avoid possible variations in referral patterns and related motivational effects from medical and allied health practitioners. Subsequent to screening for eligibility criteria (more than 18 years old, pain duration greater than 3 months, adequate literacy to complete assessment measures, no further surgery planned in the foreseeable future, and not actively psychotic or suicidal), 78 participants commenced the study. The pretreatment demographic and pain-related characteristics of participants is outlined in Table 1. As illustrated, litigation was the only statistically significant pretreatment characteristic, with the control group having significantly more participants litigating in relation to their pain than the treatment group.

Measures

The preintervention questionnaire comprised demographics and the PPMP.

The PPMP has three functions. First, it serves a multidimensional descriptive function in that it describes readiness to change across 5 self-management activities: exercise, activity pacing, relaxation techniques, cognitive techniques, and medication use. It is important to note that the use of medication, particularly opioids, to manage chronic pain is a contentious subject and there is much debate regarding the suitability of this type of treatment.\(^9\) It is, however, generally agreed that opioid medication should be taken only as prescribed, on a time-contingent rather than a pain-contingent basis, and that patients should be closely monitored for signs
Preparation for Pain Management

of abuse/misuse of this type of medication. For the purposes of this research, medication use, including opioids and analgesics, was considered problematic if (1) it was taken in isolation, that is, without the use of any other self-management strategies, (2) it was taken on a pain-contingent basis, or (3) it was taken in excess of the prescribed dose.

Second, the PPMP has an explanatory function in that it provides information that explains why a patient may be more or less ready to change for each self-management activity, and third, it provides a structured framework for provision of feedback by use of a motivational interviewing style.

It is important to note that the PPMP is not intended for use as psychometric measure or as a replacement for psychometric assessment; it is simply a clinical tool that provides the framework for a brief intervention. The responses on the PPMP provide the clinician with a profile of the client’s current self-management status, which can be used in the feedback session and form the framework for the brief intervention

Structure of the PPMP

The profile is designed to explore the following 4 dimensions of readiness to adopt a self-management approach to pain.

The first dimension is beliefs about each self-management activity. In the context of the PPMP, beliefs relate specifically to the helpfulness of a particular self-management activity to manage an individual’s chronic pain rather than about the pain itself. Beliefs are assessed on the PPMP by means of a staging algorithm consisting of 5 statements, with 1 statement loosely representing each stage of readiness to change. The items on the algorithm were based on stage of change theory, clinical observation and participant statements, and information gathered in our related research. Pre-contemplation items are characterized by a belief that the activity would not be helpful to manage pain. Contemplation items reflect an uncertainty whether the activity may be helpful to manage pain. Preparation items endorse the belief that the activity would be helpful to manage pain. Action items indicate participation in the specific activity to self-manage pain and a belief that this activity is starting to be helpful. Maintenance items reflect a belief that the self-management activity is already an important part of the self-management regimen and has now become a part of lifestyle (or way of life).

Behavior (actual level of engagement in the activity) is the second dimension. The frequency with which the self-management activities are being completed is explored. In addition, information regarding the period of time the individual has been actively pursing each self-management activity is also recorded. This information helps distinguish between the Action and Maintenance stages of the Transtheoretical model. Maintenance is defined by the length of time an individual has been completing the self-management activity. For example, Pre-contemplation behavior would indicate that the individual never uses the activity. Contemplation would indicate that the individual rarely uses the it. Preparation should reflect a clear plan to start the self-management activity in the next 4 weeks. The Action stage would indicate use of the activity regularly for less than 6 months and Maintenance should reflect its use for the previous 6 months or more.

The degree of importance (value expectancy) the patient places on the activity in terms of its usefulness in helping to manage pain is the third dimension on the profile. The importance section comprises a numeric rating where a score of 0 = not at all important and 10 = extremely important. Individuals are required to indicate by circling the number that best represents how important a particular activity is to help manage the pain.

The level of confidence the individual has with regard to being able to engage in and maintain a particular self-management activity (efficacy expectancy) is the fourth dimension on the profile. As mentioned previously, self-efficacy is defined as the expectation or belief that one can execute a particular behavior to reach a desired goal. According to social learning theory, individuals’ efficacy beliefs (confidence) will influence their adjustment to cope with a major life stressor such as chronic pain.

As with the “Importance” section, the “Confidence” section comprises a numeric rating where a score of 0 = not at all confident and 10 = extremely confident that they can use the SMA to manage their pain. “Importance” and “Confidence” ratings, can provide important information to the practitioner regarding the reasons why an individual may be in a particular stage of change,
which is helpful in terms of treatment planning. In addition, discussion about importance and confidence ratings with a Motivational Interviewing style can also help to elicit change-talk, thereby directing the patient toward change.

Procedure

Ethics approval for the study was granted by the University Ethics Review Committee and the Cairns Base Hospital Ethics Committee. All participants had the nature of the interviews and workshops explained to them in general terms and those who wished to proceed provided signed consent before the first interview.

Participants were randomly assigned to either the intervention or control group by use of a computer-generated random numbers table (SPSS, version 10 for MacIntosh, Chicago, Ill). Each participant completed the PPMP described earlier. Subsequent to completing the profile, participants were interviewed individually by one of two interviewers, both of whom were registered practicing psychologists trained in Motivational Interviewing techniques. Each interviewer completed half the control group interviews and half the treatment group interviews.

The treatment group received a brief (2-session) intervention comprising a semistructured assessment interview and a feedback interview based on the PPMP. Both interviews were delivered in a style consistent with the philosophy and principles of Motivational Interviewing. The control group received a standard pain assessment (treatment as usual) and an attention placebo interview in place of the feedback interview. Subsequent to the second interview, all participants in both groups were invited to attend pain management group workshops.

**Intervention assessment interview.** The semistructured assessment interview took approximately 1 to 1.5 hours to complete and was based on the philosophy and principles inherent in a Motivational Interviewing style.19 The aim of the interview was to gain insight into the extent of the current pain problem and the impact it may have on the person’s life, gather information regarding current use of self-management strategies to be presented as feedback in the following session, and to elicit and reflect the following 4 categories of change talk: (1) the client’s recognition about the nature and extent of the problem, (2) the client’s concern about how he or she is currently managing the problem, (3) the client’s intention of changing in the direction of adaptive pain management, and (4) the client’s optimism that change is possible. At the conclusion of the interview, the interviewer provided a summary of the interview to that point, with an overview of the problem behaviour (as experienced and described by the participant) and of the participant’s reactions and change talk.

The aim of the second part of the intervention feedback interview was to provide appropriate information to the individual regarding where to access assistance in learning self-management strategies. Participants were invited to participate in a series of half-day pain management workshops conducted specifically for the purposes of the research. Each workshop covered one of the self-management activities described in the PPMP. To provide a range of treatment options and to emphasize personal choice and control, participants were also informed of any other relevant services already existing in the community where they would be able to access information and assistance with learning the particular self-management activity (eg, hospital physiotherapists, psychologists and occupational therapists, and government rehabilitation services).

**Control Assessment Interview.** The control assessment interview took approximately 1 to 1.5 hours to complete and was based on a standard pain clinic assessment procedure. The interviewer ascertained details regarding beliefs about the cause of the pain and expected prognosis; worst, average, and least pain severity ratings; and factors that increase and decrease the pain. Information was also elicited relating to previous and current medical treatment and previous surgical procedures related to the pain. Additional questions were included to determine what treatment recommendations had been made and whether the participant was adhering to those suggestions. Participants were asked whether, and in what way, the pain affected physical exercise, leisure and social activities, sleep, sexual activity, housework, outdoor chores, and relationships. Information was elicited regarding whether the participant had ever consulted anyone for an emotional or psychiatric problem and details of diagnoses, if appropriate. The final question in the interview pertained to all other optimism that such efforts will be beneficial. At the beginning of the interview, the interviewer clearly communicated free choice regarding what (if any) action the participant would take as a result of the feedback they were to be provided with. The feedback intervention followed the structure described here. (1) Feedback was provided separately for each self-management activity on the PPMP. (2) Discussion was provided of discrepancies between beliefs and behaviours on particular self-management activities to increase dissonance. (3) Discussion was provided of discrepancies between importance (outcome expectancy) and confidence (efficacy expectancy) scores on particular self-management activities to increase dissonance and to allow the interviewer to ascertain whether consciousness raising or self-efficacy strategies (or both) required to facilitate change for the activity. (4) Discussion was provided about activities where the individual was in the higher stages of change, to strengthen and support self-efficacy for change in other areas. Part 1 of the interview concluded with a summary of the interview to that point, with an overview of the problem behaviour (as experienced and described by the participant) and of the participant’s reactions and change talk.
health-related problems. The interview was designed to obtain information only and did not aim to elicit any motivational statements (change talk) from the participant.

**Control feedback interview.** Because feedback is not generally specifically provided in pain assessment procedures, the primary aim of the control feedback interview was to control for extra therapist time and attention in the treatment group (attention-placebo interview). The control feedback interview took up to 1 hour to complete. There was no discussion of any detected discrepancies between belief and behavior, or importance and confidence on any of the PPMP self-management activities and no change-talk was intentionally elicited. Subsequent to receiving feedback, the participants were clearly advised to attend the pain management workshops and, as with the treatment group, were also provided information regarding alternative services available in the community. After completing the feedback interview, participants in both groups had the opportunity to register for the pain management workshops.

**Pain management workshops.** The pain management workshops were conducted by a multidisciplinary team of experienced allied health professionals. Each group comprised up to 20 participants and all attendees were encouraged to bring a spouse, family member, or friend because research has clearly documented the importance of significant others in the management of chronic pain. Each of the 5 workshop topics covered one of the PPMP self-management activities (Exercise, Activity Pacing, Relaxation, Cognitive Strategies, and Medication Use), and each commenced with a clear rationale for adopting a self-management approach to chronic pain and an educational component regarding the multidimensional nature of pain because research has shown that a strong commitment to a self-management approach can serve as a mediator or moderator of successful treatment.

**Therapist Adherence to Treatment Protocol**

The interviews for both groups were taped to ensure interviewer adherence to treatment protocol. A random sample of 50% of the tapes of each interviewer was checked for adherence to specific treatment protocols by an independent rater (a senior clinical psychologist experienced in Motivational Interviewing). The rater ensured that the therapists (1) adhered to the appropriate semi-structured interview format, (2) used a counseling style consistent with Motivational Interviewing in the treatment group interviews, and (3) invited participants in both groups to attend workshops.

### Results

**Data Analysis**

Chi-square analyses were used to test for differences between 2 groups on categorical variables and the proportion of participants attending pain management workshops. Independent t tests were used to test for differences on continuous treatment variables. For all analyses, statistical significance was set at $P < .05$.

**Engagement in Treatment**

The aim of the study was to examine differences between groups in rates of engagement in treatment. The results demonstrate that treatment group participants were significantly more likely to attend workshops than were control group participants. With use of Yates’ correction for continuity, chi-square ($1, N = 78$) = 7.56, $P < .01$. Twenty-nine (74.4%) participants in the intervention group attended workshops, in comparison to 16 (41.0%) of participants in the control group.

**Adherence to Treatment Protocols**

Adherence to treatment protocols in the interviews was substantiated by having an independent rater check a random sample of the taped feedback sessions. Although it was determined that adherence to specific interview protocols had occurred, it was also deemed important to ascertain whether engagement in workshops was affected by interviewer characteristics. Chi-square analyses determined that interviewer characteristics did not significantly affect engagement in workshops ($P = .677$). The rates of engagement in workshops for participants assigned to each interviewer are illustrated in Table 2.

**Engagement and Preintervention Variables**

Because there were significantly more participants in the control group (7) who were litigating than in the intervention group (0), analyses were recomputed with the scores of those participants who were litigating excluded. These analyses demonstrated that litigation status did not affect engagement in treatment. Of the seven participants who were litigating in relation to their pain, three attended workshops and four did not. Further chi-square analyses demonstrated that there were no significant associations between engagement in workshops and any other pre-treatment medical, psychologic, or demographic variables.

### Discussion

Given the trend for treatment plans for chronic pain to focus on self-management strategies, factors affecting
engagement in these types of programs are becoming increasingly important. The aim of the current pilot study was to develop a brief motivational intervention to increase engagement in pain management workshops. The PPMI clearly increased rates of engagement, and the absence of significant correlations between workshop attendance and any other variables suggests that engagement was due to the intervention alone.

Seventy-four percent of the treatment group attended workshops in comparison to 41% of the control group. The increased rates of engagement in workshops within the treatment group is consistent with the findings of Swanson et al.25 and Daley and Zuckoff,3 who demonstrated that a brief motivational intervention significantly increased attendance at outpatient clinics in dually diagnosed patients.

Rates of engagement in treatment for chronic pain are generally reported to be higher in self-referred samples than in those who are physician referred.26

Because the participants in this study were recruited by means of media advertising to avoid differences in referral patterns, clearly the result was a self-selected sample. However, in this pilot study, 58 percent of the total sample (both groups combined) attended the recommended workshops; this figure is higher than the rates generally reported in physician-referred samples and somewhat lower than usual for a self-referred sample.26 Although one could argue that the population for whom this intervention was developed would primarily be self-referred, much like the participants in the Arthritis Self-Management Program,17 it would be interesting to determine whether the findings would generalize to a practitioner-referred sample in the community.

All participants in both groups who registered to attend workshops did attend. Therefore, there were no drop outs in this study; however, this is likely to have been due to the short duration of the workshops and the fact that participation was free of charge. It is important to determine whether the findings of this pilot study would generalize to longer treatment programs such as those conducted in pain clinics.

**Study Limitations**

The research participants were heterogeneous in terms of diagnosis. Twelve of the study participants (5 in the control group and 7 in the treatment group) had a diagnosis of osteoarthritis or rheumatoid arthritis. Whether these participants were in a remission or acute phase during the study had the potential to slightly affect the findings because this group may only be motivated to self-manage when the symptoms are present.27 It was thought to be likely that these participants were in an acute phase during the study because individuals in a remission phase would have been less likely to have volunteered as research participants; however, the analyses were recomputed with the scores of these participants excluded. The results were not found to be significantly different with, or without the scores of participants diagnosed as having osteoarthritis or rheumatoid arthritis, indicating that the inclusion of these individuals has not affected the findings. However, further research may be strengthened by excluding individuals who have chronic conditions that are characterized by fluctuations between remission and recurrent acute phases.

An additional study limitation relates to the possibility of demand characteristics affecting the findings because both interviewers in the study had intensive training in motivational interviewing. To control for demand characteristics, the interviews were semistructured and interviewers were required to use the format provided. Although the interviews were taped and checked for adherence to these formats as described earlier, further studies could be strengthened by incorporating the recently developed Motivational Interviewing Skill Code,22 which codes each therapist utterance and rates it as being Motivational Interviewing consistent or otherwise and could better ensure fidelity to Motivational Interviewing in the treatment group interviews.

**Implications for Clinical Practice**

One of the consistent predictors of drop out from multidisciplinary treatment is discrepant expectations.26 The PPMI described in this pilot study provides the opportunity to present the idea of a self-management approach to pain in a nonconfrontational manner using an empathic and respectful approach. Because this is done individually before group treatment, it allows the practitioner to pay careful attention to patient beliefs, the value the patient places on this type of approach, and the patient’s confidence to actually engage in and maintain self-management activities. The practitioner has the opportunity to explore these factors in a fluid, congruent manner that enhances readiness to change. In this sense, patients enter treatment already knowing what to expect and are feeling that (1) there is value in a self-management approach and (2) that with some help, they will be able to successfully engage in and maintain a self-management approach. Further, preparing clients for action in conjunction with standard assessment procedures before offering treatment is a more time- and cost-effective alternative to developing and conducting stage-based intervention.

In conclusion, these preliminary findings clearly demonstrate that if our practice is congruent with the motivational needs of our clients, we can succeed in engaging a greater proportion of individuals in the types of pain management treatments that have repeatedly been shown to be effective.
References

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