Identification of Pain-Reduction Strategies Used by Community-Dwelling Older Persons

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Background. The types of methods used by older persons to reduce chronic pain have not been adequately characterized. In this cross-sectional study of older persons with chronic nonmalignant pain, we sought to identify strategies perceived as effective in reducing pain and to ascertain factors associated with their use.

Methods. Participants included 272 community-dwelling persons aged 73 years or older. Information regarding participants' sociodemographic, clinical, psychological, and pain status was collected. Strategies perceived as effective in reducing pain were identified using a qualitative approach. Similar methods (e.g., “takes acetaminophen when necessary” and “uses Tramadol daily”) were grouped into specific pain-reduction categories (e.g., analgesic medication use). Logistic regression analysis was used to identify associations between participant-related factors and the four most prevalent pain-reduction strategies.

Results. Participants had a mean (standard deviation) age of 80.9 (5.1) years and were mostly female (69%). Overall, 248 (91%) participants reported at least one effective strategy for reducing pain; the mean number of strategies per participant was 2.7 (range = 1–6). The four most prevalent pain-reduction strategies were analgesic medication use (reported by 59% of participants), activity restriction (38%), hot and/or cold modalities (28%), and exercise (23%). Although most participants reported at least one effective pain-reduction strategy, 60% rated their pain as “quite a bit” or “extremely” bothersome. In logistic regression analysis, no factor (including age and gender) was independently associated with any of the prevalent pain-reduction strategies.

Conclusions. Despite the fact that most participants perceived several pain-reduction strategies as effective, 60% reported experiencing substantial pain. Research of older persons with chronic pain is warranted to determine whether changes in the way existing pain-reduction strategies are administered can improve the management of pain or if more efficacious strategies are needed.

Among older persons, chronic pain is a common (1–5) and often disabling condition (6–9). Efficacious treatments for older persons with chronic pain, however, remain inadequately defined. To date, few studies have examined the efficacy of pharmacologic or nonpharmacologic therapies for chronic pain in older persons (10,11). Expanding the number of older persons with chronic pain enrolled in clinical trials of pain therapies is therefore important. In addition, generating knowledge regarding the types of methods used by older persons to reduce pain could inform future intervention efforts.

Prior studies (12,13) have demonstrated a high prevalence of analgesic medication use in community-dwelling older persons with chronic pain, but did not inquire about the effectiveness of this treatment approach. Nonpharmacologic strategies such as massage, prayer, and cold were perceived as helpful in reducing musculoskeletal pain in at least two prior studies (14,15). However, these investigations may not have captured the full range of methods used by older persons to treat pain because each inquired about a limited number of strategies. At least two studies (16,17) of older persons with chronic pain used qualitative research methods and found that exercise, massage, and home remedies such as dietary modifications were also perceived as effective pain-reduction strategies. However, the generalizability of these findings is uncertain because of the small sample sizes (16,17).

The objective of this study was to identify—using qualitative research methods—strategies perceived as effective in reducing chronic pain in a large sample of community-dwelling older persons. We also sought to determine whether specific participant characteristics including demographic, psychosocial, and pain-relevant variables were associated with the most commonly reported pain-reduction strategies.

Methods

Study Population

Participants were members of the Precipitating Events Project (PEP). This ongoing prospective cohort study is designed to elucidate the epidemiology of disability and recovery among 754 community-dwelling persons aged 70 years or older (18). PEP exclusion criteria included the need for personal assistance in any of four key activities of daily living (ADLs)—bathing, dressing, walking inside the house, and transferring from a chair; significant cognitive impairment with no available proxy (18); inability to speak English; diagnosis of a terminal illness with a life expec-
Data Collection

Assessment of participant characteristics.—Demographic data included age, gender, race, educational level, and living situation. Medical comorbidity was determined by inquiring about the presence of 12 self-reported, physician-diagnosed chronic conditions (18). Participants’ cognitive function was assessed with the Folstein Mini-Mental State Examination (MMSE) (20). Although participants were independent in four basic ADLs at enrollment, substantial disability developed over time (21). Information on participants’ functional status was obtained by inquiring about their self-reported ability to perform seven basic and five instrumental ADLs (21). For each ADL task, participants were asked, “At the present time, do you need help from another person to complete the task?” Participants who did not need help were asked, “At the present time, do you have difficulty with the task?” Each task was scored as “0” for no help and no difficulty, “1” for difficulty but no help, and “2” for help regardless of difficulty (21). Then, a summary ADL disability score was calculated for each participant (range = 0–24). Given the strong association between pain and depression in older persons (22), the 11-item Center for Epidemiologic Studies Depression (CES-D) scale (23) was used to assess for depressive symptomatology. Participants were considered to have significant depressive symptomatology if they had transformed CES-D scores of 16 or greater (24). Functional self-efficacy was assessed with a slightly modified version of Tinetti’s Self-Efficacy scale (25). Participants were asked to rate their level of confidence in their ability to perform each of 10 activities (e.g., bathing, dressing) required for functional independence on a five-level scale, ranging from not at all (score = 0) to completely (score = 4). Functional self-efficacy scores ranged from 0 to 40.

Ascertainment of participants’ pain status and pain-reduction strategies.—Participants were first asked to identify their site(s) of pain after being shown a list of 18 anatomic locations; they could report up to a maximum of five chronic pain sites. Those participants reporting more than two sites (e.g., hip, lower back, and neck) were asked to identify the two sites that most limited their daily activities. Pain duration, bothersomeness of pain, and pain-related disability data were ascertained for these two sites only, as described below. Information regarding participants’ pain duration, bothersomeness, and related disability was also obtained for participants who reported one or two sites of chronic pain. For pain duration, we asked, “How long (in months) has your [specific pain site] been a problem?” To determine bothersomeness of pain, we asked, “During the past month, how bothersome has your [specific pain site] been?” Responses included “Not at all,” “A little bit,” “Moderately,” “Quite a bit,” and “Extremely.” To assess for pain-related disability, we asked, “During the past month, how many days did you cut down on your usual activities because of your [specific pain site]?” Responses were coded categorically as “0 days,” “1–10 days,” and “≥11 days.” For the 158 participants who provided data on two chronic pain sites, the higher reported value for each variable (i.e., duration, bothersomeness, and pain-related disability) from either pain site was used in the analyses. For example, a participant who reported knee pain for 2 years and back pain for 5 years was considered to have a pain duration of 5 years.

To identify strategies perceived as effective in reducing pain, participants were asked: “What have you found to be the most effective way(s) to reduce your pain?” Participants’ open-ended responses were transcribed in their entirety. Probes were used to help clarify participants’ responses. Participants could report up to three methods to reduce their pain for each of the two pain sites (when applicable), for a maximum of six methods.

Analyses

Two investigators (L.B. and C.R.) analyzed the qualitative data using content analysis (28), where meaningful phrases were identified and grouped into categories of effective treatments based on similarities and differences in the texts. The investigators first independently reviewed the qualitative data and identified similar responses (e.g., “lying in bed,” “lie flat in bed”). The investigators then met jointly to compare their results and to code similar methods (e.g., “getting in bed” and “lies down”) and to reach a consensus on any conceptual differences in coding or category definitions. Using an inductive process, the investigators subsequently assembled the individual methods into discrete, core categories (listed in Table 2). Examples of specific methods and their corresponding categories included, “I take acetaminophen if the pain is bad” and “I take oxycodone four times a day” (analgesic medication use); “I stretch” and “I walk” (exercise); “I avoid activities that require bending or twisting” and “I lie down and rest” (activity restriction); and “I wear a knee brace” and “I use a back support” (assistive/prosthetic/orthotic devices). The category of cognitive methods included self-initiated distractions, attitudes, or practices that were used by participants to reduce
scores of all of the candidate factors listed in Table 1 and the four was selected to enhance our ability to identify potential analytic approach was used. A threshold prevalence of 20% (or greater in the sample), the following reported pain-reduction strategies (defined as having characteristics were associated with the four most frequently were created only after reviewing all of the transcribed data. been identified and suitably classified into categories that occasions to ensure that all of the reported methods had been identified and suitably classified into categories that were created only after reviewing all of the transcribed data. The individual categories are hereafter referred to as pain-reduction strategies. Descriptive statistics were calculated for participants’ demographic, medical/cognitive, psychological, and pain-related factors. To determine whether participants’ characteristics were associated with the four most frequently reported pain-reduction strategies (defined as having a prevalence of 20% or greater in the sample), the following analytic approach was used. A threshold prevalence of 20% was selected to enhance our ability to identify potential associations. Bivariate associations were first examined for all of the candidate factors listed in Table 1 and the four pain-reduction strategies using chi-square or Fisher’s exact tests for categorical variables and t tests for continuous variables. To identify factors independently associated with one or more of the four pain-reduction strategies, we constructed separate logistic regression models, one model for each pain-reduction strategy. The dependent variable in each model was coded in a binary manner. For example, in the model for analgesic medication use, participants who included in all models. Additional variables were included in a regression model if they were associated in bivariate analyses with the pain-reduction strategy of interest at the p < .05 level. Statistical tests were two-tailed, and p values less than .05 were considered statistically significant in the logistic models. Hosmer and Lemeshow tests were used to determine the goodness-of-fit of each model. Supplementary logistic regression analyses were performed using a stepwise selection method to determine if the models’ goodness-of-fit was improved by creating more parsimonious models. All analyses were performed using SAS version 8.2 (SAS Institute, Cary, NC).

### Table 1. Characteristics of Study Participants (N = 272)

<table>
<thead>
<tr>
<th>Demographic</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age, mean (SD)</td>
<td>80.9 (5.1)</td>
</tr>
<tr>
<td>Female, n (%)</td>
<td>189 (69)</td>
</tr>
<tr>
<td>White race, n (%)</td>
<td>249 (92)</td>
</tr>
<tr>
<td>Education in y, mean (SD)</td>
<td>11.8 (2.8)</td>
</tr>
<tr>
<td>Living alone, n (%)</td>
<td>122 (45)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Medical/Functional</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of chronic conditions, mean (SD)</td>
<td>2.3 (1.3)</td>
</tr>
<tr>
<td>Folstein MMSE score, mean (SD)</td>
<td>26.5 (3.0)</td>
</tr>
<tr>
<td>ADL disability score, mean (SD)</td>
<td>18.1 (5.3)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Psychological</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Depressive symptoms, n (%)</td>
<td>99 (36)</td>
</tr>
<tr>
<td>Functional self-efficacy score, mean (SD)</td>
<td>26.7 (9.6)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Pain</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of pain sites, mean (SD)</td>
<td>2.2 (1.3)</td>
</tr>
<tr>
<td>Site most limiting daily activities, n (%)</td>
<td>91 (33)</td>
</tr>
<tr>
<td>Lower back</td>
<td>91 (33)</td>
</tr>
<tr>
<td>Knees</td>
<td>67 (25)</td>
</tr>
<tr>
<td>Legs</td>
<td>50 (18)</td>
</tr>
<tr>
<td>Hips</td>
<td>40 (15)</td>
</tr>
<tr>
<td>Shoulders</td>
<td>35 (13)</td>
</tr>
<tr>
<td>Botherliness of pain, n (%)</td>
<td>2 (1)</td>
</tr>
<tr>
<td>Not at all</td>
<td>2 (1)</td>
</tr>
<tr>
<td>A little bit</td>
<td>27 (10)</td>
</tr>
<tr>
<td>Moderate</td>
<td>79 (29)</td>
</tr>
<tr>
<td>Quite a bit</td>
<td>131 (48)</td>
</tr>
<tr>
<td>Extreme</td>
<td>32 (12)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Duration in y, n (%)</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;1</td>
<td>34 (13)</td>
</tr>
<tr>
<td>1–10</td>
<td>171 (63)</td>
</tr>
<tr>
<td>&gt;10</td>
<td>65 (24)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Restricted activity days due to pain in past mo, n (%)</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>131 (48)</td>
</tr>
<tr>
<td>1–10</td>
<td>84 (31)</td>
</tr>
<tr>
<td>≥11</td>
<td>56 (21)</td>
</tr>
</tbody>
</table>

Note: *Participants with Center for Epidemiologic Studies Depression scores ≥16 were classified as having depressive symptoms.
*Participants could report up to two pain sites that most limited their daily activities.
SD = standard deviation; MMSE = Mini-Mental State Examination; ADL = activities of daily living.

### Table 2. Strategies Perceived as Effective for Reducing Chronic Pain

<table>
<thead>
<tr>
<th>Strategy</th>
<th>N (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Analgesic medication use</td>
<td>146 (59)</td>
</tr>
<tr>
<td>Activity restriction</td>
<td>94 (38)</td>
</tr>
<tr>
<td>Hot/cold modalities</td>
<td>69 (28)</td>
</tr>
<tr>
<td>Exercise</td>
<td>56 (23)</td>
</tr>
<tr>
<td>Assistive/prosthetic/orthotic devices</td>
<td>24 (10)</td>
</tr>
<tr>
<td>Physical therapies</td>
<td>18 (7)</td>
</tr>
<tr>
<td>Cognitive method</td>
<td>7 (3)</td>
</tr>
<tr>
<td>Alters body position</td>
<td>7 (3)</td>
</tr>
<tr>
<td>Complementary medicine</td>
<td>5 (2)</td>
</tr>
<tr>
<td>Other*</td>
<td>18 (7)</td>
</tr>
</tbody>
</table>

Note: Two hundred forty-eight participants reported at least one effective strategy; the remaining 24 participants did not report any effective strategy.
*Includes surgery (n = 4), makes dietary modifications (n = 2), visits podiatrist (n = 1), sleeps (n = 1), puts wedge of tissue between toes (n = 1), keeps going (n = 1), gets chicken cartilage injection in knee (n = 1), sits in a soft seat/uses a cushion (n = 3), prays a lot (n = 1), slows down pace of walking (n = 1), pauses in the activity that causes discomfort/waits until pain goes away (n = 2).

### RESULTS

Cohort members with (n = 272) versus those without chronic pain (n = 354) were more likely to report the presence of two or more chronic conditions (73% vs 62%, p < .01), and have a higher mean body mass index (27.4 vs 25.8, p < .01), an increased prevalence of depressive symptoms (37% vs 19%, p < .01), and a lower mean functional self-efficacy score (26.7 vs 29.4, p < .01). Participants in the analytic sample, i.e., those with chronic pain, had a mean (standard deviation) age of 80.9 (5.1) years (range = 73–99) and were mostly female (Table 1). A total of 119 discrete strategies perceived as effective in reducing pain were reported (see Appendix).

The specific categories of pain-reduction strategies and their corresponding frequencies are shown in Table 2. Among the participants (n = 248) who identified one or
shown that activity restriction, when used as a means of such as reduced pain, prior longitudinal research (29) has down on one’s activities’’ can provide short-term benefits. Our results are generally consistent with two recent quantitative studies (14,15) of pain-management strategies used by older persons. In contrast, two qualitative studies (16,17) found that older persons used medications as a “last resort,” preferring home remedies and other self-care strategies such as rest and hot and/or cold modalities instead. These discrepant findings may be explained by variations in study location (i.e., United States vs Australia and Canada) and interview technique (i.e., individual vs focus groups).

Table 3. Logistic Regression Analyses Results

<table>
<thead>
<tr>
<th>Variable</th>
<th>Analgesic Medication Use</th>
<th>Activity Restriction</th>
<th>Hot/Cold Modalities</th>
<th>Exercise</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age, y</td>
<td>0.97 (0.92–1.03)</td>
<td>1.01 (0.96–1.06)</td>
<td>0.97 (0.92–1.03)</td>
<td>1.04 (0.98–1.11)</td>
</tr>
<tr>
<td>Female (vs male)</td>
<td>1.08 (0.59–1.98)</td>
<td>1.07 (0.60–1.89)</td>
<td>1.93 (0.97–3.84)</td>
<td>0.92 (0.48–1.78)</td>
</tr>
<tr>
<td>≥ 2 (vs &lt;2) chronic conditions</td>
<td>1.23 (0.67–2.27)</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>CES-D score ≥16 vs &lt;16</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Functional self-efficacy score (0–40)</td>
<td>0.99 (0.95–1.02)</td>
<td>—</td>
<td>—</td>
<td>0.50 (0.23–1.08)</td>
</tr>
<tr>
<td>No. of pain sites (1–5)</td>
<td>1.26 (1.00–1.58)</td>
<td>—</td>
<td>0.21 (0.98–1.50)</td>
<td>—</td>
</tr>
<tr>
<td>Botheromeness of pain (1–5)</td>
<td>1.09 (0.77–1.53)</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>Duration of pain, y</td>
<td>—</td>
<td>1.00 (1.00–1.00)</td>
<td>1.00 (1.00–1.00)</td>
<td>—</td>
</tr>
<tr>
<td>Days of restricted activity due to pain (vs 0)</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>1–10</td>
<td>19 (0.64–2.23)</td>
<td>—</td>
<td>—</td>
<td>0.86 (0.42–1.77)</td>
</tr>
<tr>
<td>≥11</td>
<td>1.85 (0.81–4.21)</td>
<td>—</td>
<td>—</td>
<td>0.68 (0.26–1.77)</td>
</tr>
</tbody>
</table>

Notes: Results are presented as adjusted odds ratios with corresponding 95% confidence intervals. Each of the four models included age, gender, and those variables associated with the dependent variable in bivariate analyses at the p < .10 level: 1) two or more chronic conditions (p = .09), number of pain sites (p = .09), botheredness of pain score (p = .08), and number of restricted activity days (p = .02) — analgesic medication use; 2) duration of pain (p = .03) — activity restriction; 3) number of pain sites (p = .01) and duration of pain (p = .09) — hot cold modalities; and 4) presence of depressive symptoms (p < .01), functional self-efficacy score (p < .01), and restricted activity days (p = .05) — exercise. Hosmer and Lemeshow goodness-of-fit statistics: analgesic medication use χ² = 8.89, p = .37; activity restriction χ² = 4.37, p = .82; hot/cold modalities χ² = 4.83, p = .77; and exercise χ² = 3.12, p = .93.

DISCUSSION

This study confirms the high prevalence of chronic pain in community-dwelling older persons (1–5) and demonstrates that a broad array of pain-reduction strategies are perceived as effective by these individuals (see Appendix). Analgesic medication use was the most frequently cited pain-reduction strategy perceived as effective. This finding may be due to the wide availability of prescription and over-the-counter analgesic medications, physician recommendations, advertising, as well as real and perceived barriers to the use of the other pain-reduction strategies. Of note, a substantial minority of participants perceived activity restriction to be an effective pain-reduction strategy. Although it may be intuitive that “resting” or “cutting down on one’s activities” can provide short-term benefits such as reduced pain, prior longitudinal research (29) has shown that activity restriction, when used as a means of coping with pain due to osteoarthritis of the knee, is associated with greater physical disability. Given the deleterious effects of activity restriction among older persons (21,29), clinicians should routinely inquire about the extent to which older patients with chronic pain use this strategy and recommend, when appropriate, alternative pain-reduction strategies. Decreasing the level of activity restriction in older persons with pain may also contribute to fewer depressive symptoms (30).
STRATEGIES USED BY OLDER PERSONS TO TREAT CHRONIC PAIN

Additional research is warranted to characterize further the practices of diverse samples of older persons with chronic pain regarding analgesic medication use.

Perhaps the most significant finding of this study is that, although the vast majority of participants perceived several pain-reduction strategies to be effective, 60% rated their pain as quite a bit or extremely bothersome during the month preceding the study. These contradictory findings may have several explanations. First, a strategy that produces small or even transient reductions in pain may be considered “effective” by older persons with chronic pain, i.e., expectations regarding treatment efficacy may be low. Second, it is possible that the potency or frequency of use of a given strategy, as well as the proficiency with which it was administered, was not adequate to meaningfully reduce participants’ pain. Third, untoward side effects associated with the use of certain strategies (e.g., analgesic medications) may hinder effective pain relief. These results underscore the need for additional research to better characterize the ways in which older persons use the various strategies, as well as their attitudes, thoughts, and beliefs regarding the treatments.

Identifying patient-level factors associated with the perceived efficacy of various pain-reduction strategies could inform future intervention efforts. Although the results from the logistic regression models in the current study were generally in the expected directions, e.g., participants with versus those without depressive symptoms were less likely to report exercise as an effective pain-reduction strategy, no independent associations were identified between the participant-level variables and the four most commonly reported pain-reduction strategies. Other factors including ethnicity and type of chronic pain may be associated with perceived efficacy of various treatments (35), but were not examined in the current study.

Our study has several limitations. Because the study sample was mostly white and female, our findings may not be generalizable to other populations of older persons. Participants may have failed to report pain-reduction strategies deemed socially unacceptable (e.g., using alcohol to treat pain). It is possible that the perceived efficacy of the pain-reduction strategies varies according to the etiology of an older person’s chronic pain. However, these potential relationships could not be determined, because we did not inquire about self-reported causes of chronic pain. In addition, although the nurse interviewers received extensive training in questionnaire administration, we did not assess inter-rater reliability. Finally, the current study used a recommended pain measure, i.e., level of pain bothersomeness, but did not ascertain data on participants’ intensity of pain. It is possible that perceptions of treatment efficacy are associated with intensity (as opposed to bothersomeness) of pain.

Conclusion

Although the vast majority of participants perceived several pain-reduction strategies to be effective, 60% reported experiencing substantial pain. Further research of older persons with chronic pain is warranted to determine whether changes in the way existing pain-reduction strategies are administered can improve the management of pain or if more efficacious strategies are needed.

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REFERENCES

APPENDIX: TAXONOMY OF PAIN-REDUCTION STRATEGIES

1. Analgesic Medication Use
   
   **Acetaminophen products**
   - Excedrin
   - Tylenol
   - Acetaminophen product, type not specified
   
   **Aspirin products**
   - Anacin
   - Baby aspirin
   - Bayer aspirin
   
   **Bufferin**
   **Ecotrin**
   **Aspirin product, type not specified**
   
   **Opioids**
   - Darvocet
   - Fentanyl patch
   - Morphine sulfate
   - Oxycodone/Roxicodone
   - Oxycontin
   - Percocet/Endocet
   - Acetaminophen with codeine
   - Acetaminophen with hydrocodone
   
   **COX-1 inhibitors**
   - Advil
   - Aleve
   - Trilisate
   - Daypro
   - Lodine
   - Meclofenamate
   - Motrin
   - Naproxen
   - Orudis
   - Relafen
   - Clinoril
   
   **COX-2 inhibitors**
   - Celebrex
   - Vioxx
   
   **Anticonvulsants**
   - Neurontin
   
   **Other analgesics**
   - Ultram
   
2. Activity restriction
   
   **Decreases activities**
   - Stops activities altogether
   - Restricts certain movements
   - Cuts down on amount of walking/avoids walking long distances
   - Gets in bed and lies down
   - Avoids activities that require bending or twisting
   - Rests/takes it easy
   - Sits down
   - Uses affected limb as little as possible
   - Avoids lifting heavy objects
   - Stays off of feet/keeps off them/doesn’t walk or put pressure on affected part
   - Elevates affected part
   - Does not stand for long periods
   
3. Hot/cold modalities
   
   **Takes hot bath/shower**
   - Uses heating pad/hot towel/hot water bottle/hot compress
   - Uses hydrocollator pack heater
   - Applies herbal warm pack
   - Takes a sauna
   - Applies Icy Hot patch

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5. Assistive/prosthetic/orthotic devices
   Uses knee brace/support
   Wears back brace/support
   Uses abdominal belt
   Uses walker to help with ambulation
   Wears soft neck collar
   Wears splint or brace on hand or wrist
   Wears wool gloves
   Wears fitted shoes/special shoes/larger fitting shoes
   Uses lumbar pillow in lift chair
   Uses electric bed
   Uses knee pillows
   Wears stockings
   Uses four-wheeled walker when walking outdoors
   Uses chair lift
   Applies pressure (with Ace bandage) to affected area
   Wears orthotic shoes
   Sits in high back chair and applies pressure to back using pillow

6. Physical therapies
   Gets massage therapy
   Undergoes physical therapy
   Rubs affected part
   Uses vibrating pillow
   Uses hand vibrator
   Gets massage via massage mattress
   Gets moist heat therapy from physical therapist
   Uses transcutaneous electrical nerve stimulator (TENS)
   Gets ultrasound therapy
   Uses over-the-door cervical traction kit

7. Cognitive coping
   Ignores pain by keeping busy/don’t think about the pain
   Gets used to the pain on an emotional basis
   Goes outside
   Does crossword puzzles, reads, listens to music, watches television, thinks of a good chess game
   Meditates

8. Alters position
   Changes position/finds a good position
   Rolls from one side to another
   Does not lie on right side in bed

9. Complementary medicine
   Visits chiropractor
   Uses magnetic pad

10. Other
    Has surgery
    Makes dietary modifications
    Prays a lot
    Got chicken cartilage injection in knee
    Pauses in the activity that causes discomfort/waits until pain goes away
    Sits in soft seat/sits on a cushion
    Visits podiatrist
    Sleeps
    Puts tissue between toes
    Keeps going
    Slows down pace of walking