Literature Supported Nursing Interventions for Patients Suffering from Fibromyalgia

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Abstract

This purpose of this writing is to review literature regarding nursing interventions appropriate for patients suffering from the painful musculoskeletal disorder called fibromyalgia. Studies were collected through the CINHL and MedPub databases and further analyzed to evaluate whether or not the interventions were well supported and should be recommended for use in nursing practice. Since many treatment options are outpatient in nature, practice implications suggested include educating patients on pharmacological, non-pharmacological, and cognitive treatment options and helping patients to individualize their care according to what work most effectively to achieve the highest level of functioning.

*Keywords:* fibromyalgia, nursing interventions, analysis, practice implications
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Fibromyalgia is a chronic, widespread, musculoskeletal disorder with many associated symptoms such as pain, insomnia, cognitive disturbances, and fatigue. It occurs in 2-4% of the population and nine times as often in women than in men (Malin & Littlejohn, 2012). Because it has no known etiology, treatment is focused on symptom management and optimizing both social and economic quality of life. The following paper explores the research question “what nursing interventions for patients with fibromyalgia does the literature reveal?” Analysis of literature supported interventions as well as practice implications are also discussed. With many treatment options including pharmacological, non-pharmacological, and cognitive therapies, nurses have many ways to provide care for those suffering from this debilitating disease.

**Literature Supported Interventions**

**Intervention Rationale**

In the article “Caring for the Patient with Fibromyalgia: The Rehabilitation Nurse’s Role” the author sets four standards for care of a patient with fibromyalgia. Care of a patient with fibromyalgia is centered on palliative treatment as there is no cure (Schaefer, 2004). The four parts of treatment are reassurance and explanation of fibromyalgia, physical therapy, medication therapy, and counseling (Schaefer, 2004).

There are different treatment options for fibromyalgia based on pathophysiology and which targets the interventions are meant to work on. According to Imamura, Cassius, and Fregni (2009) there are “three important areas associated with fibromyalgia which include (a) areas associated with somatosensory processing including different levels from nociceptors, spinal cord to thalamus and parietal cortex; (b) areas involved in affective emotional processing; (c) areas involved in executive processing” (Finding the best treatment target section, para. 1).
Treatment for fibromyalgia should concentrate on these regions simultaneously for effective pain control.

Treating symptoms of fibromyalgia is the appropriate method of treatment since it is not known the mechanism that causes the disease. The combination of pharmacologic and non-pharmacologic interventions is needed to reduce both physical pain and to manage other symptoms associated with fibromyalgia. Other symptoms that are seen can be “dysfunctional sleep, fatigue, mood disorders, cognitive dysfunction, headache, migraine, irritable bowel and bladder syndromes, and other fibromyalgia associated disorders” (Imaamura et al., 2009, Treatment and rehabilitation evidence based update section, para. 1).

**Pharmacological Interventions**

Medication therapy is an important aspect of treatment. There are three common medication categories: antidepressants, anticonvulsants, and analgesics. Medications provide temporary relief but the benefit can be decreased over time. These drugs also may take several weeks to be effective and have severe side effects of which the patient should be aware (Schaefer, 2004).

Pharmacological interventions include the use of medications to reduce pain by reducing nociceptive transmission, decrease levels of glutamate, or increasing the activity of descending inhibitory pain sensors (Firestone, Holton, Mist, Wright, & Jones, 2012). The type and combination of medications used to treat fibromyalgia depends on the symptoms being treated.

Tricyclic antidepressants such as amitriptyline, nortriptyline, imipramine, and cyclobenzaprine “inhibit the reuptake of serotonin and norepinephrine in spinal neurons, thus increasing their synaptic concentrations” which affects the descending pain pathways.
neurotransmitters by producing an analgesic effect (Traynor, Thiessen, & Traynor, 2011, p. 1309). This helps to reduce the pain of fibromyalgia.

Serotonin-and norepinephrine-reuptake inhibitors such as venlafaxine, duloxetine, and milnacipran work by increasing the analgesic effects of the descending inhibitory pain pathways. Since 45-69% of fibromyalgia sufferers also have concurrent mood disorders, these medications also help with anxiety and depression that is often seen in fibromyalgia patients (Firestone et al., 2012). Selective serotonin-reuptake inhibitors such as fluoxetine, paroxetine, and citalopram are better tolerated than tricyclic antidepressants but have been found to be less effective in treating fibromyalgia pain.

Opioids such as oxycodone and morphine are discouraged from use in pain treatment of fibromyalgia due to lack of evidence about the effectiveness of them and potential adverse effects such as dependence and overprescribing (Traynor et al., 2011). Tramadol has been shown in randomized controlled trials to be effective in reducing fibromyalgia pain and increasing the functionality of patients. Imamura et al. (2009) state that “non-steroidal anti-inflammatory drugs and corticosteroids are not effective for the treatment of fibromyalgia” (Pharmacological approaches section, para. 3).

Anticonvulsants such as Pregabalin and Gabapentin act by decreasing the release of excitatory neurotransmitters which results in decreased duration, amplification and augmentation of the pain signal (Firestone et al., 2010). Evidence is showing that fibromyalgia may produce up to two or three times more excitatory neurotransmitters than in the healthy individual and these anticonvulsants are effective in reducing pain in patients with fibromyalgia (Firestone et al., 2012; Traynor et al., 2011). Some side effects to watch for with these medications are dizziness,
somnolence, lightheadedness, and weight gain. Sleep and anxiety were improved for patients while on these medications.

**Non-Pharmacological Interventions**

Physical therapy is another important part of a patient’s treatment plan. An individual exercise plan should be designed with specific patient goals. Exercise has been found to improve flexibility, function, and reduce fatigue. Exercise may not completely relieve symptoms, however it has been found to decrease the advancement of symptoms. A twelve week program of graded aerobic exercise has been found to be helpful in reducing deconditioning. Patients need to be careful to not over exercise because too much can cause injury which may cause more pain. The author also found that patients with social support tend to do better with an exercise program (Schaefer, 2004). Patients with fibromyalgia also need to incorporate adequate sleep into their schedules.

Aerobic exercise has been shown to help with the symptoms and treatment of fibromyalgia. Imamura et al. (2009) state that “there is scientific evidence suggesting that controlled and supervised aerobic exercise performed on a graded treadmill” showed a reduction in symptoms “and is effective for the treatment of fibromyalgia” (Non-pharmacological approaches section, para. 1). Progression of the exercise should proceed at a slow pace to help prevent pain due to exertion and be done on a regular basis. Strengthening exercises also help with fibromyalgia symptoms. It is unknown why aerobic and strength exercises help with fibromyalgia but are thought to improve the regulation of pain sensory processing (Imamura et al., 2009).

Motor cortex stimulation by electrical currents by epidural electrodes, repetitive transcranial magnetic stimulation, or transcranial direct current stimulation has been shown to be
effective in reducing fibromyalgia pain. Imamura et al. (2009) state that “the rationale for motor cortex stimulation is based on evidence showing significant thalamic (and thus somatosensory) dysfunction in chronic pain and significant changes in thalamic activity with motor cortex stimulation” (Electrical stimulation section, para. 1). Brain stimulation offers a way to specifically target an area to work on specific neural pathways to reduce pain symptoms in those associated areas.

Acupuncture results for treatment of fibromyalgia are controversial and not very well-documented. Any benefits seen are usually short-lived and only in small areas. Activities such as yoga and tai chi may benefit fibromyalgia patients but more research is needed in those areas.

**Cognitive Interventions**

Patients with fibromyalgia are often seen as not really sick because they do not look ill. It is important they and their families understand the disease process. Often support groups are beneficial to helping the patient understand their experiences. The author recommends four websites that would be beneficial to patients (Schaefer, 2004).

Psychological and psychiatric symptoms can be present in patients with fibromyalgia. Using cognitive behavior therapies can help a patient improve their psychological and physical symptoms when used in conjunction with other interventions. Reframing problems, scheduling pleasurable activities, and learning to avoid catastrophic thinking can be useful strategies in fibromyalgia management (Firestone et al., 2012). Having a positive attitude and “a greater acceptance of chronic pain was associated with less pain, symptoms, fibromyalgia impact, anxiety, and depression as well as better general health, vitality and physical and social functioning” (Rodero et al., 2011, Discussion section, para. 1). Some behavior coping strategies such as guarding and resting have been shown to negatively impact fibromyalgia symptoms and
Counseling and support groups also play an important role in treatment. Patients need to identify stressors in their lives and avoid these. Stress can play a role in increasing symptoms. Social workers should be a part of the team to explain available resources for patients with fibromyalgia. The patient also must learn to compensate for parts of their lives they can no longer manage. This can take a lot of social support from support groups and families. Keeping a journal may help the patient understand their feelings about their illness.

**Personality and Perceived Injustice Considerations**

Fibromyalgia patients are typically described as “type A” people—perfectionists, introspective, and, on occasion, demanding or even “exhausting to manage.” Malin and Littlejohn (2012) also explain, “Chronic pain incorporates a complex mix of nociception, peripheral neural processing, and affective and behavioural responses” (p. 278). There is no question that psychological constructs impact fibromyalgia outcomes, although it is “unclear if personality elements result from or cause symptoms associated with fibromyalgia” (Malin & Littlejohn, 2012, p.278). Further investigation is necessary.

Perceived injustice is another aspect to consider when providing care for a fibromyalgia patient. It is defined as “a multidimensional construct comprised of elements that assess the severity of loss, irreparability of loss, blame and sense of unfairness” (Rodero et al., 2012, p.86). Perceived injustice is linked to poorer physical health and recovery and may compound an already distressed patient suffering with chronic pain (Rodero et al., 2012).
Analysis of Evidence

Pharmacological Interventions

The evidence presented in the literature about pharmacological interventions for the treatment of fibromyalgia appeared to be presented in a well-researched thorough article by Traynor et al. (2011) reviewing various randomized controlled trials for the various medications presented. The article researched recently published meta-analysis literature and reviewed the European League against Rheumatism evidence-based recommendations for treatment of fibromyalgia. These recommendations were based on “a total of 59 pharmacologic studies using the American College of Rheumatology classification criteria” (Traynor et al., 2011, p. 1315-1316). The information presented will be useful for a nurse providing pharmacological care for a patient with fibromyalgia in that the nurse will have more knowledge of the actions and efficacy of the medications being given for symptoms, and thus further educate the client.

Non-Pharmacological Interventions

The article by Imamura et al. (2009) used to research non-pharmacological interventions in the treatment of fibromyalgia used an extensive wide list of referenced research with citations throughout the paper. Aerobic and strengthening exercise interventions were mentioned in other articles reviewed but are not cited in this paper. The evidence for this intervention seems to be strong.

Motor cortex stimulation was not mentioned in other literature reviewed except the article by Imamura et al. (2009) cited in this paper. The article mentions several meta-analyses and sources in presenting the information and shows the effectiveness of electrical stimulation in reducing fibromyalgia symptoms.
Acupuncture was mentioned in other literature reviewed with some research mentioning acupuncture as being effective and others saying that research was lacking to have a definitive confirmation that it works to reduce fibromyalgia symptoms. The evidence is weak at this point to recommend acupuncture as an effective intervention. Yoga and tai chi intervention also had similar research results with not enough control studies to prove their effectiveness. One randomized trial conducted with tai chi by Wang et al. (2010) suggested that “tai chi is potentially a useful therapy for patients with fibromyalgia” but had limitations as a single blind study in that a same tai chi group could not be used for comparison (Discussion section, para. 1).

**Cognitive Interventions**

The article by Rodero et al. (2011) used to research cognitive interventions for treatment of fibromyalgia extended previous work done on the findings of acceptance-based interventions with the results being similar. There is strong evidence that “where the psychological area is of great importance, the acceptance-based approach is highly recommendable” (Robero et al., 2011, Discussion section, para. 4). This suggests that patients who accept their chronic condition of fibromyalgia and its associated side effects have reduced symptoms.

**Recommendation and Integration Evidence**

Patients with fibromyalgia need to be assessed individually to make a personalized plan of care. Some of the above treatments may not work for every patient. Although not every intervention mentioned has literature-supported success in treatment of Fibromyalgia, they do not have negative or harmful side effects. Therefore nurses and others caring for these patients should keep in mind all types of treatments available and educate patients on all of their options in order to see what works best for them.
Fibromyalgia maintenance occurs primarily in outpatient settings, so many of the interventions may not be seen often in an inpatient setting as anything more than a co-morbidity. Nurses should recommend a combination of pharmacological, non-pharmacological, and cognitive treatments and consider personality traits when caring for patients with Fibromyalgia. According to Firestone et al. (2012), more than 27% of patients feel as though their healthcare providers do not view fibromyalgia as a “very legitimate” disorder. Although caring for a patient who suffers from this life-long disease can be difficult, nurses should make every effort to support the patient physically, spiritually, and emotionally using a variety of nursing interventions.

Conclusion

Fibromyalgia and its associated symptoms continue to be a challenging disorder for both patients and healthcare providers to manage. Pharmacological interventions are not the only options for patients suffering from fibromyalgia. Through analysis of many possible interventions, it is decided that nurses should provide education on medications, exercise, rest, as well as cognitive therapies. Nurses should recommend the patient tries several combinations of treatment options to find the ones that most effectively manage their symptoms and improve their quality of life.
References


