

Running Head: PMHNP NONMALIGNANT PAIN AND DEPRESSION

ROLE FOR PMHNP IN TREATING ADULTS WITH CHRONIC NONMALIGNANT
PAIN AND DEPRESSION

By

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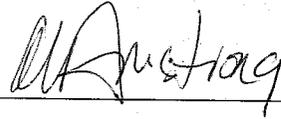
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ROLE FOR PMHNP IN TREATING ADULTS WITH CHRONIC NONMALIGNANT
PAIN AND DEPRESSION

Abstract

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The purpose of this paper is to discuss what role Psychiatric Mental Health Nurse Practitioners (PMHNP) can have in supporting primary care providers in developing an effective treatment plan for patients with chronic pain. Chronic pain accounts for 80% of all visits to primary care, and is one of the most complex conditions primary care treats. Depression is cited as one of the complicating factors in treating chronic pain. A literature review of studies related to treatment of chronic pain in the primary care setting suggests that primary care providers do not have the resources to address depression effectively so may not regularly assess for, and therefore may inadequately treat, depression. The literature also demonstrated that the lack of treatment for depression affected the response to chronic pain therapies. From the mental health perspective, studies suggest that chronic pain affects close to 47% of those suffering from depression, and that untreated chronic pain negatively affects therapy for depression. These findings suggest a significant role for PMHNP in both supporting primary care in treating chronic pain, and in helping patients with depression obtain better response to their treatment for depression.

Keywords: chronic pain, primary care, depression, mental health, biopsychosocial

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Role for PMHNP in treating Adults with chronic non-malignant pain and depression

Pain is defined as “An unpleasant sensory and emotional experience associated with actual or potential tissue damage, or described in terms of such damages” (International Association for the Study of Pain (IASP), 2011). According to the National Institutes for Health (NIH, 2010), pain affects 76.2 million adults, approximately one of every 4 adults in the U.S. A study released in 2011 by the Institute of Medicine (IOM) cites the number as closer to 100 million adults. Pain (combined as acute and chronic) is reported as the number one reason adults seek medical help from primary care, generating up to 80% percent of all primary care visits (Gatchel, 2004 & NIH, 2010).

Chronic nonmalignant pain, generally considered pain lasting 3 months or longer, and not as a result of cancer, is viewed as one of the most complex conditions a primary care practitioner will treat (Bair, Robinson, Katon & Kroenke, 2009; Frohm & Beehler, 2011; Gatchel, Peng, Peters, Fuchs & Turk, 2007). One factor contributing to the complexity of treatment for chronic pain is the rate of comorbid mental health issues including depression associated with chronic nonmalignant pain (Bair et al., 2009). A qualitative study conducted by Bair et al. (2009) identified ten barriers adults face in developing effective self-care strategies for managing pain, one of which was depression. Four facilitators to achieving improved pain control were identified, one of which was effective treatment of depression (Bair et al., 2009).

While any relationship between chronic nonmalignant pain and depression continues to generate debate, what is not debated is that treatment of one diagnosis significantly affects treatment of the other (Bair, Robinson, Katon & Kreonke, 2003; Bair

et al., 2009; Gatchel, 2004; Gatchel et al, 2007; Moitra, Sperry, Mongold, Kyle & Selby, 2011). Depression affects 5-17% of the general population; this percentage jumps to 30-54% in the population of patients also diagnosed with chronic pain (Bair et al., 2003; Banks & Kern, 1996; Moitra et al., 2011). A diagnosis of chronic pain has been shown to prolong recovery for depression, and reciprocally ineffectively treated depression decreases effective treatment of chronic pain (Romano & Turner, 1985; Bair et al., 2003; Kroenke, Shen, Oxman & Dietrich et al., 2008).

Current research supports a biopsychosocial, inter-disciplinary approach to chronic nonmalignant pain (IOM, 2011). Despite the research and recommendations for this approach, chronic nonmalignant pain continues to be approached from a primarily biomedical model (Gatchel, 2007). Even when a patient is fortunate enough to be sent to an interdisciplinary pain clinic, the approach remains primarily biomedical in that a patient is prescribed medications or provided with invasive treatments by medical doctors for physical complaints and then provided with services such as group therapy or evaluation by a psychologist for coping strategies (Gatchel, 2007). Patients are treated by two models rather than from a truly biopsychosocial model (Gatchel, 2007).

With the growing recognition of the relationship between mental health and chronic pain, psychologists are proposing that they ought to have increased involvement as leaders in managing chronic pain (Brown & Folen 2005; Frohm, 2010; Gatchel, 2004; Gatchel et al., 2007; Kroenke et al., 2007; Turk & Burwinkle, 2005). This argument is based on the idea that psychologist have the scientific knowledge to address pain as a nerve disorder as well as the knowledge and skill to apply appropriate mental health diagnoses and psychotherapy for comorbid mental health disorders (Turk & Burwinkle,

2005). Included in this discussion regarding the increased role for psychologists is the role that licensed mental health therapist and social workers fill in helping patients with chronic pain manage psychosocial issues (Turk, 2005). While these disciplines certainly have a vital service and role to fill, literature continues to demonstrate a need for a health care provider who can address mental health such as depression as well as the medical aspects of chronic pain. Psychiatric Mental Health Nurse Practitioners (PMHNPs) may fill this gap between the medical and mental health fields using a biopsychosocial model. Using the biopsychosocial model, PMHNPs can address both the biomedical needs and the psychosocial issues of patients dealing with depression and chronic pain (Fig.1).

Statement of purpose

Chronic non-malignant pain (*chronic pain*) is one of the most prevalent disorders for which patients seek primary care. Chronic pain is considered one of the most complex primary health concerns. Depression is a compounding factor in managing chronic pain, and pain is a compounding factor affecting the treatment of depression. Current research supports a biopsychosocial approach as the most effective method for treating both chronic pain and depression. The purpose of this paper is to explore benefits that PMHNPs offer to patients suffering from chronic pain and depression.

In an effort to provide context for this paper, certain terms should be discussed. Rather than discuss any specific diagnosis within the arena of chronic pain, this paper looks at chronic pain as a diagnosis in itself regardless of the original cause or onset. Chronic pain as a diagnosis is considered to be a dysfunction of the normal pain response (Caudill, 1994; IASP, 2011 & McCaffery, 1999). Chronic pain is defined as pain that extends beyond the usual healing time, and is often considered to be pain lasting longer

than 3 months (Caudill, 1994; IASP, 2011 & McCaffery, 1999). Using this definition, the focus of developing a treatment plan is based less on the cause of injury and more on chronic pain as a multifaceted disorder requiring complex treatment (Caudill, 1994; IASP, 2011 & McCaffery, 1999). Chronic pain is different than acute pain in that acute pain is often considered a short-lived experience and the treatment is focused on removing or otherwise alleviating the underlying cause of the pain (Caudill, 1994; IASP, 2011 & McCaffery, 1999). Acute pain is expected to resolve as the underlying condition is cured, such as a fractured arm or a burn that heals (Caudill, 1994; IASP, 2011 & McCaffery, 1999).

A second condition discussed in this paper is depression. Depression is a mood-disorder diagnosed through careful screening and recognition of a specific set of symptoms (American Psychiatric Association (APA), 2000). Symptoms of depression include depressed mood, sadness, interrupted sleep, changes in appetite, lack of motivation, feelings of worthlessness, and fatigue (APA, 2000). Depression is responsive to treatments including medication and psychotherapy (APA, 2006). People with chronic medical disorders can also display symptoms of depression with or without having a mood disorder (Bair, Robinson, Kanton & Kroenke, 2003). Diagnosing depression can be difficult in the population of the chronically ill including the population of patients with chronic pain (Bair et al., 2003). This difficulty in differentiating between depression and chronic pain arises from the similar symptoms often reported by people living with chronic pain; low mood, fatigue, lack of enjoyment in life, interrupted sleep, appetite changes, and feelings of worthlessness (Bair et al., 2003). Additionally, for those patients suffering from chronic pain and depression, effective treatment of either disorder can be

strongly dependent on effective treatment of the other disorder. This review will explore a possible role for PMHNPs as primary health care providers for patients suffering from both chronic pain and depression. Studies suggest that effective management of chronic pain must include evaluation and treatment of depression. PMHNPs may be an ideal fit to evaluate and treat depression, contributing to the effective treatment of chronic pain.

Literature Search Strategies

Using the online library resources at Washington State University multiple databases were accessed including PubMed, CINAHL (EBSCO), Cochrane library (Wiley) and PsycARTICLES. Initial search terms were *mental health, chronic pain, depression, primary care, NP, PMHNP, and pain management*. Search parameters used were *academic journals and peer reviewed*. Initial search parameters also included date for current literature, 2000 and forward, but as current literature continued to cite older literature including into the 1980's the parameters were widened to include 1975 and forward. Google was used as a search engine for finding data on specific health websites; National Institute for Health (NIH), World Health Organization (WHO), Center for Disease Control (CDC), International Association for the Study of Pain (IASP) and The American Academy of Pain Medicine (AAPM) as they were cited and referenced in multiple articles.

Conceptual Framework

Chronic pain as a biopsychosocial disorder appears to more thoroughly explain this complex condition than a biomedical model and provides more options for multifaceted treatment of chronic pain than does a biomedical approach to treatment. The biopsychosocial framework (Fig.1) can be applied by advanced practice nurses working

with the population of patients suffering from chronic pain and depression. Chronic pain (regardless of underlying cause or diagnosis) has defied the biomedical approach to therapy.

PMHNPs as nurses are skilled in assessments and the application of nursing therapies for biological disorders whether physical, neurological, or psychological. Advanced practice nurses are also in a position to diagnose, and in many states prescribe, either independently or with physician supervision. Advanced Nurse Practitioners,

whether in mental health, family practice,

or specialties are trained in

nursing models that approach

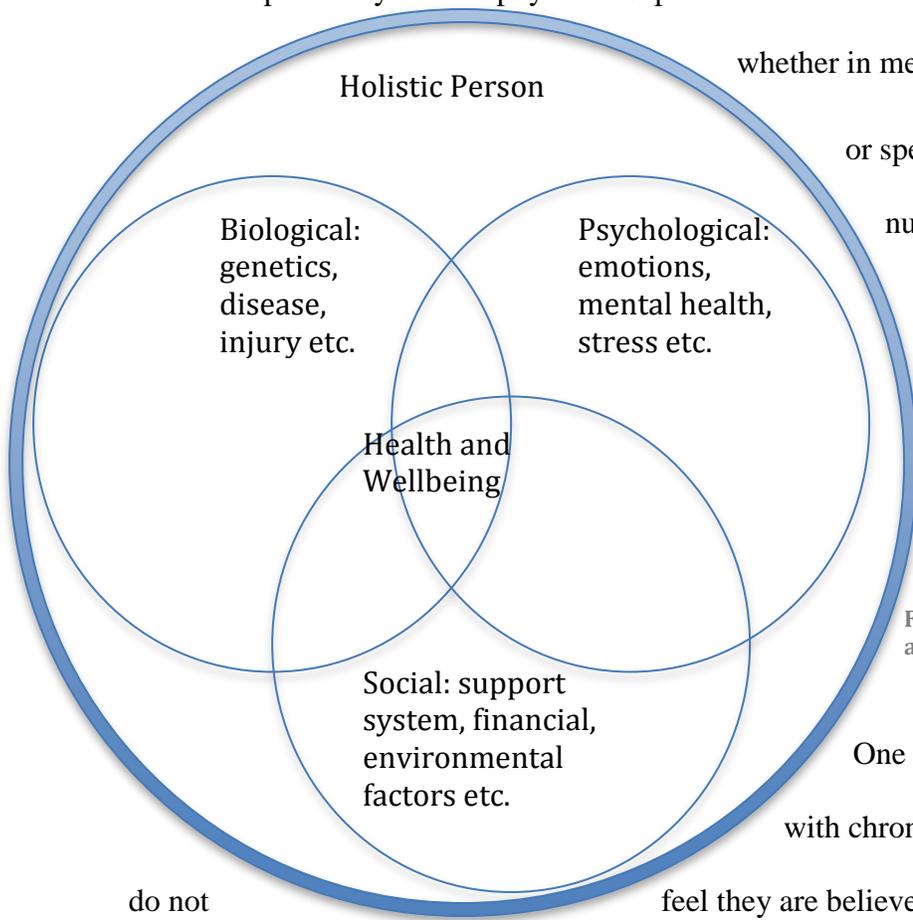
a patient's health and well-

being from

biopsychosocial

perspective.

Figure 1 Biopsychosocial approach to Health



One frequent complaint patients

with chronic pain report is that they

do not

feel they are believed by health care providers

to be suffering from pain and may even be malingering. Approaching this patient

population from a humanistic perspective may benefit them through acceptance and

belief that the pain they suffer from is legitimate, and through applying a biopsychosocial

approach to them as holistic persons.

Literature Review Organization

Literature was organized by first looking from the perspective and impact of pain on the health care system as a whole. Focus then moved to the complexity and barriers of managing chronic pain in primary care followed by the connection between chronic pain and depression. Discussed next are the role of mental health providers and the benefit of explaining and approaching chronic pain and depression from a biopsychosocial model and finally a potential role for PMHNPs in working with this population.

Chronic Pain In The US

In 2010 the National Institute of Health (NIH) released a fact sheet regarding the impact of chronic nonmalignant pain on the US economy and the health care system. Pain is cited as affecting more Americans than diabetes, heart disease, and cancer combined and is credited as being the number one reason compensation for long-term disability is sought (NIH, 2010). It is not surprising then that pain is reported as the number one reason people seek ongoing medical care from primary care providers (Bair et al., 2009). The cost of pain on the health care system, estimated to be \$70 billion, combined with the cost to the economy in lost productivity, was estimated in 1998 by the NIH, to be \$100 billion annually (Lippe, Brock, David, Crossno & Gitlow, 2010). Lippe et al. (2010) proposed that with the cost of health care having doubled since 1998, this total cost may have now reached over \$200 billion (Lippe et al., 2010).

Among the population of patients suffering from chronic pain are the population of people aged 50 or older; research suggests that this demographic is twice as likely to

suffer from chronic pain conditions (Gatchel et al., 2007). In 2007, the number of people aged 50 and over was estimated at 35 million Americans, 12.5% of the total population; this number is expected to reach 57% of the total population by the year 2030 (Gatchel et al., 2007). With this projected jump in the population of people who will need care and treatment for chronic pain, it can be expected the estimated cost will also rise drastically.

The rising financial cost and the impact of chronic pain on lives has led to chronic pain as a health condition being identified as a target for improved treatment by multiple organizations including the NIH, the American Medical Association (AMA), and the Department of Health and Human Services (DHHS) (IOM, 2011 & Lippe et al., 2010). In response to the growing concern related to the cost and ineffective treatment of chronic pain, the AMA called a summit-meeting in 2009 (Lippe et al, 2010). This committee arrived at five core issues that needed to be addressed in order to improve the care and treatment of chronic pain and reduce cost (Lippe et al., 2010). The first identified issue was the education of primary care providers regarding chronic pain (Lippe et al., 2010). The remaining four concerns centered on how to educate health care providers about chronic pain (Lippe et al., 2010). In the summary it is stated that primary care providers lack basic understanding of the difference between the function of acute pain and the condition of chronic pain (Lippe et al., 2010).

The IOM was similarly tasked by the DHHS in response to *The 2010 Patient Protection and Affordable Care Act* to provide a comprehensive guide for the treatment of chronic pain (IOM, 2011). The study resulted in a 364-page document outlining a comprehensive approach to the management of chronic pain. This group also identified education as a core issues and added the need for a multidisciplinary approach (IOM,

2011). This publication provides an outline for an interdisciplinary approach to caring and treating the *person* with chronic pain rather than trying to simply address pain. As stated in the report by Lippe et al. (2010) inadequately treated pain can become a vicious cycle that affects not only the patient's physical ability, but also a patient's mental, and emotional health as well as impacting systems the patient interact within, including family, and extending into the society in which the patient lives (Lippe et al., 2010). The IOM guidelines state that if chronic pain is to be treated effectively, a multidisciplinary approach that includes treatment for mental health conditions must be addressed as part of the treatment plan for chronic pain (IOM, 2011).

The World Health Organization (WHO) recognized the impact of chronic pain on the overall health and wellbeing of the people suffering from chronic pain, and the resulting cost to health care and society, and had similar recommendations as the IOM (WHO, 2008). Their recommendations outlined the same two main concerns the IOM found in current treatment for chronic pain and emphasizes the need for a biopsychosocial, inter-disciplinary approach to managing chronic pain (WHO, 2008). Underlying the importance of the IOM findings and suggestions, the WHO strongly recommends that in addition to the pharmaceutical, which is reported to have very limited effect for many, providers must also address the psychological aspects of chronic pain.

Each of these reports from the AMA, IOM and the WHO place the need for mental health support as essential for patients living with chronic pain (Lippe et al., 2010; IOM, 2010; WHO, 2008). Addressing depression is not simply an adjunct, but a response to the fact that chronic pain is a change to the nervous system that affects mood and mental health (IOM, 2010). Unfortunately, despite these reports and numerous studies

supporting a multidisciplinary approach to chronic pain, the treatment of chronic pain continues to be addressed from a biomedical and acute pain treatment model (Gatchel et al., 2007).

Treatment of Chronic Pain In Primary Care

Research findings have led to the acceptance of chronic pain as a disease of the nervous system versus the normal response of the nervous system to noxious stimulus (Lippe, 2010). Despite chronic pain being recognized by scientist and medical researchers, medical training does not differentiate between chronic pain, a maladaptive nervous system response, and acute pain, a necessary and functional response of the nervous system, a symptom of injury or disease (Lippe, 2010 & IOM, 2011). Lippe et al. (2010) found that “in most medical school education, pain is not acknowledged as a chronic disorder, but rather treated as a symptom...” (p. 1450). Medical providers are trained in the use of a biomedical model to treat acute pain, find the cause of the symptom, and treat with medication, surgery, or other medical intervention (Lippe, 2010 & IOM, 2011).

While the literature reviewed discusses the use of a biopsychosocial model, most articles focused on the use of opioids; one example of a study entitled “Care for Patients with Chronic Nonmalignant Pain with and *without* Chronic Opioid Prescription” (italics added for emphasis) discussed the use of opioids almost entirely (Elder, Simmons, Regan & Gerrety, 2010). A second study reviewing the need for systematic approaches to addressing comorbidities including psychiatric and mental health needs of chronic pain patients in primary care, again focused on the issue of opioid use (Jackman, Purvis & Mallett, 2008). A third article reviewing recommended treatments of chronic pain

mentions the use of antidepressants, but discusses the use of these medications for their potential analgesic properties and not from the need to evaluate or address possible underlying depression which is mentioned as a comorbid condition (Bruckenthal, 1998). Depression was discussed as a comorbid condition in the population of patients with chronic pain but rarely was treatment of depression as a treatment for chronic pain discussed. Vijayaraghavan, Penko, Guzmanm Miaskowski & Kushel (2012) conducted a study to review the attitudes of primary care providers toward chronic pain, specifically in the population of patients with chronic pain who were supported by the government healthcare safety net. Primary care providers were interviewed and it was found that primary care providers felt less confident and less satisfied with caring for patients with chronic pain than any other chronic condition (Vijayaraghavan et al., 2012). Most of this dissatisfaction and lack of confidence had to do with the complexity of prescribing opioids (Vijayaraghavan et al, 2012). While Vijayaraghavan et al. addressed the complexity of caring for this population, the focus was on how to increase provider confidence and improve patient outcomes by educating providers regarding prescribing opioids rather than addressing how to treat the condition of chronic pain (Vijayaraghavan et al., 2012). Though mental health and addiction issues are mentioned, it is concluded that through better education surrounding opioid prescribing, providers will also gain confidence in working with this population of patients with chronic pain and mental health issues (Vijayaraghavan et al., 2023). A study conducted by Kirby, Dunwoody & Millar (2009) looked at what patients with chronic pain wanted most from their primary care providers was empathy and support around psychosocial concerns, creating a biopsychosocial approach (Kirby et al., 2009).

A study evaluating barriers faced in primary care was conducted by Bair et al. (2009) in which depression was identified as one of the top ten barriers primary care providers encounter in developing effective treatment plans for patients with chronic pain. Bair et al. (2009) further discuss that while depression is recognized as a major barrier to effective treatment, primary care providers consistently do not address depression, focusing their efforts on medication use for pain. From the review of the literature it appears that while primary care providers can recognize that patients with chronic pain might also have depression, treating the depression is not given priority. According to Gatchel et al. (2007), the IOM (2011), and the AMA (2010) summit report, this avoidance and failure to address depression in chronic pain is related to these three issues; a lack of education in primary care regarding chronic pain and depression, a lack of resources available to primary care to manage patients with chronic pain and comorbid depression, and the underlying belief systems that continue in our society related to chronic pain (Lippe, et al., 2010). The medical approach to chronic conditions including chronic pain remains that of a biomedical rather than a biopsychosocial model.

Role of Nurses in Pain Management

Literature from the nursing perspective, written by nurses for nurses, appeared to have a slightly more balanced approach in addressing the needs of patients with chronic pain from a biopsychosocial model. One article (written by an MD) even argues for an increasing role for nurse practitioners (NPs) and physician's assistants (PAs) in managing chronic pain (Schneider, 2008). Though Shneider (2008) focuses the argument on how NP's and PA's can fill a needed gap for this population of patient, specifically in

medication management, the role they have in meeting these patients' needs from a humanistic perspective, with empathy and respect, is also discussed (Shneider, 2008).

Droes (2004) conducted a review of literature related to NPs and pain management and found that NPs faced two main issues, one was a lack of awareness or education regarding pain the other being differences in local practice environments related to prescribing privileges. NPs lack of education regarding chronic pain continues to exist at the same level that McCaffery & Pasero (1989) found nearly 2 decades earlier (Droes, 2004). McCaffery & Pasero (1989) report that patients are viewed as over reporting their pain, seeking drugs (opioids), or possibly malingering. This lack of knowledge regarding pain fed directly to the second finding of prescribing practices; when NPs addressed chronic pain the focus was the use of medication; most often opioids (Droes, 2004). When a patient with chronic pain was referred to a specialist it was often to address issues regarding opioid use such as concern the patient may be suffering from addiction (Droes, 2004). When the rare referral was made to Mental Health providers for chronic pain it was often with the assumption patient was malingering (Droes, 2004). These findings continue to support McCaffery and Pasero (1989) in that misconceptions or lack of education lead to beliefs about pain that are not supported by research (Droes, 2004; McCaffery & Pasero, 1989).

A study consisting of chart reviews of patients treated by NPs for chronic pain, found that the majority of patient visits in primary care are related to pain, that chronic pain is complex, that depression was identified in many patients, that depression was not specifically addressed, that NPs in primary care lack the education and or knowledge to address chronic pain, and that opioids were used at high rates in an effort to treat chronic

pain (Creech et al., 2011). Creech et al. (2011) identified that among the needs for NP practice was a better process for screening, identifying, and treating depression. The issue of practitioners focusing on a biomedical explanation and treatment for pain was supported by their findings (Creech et al., 2011).

There are many nursing articles focusing on the benefits nurses, including advanced practice nurses, offer to the population of patients with chronic pain. From reduction in cost of care to improved patient outcomes, having nurses involved in patient care in an advanced role has shown to have a positive impact on patient care (Shaw, 2006; Shneider, 2008; Wells-Federman, 2000 & Wells-Federman & Caudilil, 2002). In the area of chronic pain, roles for advanced practice nurses range from support roles to roles as primary care providers (Droes, 2004; Creech et al., 2011, Kaasalainen, Martin-Misener, Carter, DiCenso, Donald & Baxter, 2010; Wells-Federman, 2000;). Schneider (2008) identified a role for NPs mostly in the area of assessments of pain, managing medications and follow up care. While these are good roles for NPs, and a role that according to the literature they do well, there is evidence that treatment outcomes for chronic pain would be significantly improved with better evaluation and treatment of depression (Kroenke et al., 2008).

Chronic Pain From the Mental Health Perspective

Comorbid Chronic Pain and Depression

While literature from the medical care perspective on treating chronic pain lacks discussion regarding appropriate treatment of comorbid depression and chronic pain, literature and studies in the area of mental health is abundant with literature recognizing chronic pain and depression as comorbid conditions (Bair et al., 2003; Banks & Kerns,

1996; Brown, 1990; Gatchel, 2004; Kronenke et al., 2008 & Lee & Chan, 2007; Poleshuck et al., 2010; & Romano & Turner, 1985).

Romano and Turner (1985) reviewed available research looking specifically at the rate of depression in chronic pain. They report that although studies they analyzed varied in method, they consistently found a higher rate of depression in the population of patients suffering from chronic pain versus depression in patients with other chronic conditions or in primary care patients in general (Romano & Turner, 1985). Depression symptom rates cited by Romano and Turner state that among the general population, depression ranges from 13-20%, while symptoms of depression among those with chronic pain, depending on the study method, affected between 31-100% of patients (Romano & Turner, 1985). This study also analyzed available data regarding reports of chronic pain among the population of patients being treated for depression and found that 57% reported at least some level of pain (Romano & Turner, 1985). The authors are careful not to assign causality, rather attempting to highlight the association between chronic pain and depression and emphasize the need for further study (Romano & Turner, 1985). Brown (1990) reviewed the literature again looking at the association between chronic pain and depression and found that the latest studies supported the high rates of depression found by previous researchers (1985). Brown (1990) was as careful as Romano and Turner (1985) not to assign causality, but once again confirmed the strong association.

Current literature adds questions regarding the relationship between chronic pain and depression, looking at specific symptoms and definitions of depression compared to other chronic conditions (Banks & Kerns, 1996). In 1996 Banks and Kerns looked at the

rate of depression in chronic pain patients, comparing the rate of depression symptoms experienced before the onset of chronic pain, and after the onset of chronic pain, they then compared these findings to the rates of depression in other conditions of chronic illness such as diabetes, cardiac disease and stroke survivors (Banks & Kerns, 1996). Banks and Kerns (1996) found that by applying the criteria for major depressive disorder, the rate of depression was lower than the study completed by Romano and Turner (1985), finding that the rate of depression was 30-54% versus the 31-100% found in earlier studies. Notwithstanding the variance in rates of depression between these two studies, the rates of depression remain significantly higher than the general population and significantly higher than those with comorbid depression and other chronic illnesses (Banks & Kerns, 1996). According to Banks and Kerns (1996) the rate of Major Depressive Disorder among post MI patients was cited as 14-18%, among cancer patients the cited rate was 4-23%, among patients with neurological disorders such as post-stroke or Parkinson's the rate varied from 14-27% and for patients with diabetes the rate was cited as 10% (Banks & Kerns, 1996). The question then posed was "What is unique about chronic pain?" that these patients should be at such high risk for depression (Banks & Kerns, 1996, p. 99).

Gatchel et al. (2004) cited the WHO when looking at the rate of co-morbid depression and chronic pain and reported that among patients with chronic pain, depression is 4 times as likely to occur than in the general population, and that this rate is consistent across cultures (Gatchel et al., 2004). Gatchel et al. (2004) underscore the statistic that 80% of all primary care visits are related to pain and that this population has a fourfold risk of developing major depressive disorder. While years of research and data

repeatedly demonstrate a significantly higher rate of depression among chronic pain sufferers compared to other chronic illnesses, the reason for this difference remains elusive (Banks & Kerns, 1996; Gatchel et al., 2004; & Romano & Turner, 1985).

Research on the association between the impact of chronic pain on the treatment of depression has also been conducted (Kroenke et al., 2008). Kroenke (2008) found that among the population of patients being treated for depression, 42% responded positively when asked if they also experienced chronic pain prior to treatment of depression (Kroenke et al., 2008). Kroenke et al. (2008) focused their study on possible affects of pain on response to depression treatment and vice versa how depression affects treatment of chronic pain. Results support that when one condition is left untreated; treatment of the other condition is negatively affected, meaning less effective treatment for either condition (Kroenke et al., 2008). The RESPECT trial run by Kroenke et al. (2008) looked at placebo and blinded studies of patients who were being treated for one condition and not another or being treated for both; the results consistently showed that “co-occurrence and reciprocal adverse effects suggest it no longer makes sense to treat one without considering the other... treatment of one condition may also benefit the other...” (Kroenke et al., 2008, p.213). Bair et al. (2003) conducted a literature review on the relationship between depression and chronic pain and arrived at several conclusions; one was regarding the recognition of patients with dual diagnosis of chronic pain and depression (Bair et al., 2003). It seems that due to patients displaying similar symptoms when suffering from chronic pain as they do when suffering from depression, primary care providers are finding it difficult to differentiate and diagnosis true depression (Bair et al., 2003). This finding would suggest that a strong argument might be made for having

professionals such as PMHNPs who are educated in identifying, diagnosing and treating depression and chronic pain, available as support for primary care providers in an effort to improve patient outcome and reduce cost and burden to the patient and the health care system.

Biomedical Versus Biopsychosocial Treatment of Chronic Pain

Gatchel et al. (2007) neatly summarized competing theories and years of research attempting to explain chronic pain. The understanding of pain has evolved and changed with modern science and pain is now seen as more complex than simply a physiological response to stimuli (Gatchel et. al., 2007). The idea that pain is the simple transduction of noxious stimuli into transmission signals that are modulated by the nervous system and then perceived by the person has not been sufficient to explain the ongoing phenomenon that is chronic pain (Gatchel et al., 2007). Modern medicine and societal views of pain have built on theories first developed by ancient philosophers and scientists (e.g. Hippocrates, Aristotle), ideas of pain being a punishment, or evil spirit, or imbalance of vital fluids, or Descartes theory of “gate control” in the nervous system, can still be recognized in modern approaches and beliefs about pain (Gatchel et al., 2007).

Pain has historically been treated by attempting to address either the “spirit” or mind, or by addressing the noxious stimuli either through removal of the cause of injury or interrupting the pain signal through medications and other blocking methods (Gatchel et al., 2007). A biomedical approach to pain management attempts to explain chronic pain from a physiological perspective using medications or surgery or other therapies to remove or interrupt pain (Gatchel et al., 2007). A psychological approach to pain attempts to explain pain as a mental health disorder (Gatchel et al., 2007). This approach

has often led to stereotyping chronic pain patients as being depressed, drug seeking, somaticizing, hypochondriacs, or as suffering from other “mental” issues (Upsher, Bacigalupe & Luckman, 2010). Gatchel et al. (2007) cites George Engle (1977) as being one of the first to develop a “dualistic” approach to illness and health rather than from the reductionist view. George Engle approached sickness or health as involving both the body and mind, both an illness and a disease model (Gatchel et al., 2007). This approach is now more commonly called the biopsychosocial model (Gatchel et al., 2007).

A biopsychosocial approach to chronic pain addresses chronic pain from three perspectives; the biological, including nociception, genetics, other comorbid disease processes, the psychological, such as cognition, mood and other mental health comorbidities, and the social, including the persons function, support and expectations (Gatchel et al., 2007). A biopsychosocial approach does not mean each of the components are treated as separate issues but rather viewed as interconnected and impacting each arena (Gatchel et al., 2007). This approach more completely explains the complexity of pain. For primary care providers this can also add to the complexity of treatment (IOM, 2011).

Recently, practitioners in the field of psychiatry have taken more of an interest in a role specifically in the treatment of chronic pain (Turk et al., 2005). In 2005, Turk et al. reviewed the literature on the prevalence of pain and the complicating factors including physical, biological, psychological and behavioral and reviewed the recommendations for treatment of this complex condition. Recommended strategies were outlined using the idea of a team approach, stating that chronic pain requires restoration of the person’s well-being not simple relief of symptoms (Turk et al., 2005). Brown and Folen (2005)

looked at the team approach to pain management and supported the need for mental health as part of the team. Brown and Folen (2005) suggested that while psychologists should play a role in treating this population, the efficacy of psychologists on a team treating chronic pain might be greater if they had additional training in medical conditions. Both Turk et al. (2005) and Brown and Folen (2005) discuss the lack of biomedical knowledge in the field of psychology in relation to treatment of chronic pain patients from a biopsychosocial approach, both agree that this lack of medical training may be a gap in addressing chronic pain. Recommendations for treatment of chronic pain have evolved from being approached as either a biomedical or psychosocial issues; rather recommendations are that treatment of chronic pain will require a much more holistic approach to the human being, their body, mind and even social concerns. The question now seems to be how to accomplish this more integrative approach; who should be involved and at what stage. Psychologists argue that this should be a role for them; medical providers question whether psychologists have the medical background to address the bio-medical issues of chronic pain; this could be an opportunity for PMHNPs with the education to address patients from a biopsychosocial model to help patients living with chronic pain and depression.

Significance for PMHNP

According to the Center for Disease Control (CDC) (2011), and the National Institute of Mental Health (NIMH) (2008) depression affects about 10% of the population and is the disorder most diagnosed and treated by mental health therapist's in the US. For PMHNPs treating depression understanding that at least 42% of the population of patients with depression also suffer from chronic pain, could have implications for the approach

to treating this specific population of patients (Kroenke et al., 2008). PMHNPs may be in a distinctive position to employ the biopsychosocial model that research has suggested as the most successful in helping chronic pain patients with depression. Kroenke et al., (2008) and Gatchel et al., (2007) demonstrated that effective treatment of one condition positively affects other. Turk et al. (2005) and Brown & Folen (2005) both concluded that psychologists have a role in helping patients manage their depression but suggested they lack the biomedical knowledge to help with the medical aspects of chronic pain.

McCaffery & Pasero, (1989), Droes, (2004) and Creech et al. (2011) among others have suggested that primary care providers focused on the biomedical may not be, for various reasons, in the best position to help deal with the psychosocial aspects of chronic pain.

PMHNP's could meet the need of providers to address both the medical aspects of chronic pain while at the same time addressing depression. This approach would meet the need, suggested by IOM (2011), of medical providers to understand medical and mental health disorders and how the two intersect. PMHNP's have the education to perform comprehensive screening and apply appropriate treatments for depression. They have also been educated on the biomedical approaches to treatments of medical disorders. As advanced practice nurses who are skilled and educated to perform the tasks of evaluation, diagnosis, and treatment, as well as having the additional education in mental health disorders such as depression, it would seem PMHNPs have a role to fill.

As a support person to primary care, patients with chronic pain lasting at least three months, could be referred to a PMHNP for evaluation and treatment of depression with the explanation that in order to improve the outcome of their pain treatment plan, a team approach has been shown to have the best outcome. Primary care NPs and PMHNPs

could work together as teams to improve the effectiveness of any treatment for chronic pain including the reduction of opioid use. PMHNPs might also act as support in the area of evaluating and treating addiction disorders. In addition to support of primary care, PMHNPs should be alert to when patients suffering from depression need referral to, or assistance with, obtaining help for possible chronic pain disorders. As advanced practice nurses, they are capable of performing evaluations including physical assessments and placing appropriate referrals.

Conclusion

Studies previously reviewed in this article indicate that approximately 47% of those with depression also suffer from chronic pain. Reviewed studies also demonstrate that lack of effective treatment of chronic pain affects the efficacy of treatment of depression. Psychiatric nurse practitioners trained in biomedical and biopsychosocial approaches, may be in an ideal position to address the population of chronic pain patients. Not only can they understand and address the biomedical approaches used to treat chronic pain, but they can also understand and address the patient's psychosocial needs.

The latest's recommendations offered by the IOM cite the biopsychosocial approach and list medical doctors and other primary care providers such as nurse practitioners, psychologists, social workers, and physical therapists, as valuable members of the team helping chronic pain patients. Nurses are listed as team members to help educate patients on self-care (IOM, 2011). PMHNP's are not mentioned as providers for patients with chronic pain and depression.

Defining what this role should be will require further evaluation. Nurse practitioners including PMHNP's may prescribe in many states. Whether or not PMHNP

should prescribe opioids as part of the treatment strategy for patients with chronic pain and depression or simply evaluate for and treat the depression while in close collaboration with a PCP would need to be reviewed. With no literature found regarding PMHNP working with chronic pain, research exploring the comfort level of PMHNPs working with chronic pain is needed. Data suggests that medical providers including nurse practitioners lack basic understanding of chronic pain; it is likely this holds true for PHMNP's. This article was intended to argue for a potential important role for PMHNP in treating patients with comorbid depression and chronic pain. The review of literature was limited specifically regarding PMHNPs in working with chronic pain, but plenty of literature exists to support that depression and chronic pain are often found in the same population and that poor treatment of one affects the other. Literature supports the benefit of advanced practice nurses in caring for the chronically ill, including chronic pain. It may be that PMHNPs are just behind in addressing this issue. More research is needed regarding what the role would look like and what kind of training needs to happen. The IOM (2011) has drafted a handbook for the treatment of chronic pain that addresses these issues and could be applied to PMHNPs working with this population.

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Appendix

A. Case Study

Susan Smith, a 43-year-old female nurse assistant, has an 8-month history of low back pain after repositioning a patient in bed. She is scheduled with her FNP for follow up care and a refill of her opioid. She was evaluated immediately after injury by an occupational medicine doctor and diagnosed with lumbar strain. Immediate treatment after injury was a 2-week period of rest with initiation of home stretches, ice, and NSAIDS. Her recovery appeared to progress more slowly than expected and she was reevaluated including imaging which was negative for any structural explanation of pain. She was prescribed a course of physical therapy but after first visit failed to continue treatment. She returned to work on a full time basis and after 3 months of occupational med therapy she was returned to her primary care provider for continued follow up care and treatment. She is currently prescribed Hydrocodone 5/325mg 1-2 tabs every 4 hours up to 4 tabs per day. She rates her pain as a 7/10 daily with an 80% interference with life. This visit is the 4th visit with her FNP for same complaint in 6 weeks.

At this visit Susan requests a referral for procedures, refill of Hydrocodone with an increase in number of pills and is asking for FMLA as she is no longer able to work full time. She also reports decreased engagement in daily household task and finds less enjoyment or motivation to work due to pain. Her eldest daughter is in attendance and is reported to be primary care giver of younger siblings as patient reports she is not able to drive or care for her younger children. The FNP recently attended a pain management seminar and learned that completing a depression and addiction screening can be important in developing safe and effective treatment plan for patients with chronic non-

malignant pain. Susan is asked to complete a depression-screening tool and is found to rate a moderately high risk of depression. She is scored low for addiction risk.

Susan is adamant that she is not depressed, just in pain and if she were given increased doses of hydrocodone her pain and general mood would improve. The FNP recognized that depression and chronic pain can display similar symptoms and that prescribing antidepressants as treatment for depression or pain or both can become complex. It is explained to Susan that, in order to safely continue prescribing opioids and to ensure that she is receiving the best and most up to date treatment of her pain, she will be referred to a PMHNP specializing in mood and pain disorders.

At Susan's first visit with the PMHNP, the practitioner spends time discussing the idea of chronic non-malignant pain and how the brain and pain work. Susan is assured that her pain is real and that like any persistent disorder will require multiple approaches to address. She is instructed in the use of a daily pain diary that includes options for noting mood and other issues such as sleep. A complete mental health assessment is done. Susan reports family history of depression on mother's side and an alcoholic father. She reports she has noticed suffering from periods of low mood since college. She cannot remember the last time she felt really good. At the time of injury at work she and her husband were struggling with separation. She was left with a mortgage and 3 children to raise as a single mother. She suffers from poor sleep, having trouble staying asleep both due to pain and worrying about her children. She feels guilty about not being a good mother. She also worries about what will happen if she is not able to work due to pain.

At next visit, the practitioner is able to review the pain diary with the patient. Susan is able to recognize that she notices an increase in her pain intensity when she is

under increased stress. She had several arguments in last week with her estranged husband over childcare support and reports her pain was worse on those nights. It is explained that though her pain is real, her pain is affected by mood and other emotions. After additional screening and assessment she is diagnosed as suffering from major depression and general anxiety disorder and agrees to trial an antidepressant for mood. Susan and the PMNHP settle on an antidepressant with evidence of helping with myofascial pain. She is also started on Melatonin to help regulate sleep. The PMHNP and patient work on relaxation, deep breathing and cognitive behavioral techniques. After 3 months the patient reports an improvement in her mood, ability to cope and handle stress, and improved sleep. After reevaluation using the same depression-screening tool, Susan rates low risk for depression. Her pain is reported to be 4/10 with minimal impact on ability to engage in life. She is ready to start physical therapy and has reduced her use of Hydrocodone, which her FNP continued to prescribe in close communication with the PMHNP. Her current use of Hydrocodone is reduced to 1 tab 2-3 days per week. She has had one follow up visit with her FNP to update her opioid treatment plan; otherwise she has not required medical appointments. She has returned to work at reduced hours but has not called in sick for 8 weeks. She is happy to report she feels engaged in her children's lives and is coping with her divorce. She is attending a pain management course where she is learning to pace and use other non-pharmacological strategies such as acupuncture and other self-care tools to manage pain. She is able to see herself functioning without opioids in the near future. Susan is discharged from the PMHNPs care with the option to return if there are changes in mood.

In this case the patient was displaying symptoms of depression that could be attributed to pain as well. The PMHNP, after evaluation, was able to clearly diagnose a major depressive episode and chronic pain condition exacerbated by her depression. The PMHNP was able to help the patient move forward using a biopsychosocial approach to managing pain. The PMHNP approached the patient with empathy and did not tell the patient that pain was related to depression. The patient gained an understanding of how her body functions as a whole rather than as a single system or organ. The FNP and PMHNP collaborated on who was prescribing what medications and in developing a treatment plan that included patient self-care strategies that both the PMHNP and the FNP would be able to support. This collaboration between the FNP and the PMHNP fits the model of a biopsychosocial, inter-disciplinary, approach to care of a patient with chronic pain and depression.