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THE ASSOCIATION BETWEEN CHRONIC PAIN AND DEPRESSIVE SYMPTOMS AND IMPLICATIONS FOR PRIMARY CARE

By

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ABSTRACT

THE ASSOCIATION BETWEEN CHRONIC PAIN AND DEPRESSIVE SYMPTOMS AND IMPLICATIONS FOR PRIMARY CARE

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The purpose of this study was to describe the association between chronic pain and depressive symptoms in patients referred to a specific multidisciplinary pain management center. Research literature reports the percentage of chronic pain patients, with depressive symptoms, ranges between 16 and 100 percent. Data from this study will give useful information for day to day use in primary care clinics as well as chronic pain clinics. The sample size consisted of 35 adult patients. Pain intensity was determined subjectively by use of a 0-10 pain analogue scale with `0' being "no pain" and `10' being "the worst imaginable pain". Presence of depressive symptoms was determined through use of the Beck Depression Inventory. Results showed a negative correlation between pain duration and pain intensity. Incidence of depressive symptoms, although not statistically correlated with pain duration and pain intensity was found to be much higher than in the general population. Discussion includes implications for primary care providers which may reduce the suffering of patients who report pain and also have depressive symptoms.

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I would like to thank my family, John, Erin, and Angie for their support and understanding in this educational endeavor. I would also like to thank a very helpful advisory, Linda Beth Tiedje, who seemed tireless in her role to assist and educate.

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INTRODUCTION

The association between chronic pain and depressive symptoms has been well documented in research literature, (Dworkin, 1991; Romano, 1984) although the degree of association varies. Reportedly, anywhere from 16-100% of patients with chronic pain also have depressive symptoms (Magni, 1990; Parker, 1995; Romano, 1985), as compared to an estimated 9-14% of depression in the general population (Kaiser, 1990). These numbers are even more staggering when one considers there are approximately 65 million Americans suffering from chronic pain (Warfield, 1990). Using the lowest suggested rate of depression in chronic pain sufferers of 16%, it can be estimated that more than 10 million people suffering with chronic pain also have depressive symptoms. Early detection and effective treatment of depressive symptoms would also significantly impact the estimated $26 billion spent annually on treatment of depressive disorders (Preskorn, 1994).

There is growing agreement that the complete assessment of chronic pain requires evaluations in three dimensions: medical-physical, psychosocial, and behavioral-functional (Turk & Rudy, 1986). The main reason for evaluating for depressive symptoms is that the presence of depressive

symptoms has definitive treatment implications (Dworkin & Gitlin, 1991). It has also been suggested by Blumer and Heilbronn (1982) that an important contribution will be made to early detection and treatment of chronic pain, when chronic pain becomes a larger part of the curriculum in medical and nursing schools.

Given the high numbers of chronic pain sufferers, whether in primary care or in pain management centers, these numbers and the Agency for Health Care Policy and Research (AHCPR) guidelines for depression make a strong case to screen for depression. The intent of the AHCPR documents on depression in primary care are to provide a guideline for those primary care providers and nurse practitioners to assess and treat patients who present with depressive symptoms (AHCPR, 1993). The benefit for health care providers would be to have more information with which to guide treatment plans and to develop standards of care for chronic pain sufferers who are also depressed. Screening people who have chronic pain for depression could also dramatically decrease the amount of money spent on medical treatment and costs for morbidity and mortality associated with undetected and insufficiently treated depressive symptoms. Standards set by the Commission on Accreditation of Rehabilitation Facilities (CARF) indicate the need for the availability of psychological services for various types of chronic pain clinics, but do not specify screening as mandatory (Warfield, 1990). Pain clinics are not required

to be CARF accredited. Therefore, it is important to recognize the high incidence of depressive symptoms in chronic pain patients, screen (using appropriate guidelines), and refer when appropriate.

The purpose of this study is to determine the incidence of depressive symptoms among patients referred to a specific pain management program. Data were gathered to assess the association of depressive symptoms and chronic pain as perceived by the patient. Specifically, this study will examine the association between chronic pain intensity, duration of chronic pain and co-existence of depressive symptoms. The hypothesis is that chronic pain intensity and duration is moderately to highly associated with depressive symptoms. The following research questions will be addressed: 1) What is the relationship between chronic pain intensity and depressive symptoms; 2) What is the relationship between the duration of pain and depressive symptoms; and 3) What is the relationship between pain duration and intensity?

Implications for Advanced Practice Nurses in Primary Care and in chronic pain clinics include assessing for depressive symptoms in chronic pain patients and then developing individual patient care plans if depressive symptoms are found. The results can assist with planning care and planning to provide appropriate patient care resources. Patients currently referred to the pain management program where data were collected, are routinely

screened for depression. Obviously, results which document a substantial incidence of depressive symptoms could also bolster the need for more follow up, referral and treatment for depressive symptoms in chronic pain patients.

LITERATURE REVIEW

Conceptual Definitions

There are many definitions for the concepts of chronic pain and depression. For the purpose of this thesis, three concepts: pain, chronic pain, and depression will be defined.

Pain. Pain is described as an "unpleasant sensory and emotional experience associated with actual or potential tissue damage, or described in terms of such damage, or both" (sensory and emotional) (International Association for the Study of Pain, [IASP], 1979). There is interaction with parts of the brain (reticulolimbus) that regulate emotion, giving biological credibility to the association between pain and the co-existence of depressive symptoms (Parker & Wright, 1995). For the purpose of this study, pain will be defined conceptually using the IASP definition.

Chronic Pain. Chronic pain is any pain that endures past a normal healing time, or after tissue damage has apparently healed and pain persists (Watt-Watson & Donovan, 1993). This is one accepted definition. Others refer to specific time frames of pain duration, anywhere from 3-6 months, or when there are self reports of pain present for most of the days in at least 1 month out of 12 (Magni,

1993). An example of chronic pain would be a person who has back surgery for a ruptured disk. The tissue has healed. It is past a normal healing time, and the pain still persists. Therefore, pain that persists after tissue damage has healed, or in the absence of tissue damage, will be referred to as chronic pain.

Depressive symptoms. The word "depression" can be used to refer to a symptom or a collection of symptoms that are associated with a psychiatric disorder. The American Psychiatric Associations Diagnostic and Statistical Manual of Mental Disorders, fourth Edition, Revised (DSM-IV, 1994) describes depressive symptoms as diverse and varied from patient to patient regarding intensity, duration, and frequency. The implication for Primary Care Providers is to be aware of the symptoms and to know when to treat. A review of the depressive symptoms, as stated in the DSM-V are: 1) depressed mood most of the day; 2) diminished interest in activities; 3) unexplained weight loss or weight gain; 4) insomnia or hypersomnia; 5) psychomotor retardation or agitation (subjectively stated or observed); 6) fatigue; 7) feelings of worthlessness or guilt; 8) diminished ability to concentrate; and 9) recurrent thoughts of death or suicide. Depressive symptoms, for this purpose, will be defined as per the DSM-IV list. For a diagnosis of major depression to be made at least five of the symptoms must be present in a two week period. Some chronic pain patients will meet criteria for major depression, others will not.

Association of Chronic Pain and Depressive Symptoms

The association between chronic pain and depression is well documented with a great deal of research in the past decade. Therefore, this review will be confined to the last ten years. In an analysis of the first National Health and Nutrition Examination Survey, Magni, Caldieron, Rigatti-Luchini, and Merskey (1990) summarized that chronic pain and depressive symptoms occur together. This survey looked at 2,324 non-hospitalized patients in the general population. Presence of pain and depressive symptoms was determined through use of the standardized Center for Epidemiologic Studies Depression Scale (CES-D). There were 999 males and 1,325 females with an age range of 25-74 years. Of these 416 (160 males and 256 females) reported an existing chronic pain state. Forty-one percent (171) of those with chronic pain scored 16 or higher, which indicated an existing depressive state. In summary, in the Magni et al. (1990) study, anyone with a chronic health condition which impacted quality of life is at increased risk for depressive symptoms.

The association between chronic pain and depressive symptoms is also seen in chronic fatigue syndrome patients who often report chronic pain symptoms as well as exhibiting signs and symptoms of depression (Covington, 1991).

Depressive symptoms associated with arthritic conditions and conditions that effect the ability to carry out activities of daily living has also been reported.

Rheumatoid arthritic patients are diagnosed as "majorly" depressed as much as 34% of the time (Parker & Wright, 1995). Those afflicted with end stage joint disease are also at high risk for developing depressive symptoms (Roberts, Matecjyak, & Anthony, 1996).

The results of a self-reported depression profile survey by Kaiser, Middaugh, Kee, Levin, and Berndt (1990) indicate that there is a greater degree of depressive symptoms among chronic pain patients as compared with a control group. Even when variables such as age, income, social support and physical dependence were controlled, there was still statistically overwhelming evidence that separating the two diagnoses was not possible. The strong effect of pain remained after controlling for all the other variables. When age was considered, as in the survey conducted by Williams and Schulz (1988), statistical analyses indicated that pain was a critical factor in the association of chronic pain physical illness and existence of depressive symptoms.

The Relationship: Which Comes First--Pain or Depressive Symptoms?

With regard to chronic musculoskeletal pain the evidence supports the view that there may be a circular association: chronic pain begets depressive symptoms and depressive symptoms beget chronic pain (Magni et al., 1990). But which comes first, pain or depression is difficult to discern.

An important aspect to consider is that it is very difficult in patients with chronic pain to ascertain if the stress of living in the state of chronic pain has caused the depressive symptoms or whether an existing depressive disorder has contributed to the experience of chronic pain. Evidence that the two entities co-exist is that there are clinical similarities noted between chronic pain and depressive symptoms and that those diagnosed with chronic pain syndrome often report improvement when an antidepressant is given (von Knorring & Ekselius, 1994). Knowing the relationship exists may be helpful in understanding the disease process but determining direction of causality is beyond the scope of this thesis.

Critique of Literature

More research is needed to bring the comorbidity of chronic pain and depressive symptoms to the attention of health care communities, especially in primary care. Increased impact by world-wide pain organizations, such as the IASP, is needed to assist caregivers with the standardization of tools necessary for the complete assessment of chronic pain patients. Additional education of providers would necessitate an understanding of the association between chronic pain and depressive disorders (Blumer & Heilbronn, 1982).

There is a lack of information in literature regarding pain management protocols. Protocols are necessary to treat specific chronic pain diagnoses. These protocols would

differ by the type of chronic pain which is targeted. The challenge is to look for relevant subsamples to focus on specific treatment and outcomes (Magni, Moreschi, Rigatti-Luchni, & Merskey, 1994). Such a protocol developed for optimal outcome with head pain examined whether or not pain modification changed degrees of depressive symptoms (Williams & Schulz, 1988). With regard to direction of causality, only additional prospective studies with a narrowed focus would help sort out the relationship process of chronic pain and depressive symptoms (Magni, Marchetti, Moreschi, Merskey, & Luchni, 1993).

CONCEPTUAL MODEL

It is helpful in understanding the chronic pain/depressive symptoms association if viewed through a model that incorporates behavioral as well as cognitive concepts. Such a model was developed by Turk in 1986 (Turk & Rudy, 1986), with regard to the treatment of pain (see Figure 1). Using this model emphasizes that attention be paid to patients attitudes and beliefs regarding their pain, the availability of health care resources, patients behavioral responses and their reactions, as well as the reaction of significant others, to the stress of their chronic situation. The model allows for collaboration between patient and care provider based on its interactive nature (Turk & Rudy, 1986).

Beck (1976) felt that the existence of distorted cognitions and distorted beliefs contribute to the

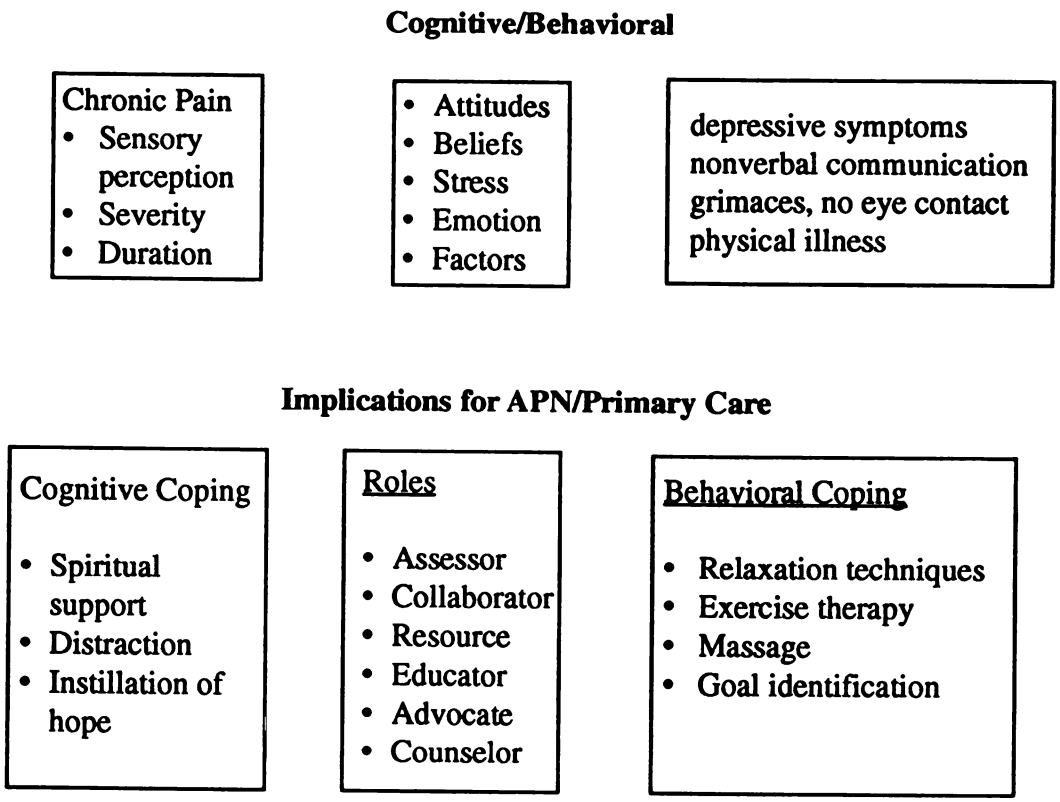

Figure 1. Behavioral cognitive perspective (Watt-Watson, 1992).

maintenance of symptoms of depression. A cognitive behavioral model by Watt-Watson and Donovan (1992), is adaptable to Turk's model (see Figure 1) and with further adaptation can specifically include symptoms of chronic pain and depressive symptoms (see Figure 2). The Watt-Watson model relies on the patient's perspective and interaction of emotional factors, sensory phenomenon and behavioral responses. This model becomes reciprocal when it is realized that the patient responds either positively or

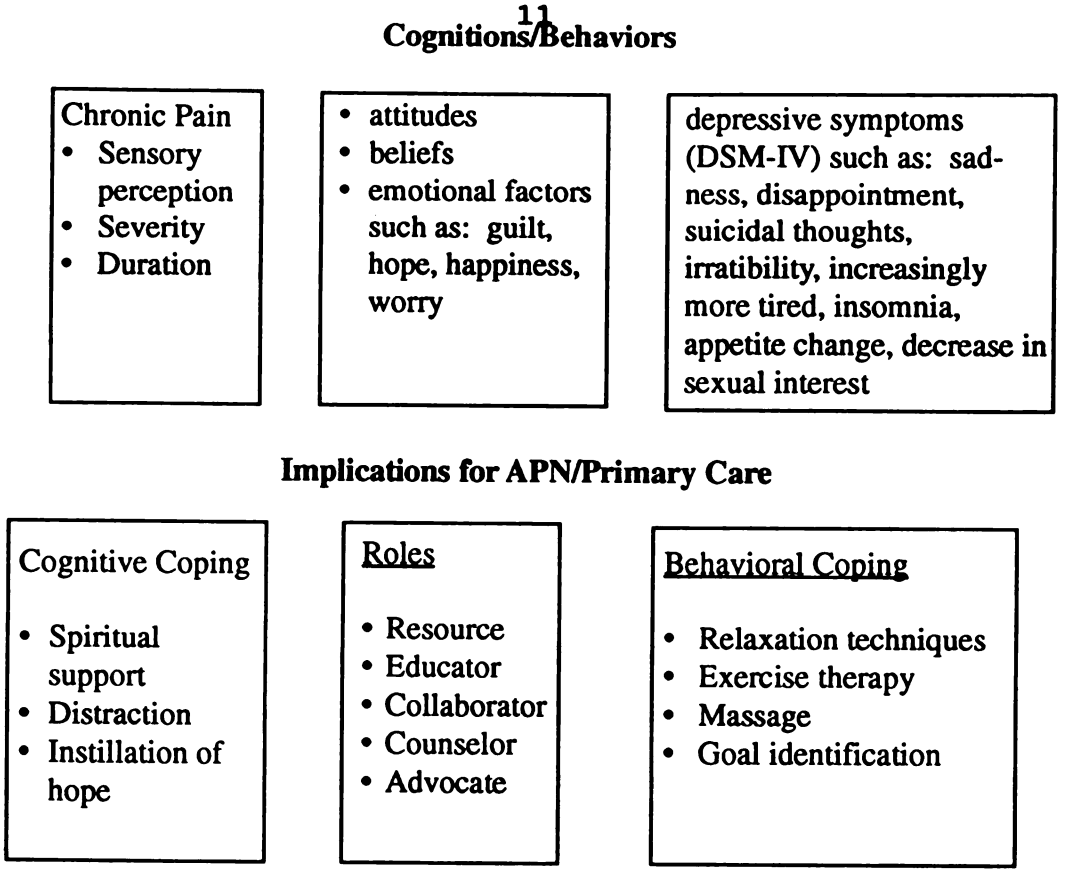

Figure 2. Incorporation of the BDI (depressive symptoms) into a cyclic cognitive behavioral model.

negatively, as significant others, including health care providers, react to patient behaviors.

The cognitive behavioral model encompasses the multidimensional complexities of chronic pain as it co-exists with depressive symptoms. It allows chronic pain to be more than just perception and sensory impulse registration. It considers the dynamics of the interpretive process. Pain is not a passive transmission of impulses but results from "physically defined stimuli" (Turk & Rudy, 1986). Consideration must be given to the cognitive, emotional and behavioral contribution in the formation and

perpetuance of pain perception. There are many symptoms associated with chronic pain that are also described as depressive symptoms.

Acknowledging that chronic pain and depressive symptoms co-exist allows for application of this model because a cognitively oriented model will allow for explanation of behavior by the patient experience of chronic pain subjectively stated and the co-existence of depressive symptoms either stated or observed.

The flow of the model allows for primary care providers and nurses in advanced practice to intervene when there are cognitive and/or behavioral changes affected by chronic pain. Specific interventions are given but the list is not complete. Cognitive behavioral interventions begin with assessment of the patients' "experiential world" (Watt-Watson & Donovan, 1992). Assessment of chronic pain and depressive symptoms permits problem recognition. After recognition, problem management begins with the interventions of Advanced Practice Nurses and Primary Care Providers.

This model allows for the integration of the roles of the Advanced Practice Nurse. Assisting the patient with the expression of pain, instilling hope, and affording distraction are cognitive coping strategies that the APN can initiate. Behavioral coping skills which the APN can teach are relaxation techniques, exercise therapy, massage therapy and goal identification.

METHODS

Data Collection Procedures

The data obtained from a chart audit of information at a multidisciplinary pain management center located in a Midwestern state. The center is a hospital-based, 250 bed, tertiary, non-teaching institution. The information was originally collected for chart inclusion by use of a pain questionnaire, a quality of life survey, and demographics from patient registration. Data collection was through a retrospective review of all new patient charts starting with January 1, 1997. Information obtained and recorded from the charts were: the depression scale score, duration of pain, location of pain, pain scale rating, age and gender. Names and medical record numbers were not recorded. The chart was not deemed useable if any of the collection data were missing. Review continued until information from 35 charts was complete. This included admission data on patients through April 9, 1997.

Protection Procedures

This data collection procedure was discussed with hospital legal representation and approved by the hospital Internal Review Board. University Committee on Research Involving Human Subjects' (UCRIHS) approval at Michigan State University was also obtained for secondary analysis of data collected at the pain clinic (97-225) (see Appendix A).

OPERATIONAL DEFINITIONS

Pain

Complete focused histories of new patients were taken during the initial visit to this multidisciplinary pain management. Data regarding pain duration, pain rating, and location of pain recorded at this time. The patients also filled out the Beck Depression Inventory as a requirement for evaluation.

Location of pain was operationalized as the primary site of pain and recorded without reference to radiation of pain or secondary pain sites. Duration of pain was an open-ended question assessing the length of time subjectively stated by the patient that pain had been experienced at the primary pain location. The pain scale used by this pain management center is a 0-10, with 0 being no pain and 10 being the worst imaginable pain.

Depression

The instrument used to measure level of depression was the Beck Depression Inventory (BDI). This instrument measures depression the day of assessment. The BDI is a frequently used scale and covers most cognitive and negative elements of depression (Paykel, 1992). It is widely used to document the prevalence of depressive symptoms in chronic pain patients (Novy, Nelson, Berry & Averill, 1994). In a review of 25 studies which addressed internal consistency of the BDI for psychiatric and non-psychiatric populations, the following results were obtained. For psychiatric

populations, coefficient alphas ranged from 0.76-0.95. With 16 non-psychiatric samples, the alpha range was 0.73-0.92. This is evidence of a high level of internal consistency reliability (Beck, Steer, & Garbin, 1988).

The Beck Depression Inventory is a 21 item questionnaire in which the patient selects the statement that best fits his/her mood. Rating is by severity of concept existence and a number from `0' (which would indicate that the concept did not exist) to `3' (which would indicate that the concept existed in some intensity) is circled. Some examples of questions from the BDI cover sadness with ratings of `3' for "I am so sad or unhappy that I can't stand it," a rating of `2' if "I am sad all the time and I can't snap out of it" is chosen. If to the same question the patient responds with "I feel sad" a score of one is attributed to the question. A score of zero if the respondent circles "I do not feel sad". All questionnaires were reviewed by the clinic psychologist prior to the patient completion of his/her initial visit. The psychologist pays particular attention to the item that investigates suicide and suicidal ideation. Immediate consultation was initiated when this item scored high. Scoring gave degrees of depressive symptoms, and we based on norms established by the BDI. A score of 0-9 was considered minimal depressive symptoms. Scores of 10-16 was considered mild depressive symptoms and a score of 17-29 was moderate depressive symptoms. A score of 19-29 was classified as

moderate-severe and finally severe depressive symptoms was a score of 30-63. The maximum score that can be achieved was 63. Scoring requires simple addition and can be easily done. There was no administration of a pilot study or a pretest.

Demographics

Age in years and gender (male or female) data were also collected.

Research Design

The design for the proposed study was a retrospective descriptive design.

Data Collection

New patient charts over a period of time beginning with January 1, 1997 were retrospectively reviewed and the BDI score recorded. Additional information regarding location of pain (as described by the patient), duration of pain, the pain scale rating (on that day), age and gender were also collected. It was not necessary to obtain name or medical record.

RESULTS

Sample Description

Thirty-six charts were reviewed. All but one met criteria which left 35 cases in the study. After the initial data collection, the names on BDI assessments were blackened and a number code given to the questionnaire to assure patient confidentiality. Data collection included age, gender, pain rating at the time of the first visit,

pain duration as reported by the patient at the time on the first visit, location of pain without regard to radiation, and the BDI score. The mean and standard deviations were calculated for the age, pain intensity rating, pain duration, and BDI score. Gender and pain location of pain were given number codes. Table 1 gives the ranges, the mean and the standard deviation for age, pain rating, pain duration and BDI score.

Percentage of males in the study was 37% (n=13) and the percent of females was 63% (n=22). There were six locations of pain indicated and each given a number code. The locations with the assigned codes are: 1=back pain (n=23), 2=abdominal pain (n=1), 3=neck pain (n=6), 4=arm pain (n=2), 5=shoulder pain (n=2) and 6=chest pain (n=1).

The mean BDI score of 12.886 would suggest existence of mild depressive symptomology. When the scores were looked at individually, 16 (46%) indicated minimal symptoms, 8 (23%) indicated mild symptoms, 10 (29%) indicated moderate symptoms and 1 (3%) indicated severe depressive symptoms. Those having mild, moderate or severe symptoms totaled 54% of the sample studied. This is much higher than that found in the general population of 9-14% as reported by Kaiser et al. (1990). This supports the hypothesis that there is an overall association between chronic pain and depressive symptoms.

A correlation matrix was computed, using the Pearson r index of association between duration of pain, pain

Table 1.

Descriptive Statistics

	Mean	SD	Range
Age (years)	50.571	16.973	18-84
Pain duration (months)	58.543	88.813	1-360
Pain rating (0-19 scale)*	6.257	2.227	0-10
BDI**	12.886	8.415	1-35

*10 was the highest level of pain
**Higher BDI scores indicate a higher level of depressive symptoms

intensity rating, and the BDI scores. The correlation coefficients are reported in Table 2.

The results indicate a statistically significant relationship between pain intensity rating and the duration of pain ($r=.34$, $p=.04$). The mean pain duration was 58 months and the mean pain intensity rating was 6.257 on a 0-10 scale. The association was negative, indicating that the longer the duration of the pain, the less intense the pain was on the 0-10 scale in these patients. This may indicate that the patient has developed coping strategies which may or may not have adverse effects. The association of BDI and pain intensity rating approached statistical significance and would possibly be statistically significant with a larger sample size.

Table 2.

Correlation Coefficients Between Pain Duration, Pain Intensity Rating and the Beck Depression Inventory

	PR	PD	BDI
PR (pain intensity rating)	1.0000 (35) P=.	-.3470 (35) P=.041*	.2935 (35) P=.087
PD (pain duration)	-.3470 (35) P=.041*	1.0000 (35) P=.	-.0075 (35) P=.966
BDI (Beck Depression Inventory)	.2935 (35) P=.087	-.0075 (35) P=.966	1.000 (35) P=.

DISCUSSION

From the data, there is a negative association between chronic pain rating and chronic pain duration. The longer the patient has had the pain the less intense it is apt to be. It is suggested that individual coping strategies may account for lower pain intensity ratings. The incidence of depressive symptoms found in this study (mild-severe) was higher than in the general population.

Limitations

The sample size, if larger, would have provided results that would be more generalizable. The data were collected over a short period of time (slightly over three months) and included six different locations of pain. More conclusive evidence may have resulted if specific areas of pain had been isolated and analyzed and a larger sample used.

Every attempt was made to hinder researcher bias but it should be mentioned that the data collection was done by the researcher who is also an employee of the pain management center. To simplify and maintain confidentiality one person did all of the data collection.

A noted weakness in this report is that the responses were dependent on self report. The nature of chronic pain and the use of rating scales is dependent upon subjective report which may then be contingent upon daily variances in perception. It is reported that self-reports can be influenced by a variety of other factors (Krause, Wiener, & Tait, 1994). This may have been a particularly bad or particularly good day for the patient and their report would have reflected that daily perception. There also continues to exist the stigma of depressive symptoms as being unacceptable to report (Faucett, 1994). For this reason, the possibility of underrating the BDI scores should be considered. Further, the 21 item BDI is a screening tool and definitive diagnosis of depression is withheld until an additional evaluation can be made. The BDI also emphasizes fatigue, sleep disturbance, appetite and sexual difficulties which may also indicate a chronic physical illness. The overlap between these depressive symptoms and chronic illness is more reason for additional evaluation (Kaiser et al., 1990).

Implications for Primary Care/Advanced Practice Nurses

The challenge for APN's and those in primary care is how to assess, without confirmatory tests, for depressive symptoms. The diagnosis is made on the basis of clinical evaluation. Accurate history taking, through physical exam, ruling out other causes, and planned interventions if symptoms are present is necessary (Preskorn, 1994). The APN must be well acquainted with the depressive symptoms described in the DSM-IV. The agreement seems to be that patients presenting with complaints of chronic pain require careful medical-physical, psychosocial, and behavioral function testing and evaluation (Turk, 1986).

Implications for Primary Care should be focused on early recognition of chronic pain symptoms such as frequent primary care visits for the same pain complaint. Another cue for chronic pain recognition is that the patient has been to numerous providers over a short period of time. The physical and emotional stressors of fatigue and sleep interference that often accompany chronic pain can lead to additional losses. Loss of energy, activity, bodily functions and social support are precursors of depressive symptoms. Anticipating these as possible occurrences may help with early recognition (Dworkin & Gitlin, 1991). Once chronic pain has been diagnosed, interventions should be directed toward assisting the patient with chronic pain coping mechanisms: teach relaxation, perform massage and teach massage to the family. Massage is easy to learn and

is inexpensive. Massage has little empirical evidence for optimum form, best candidates or contraindications (Watt-Watson & Donovan, 1992), but undisputedly affords short term relief. Imagery can also be used to reduce pain and assist with coping and has been used to modify behavior to provide a sense of mastery (Turk et al., 1995).

Another useful skill for the provider of care in a primary setting is distraction. Distraction requires focusing on something other than what is causing the pain sensation. Using this form of therapeutic intervention allows the provider the opportunity to establish a collaborative process with the patient to achieve control (Watt-Watson & Donovan, 1992). Since 54% of the sample had mild, moderate, or severe depressive symptoms (although not statistically associated with either pain intensity or duration) a collaborative approach with the patient form the primary care provider is to counsel family members. Conflict with significant others can lead to an increase in depressive symptoms (Faucett, 1994).

Understanding that patients with depressive symptoms feels the stigmatization that accompanies these feelings, education is of primary concern for the Advanced Practice Nurse. It is vital to educate patients and families about the nature, prognosis and treatments of depressive symptoms.

As important as education, patients need to be encouraged to adhere to treatment regimens, relinquish unnecessary guilt, and continue to hope (AHCPR, 1993). This

may be accomplished by asking the patient to keep a chronic pain diary. Record when the pain occurs, what is the intensity, duration and how did it make him/her feel.

These interventions should be used in the primary care setting and should improve outcomes. Reduction of pain and suffering for those with depressive symptoms with or without chronic pain is not the only benefit of early detection and therapeutic intervention. The reduction in cost is a serious consideration. With the annual cost (not including related family costs) for depressive symptoms nearing $26 billion dollars (Preskorn, 1994) decreasing this financial impact, without decreasing quality care, can only be achieved through early detection and treatment of both chronic pain and depressive symptoms.

To summarize the responsibility of those providing primary care, it is the combination of therapeutic interventions, behavioral changes, as well as pharmaceutical interventions, which will decrease suffering and improve the quality of life for patients who have chronic pain and depressive symptoms.

Recommendations for Future Research

As mentioned in this report, looking at individual diagnoses of chronic pain, such as low back pain, and the particularly depressive symptoms associated with it would give guidance to developing individualized care plans and would likely improve outcomes. Different and more detailed models could be developed if subgroups were more intensely

researched (Turk, 1990). By looking for and researching subsamples, data becomes less speculative and more treatment and outcome oriented (Magni et al., 1993).

More research studies regarding the nature of chronic pain and depressive symptoms could more sufficiently address their interrelationship. For example, is the association between chronic pain and depressive symptoms related to decrease in functional capacity (Brown, 1990)? If so, care plans would have a more functional rehabilitation component.

Replicable research designs that can be applied to individual chronic pain clinics will give chronic pain practitioners the opportunity to determine the degree of depressive symptoms as they exist in day to day practice. Concurrently, to help those suffering from both chronic pain and depression appropriate plans can be developed.

CONCLUSION

It is important to continue appraising the association between chronic pain and depression. This study suggests that although no direct association exists between chronic pain duration, pain intensity and depressive symptoms, many of the patients referred to the chronic pain clinic were mildly to severely depressed. Primary care providers have a many faceted focus from which distinctive personalized plans of care should evolve. The first and most important focus is recognition and screening; and secondly, the confidence to treat those in chronic pain with depressive symptoms.

LIST OF REFERENCES

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American Psychiatric Association Diagnostic and Statistical Manual of Mental Disorders, (DSM-IV) (4th ed.) (Revised).

Beck, A. (1976). Cognitive therapy and emotional disorders. New York: International Universities Press.

Beck, A., Steer, R., & Garbin, M. (1988). Psychometric properties of the Beck Depression Inventory: Twenty-five years of evaluation. Clinical Psychology Review, 8, 77-100.

Blumer, D., & Heilbronn, M. (1982). Chronic pain as a variant of depressive disease: The pain prone disorder. Journal of Nervous and Mental Disease, 170(7), 3781-406.

Brown, B. (1993). A causal analysis of chronic pain and depression. Journal of Abnormal Psychiatry, 99, 127-137.

Covington, E. (1991). Depression and chronic fatigue in the patient with chronic pain. Primary Care, 18(2), 341-358.

Dworkin, R., & Gitlin, M. (1991). Clinical aspects of depression in the chronic pain patient. The Clinical Journal of Pain, 7, 79-94.

Faucett, J. (1994). Depression in painful chronic disorders: The role of pain and conflict about pain. Journal of Pain and Symptom Management, 9(8), 520-526.

Gaskin, M., Greene, A., Robinson, M., & Geisser, M. (1992). Negative affect and the experience of chronic pain. Journal of Psychosomatic Research, 36(8), 707-713.

Kaiser, C., Middaugh, S., Kee, W., Levin, R., & Berndt, S. (1994). Self-reported depression profiles in chronic pain and family practice patients. The Clinical Journal of Pain, 6, 271-275.

Kaplan, H., Sadock, B. (1989). Comprehensive Textbook of Psychiatry (5th ed.). Baltimore: Williams & Wilkins.

Krause, S., Wiener, R., & Tait, R. (1994). Depression and pain behavior in patients with chronic pain. The Clinical Journal of Pain, 10, 122-127.

MacKinnon, R., & Yudolfsky, S. (1991). Principles of the Psychiatric Evaluation. Philadelphia: J.B. Lippincott.

Magni, G., Caldieron, C., Rigatti-Luchini, S., & Merskey, H. (1990). Chronic musculoskeletal pain and depressive symptoms in the general population: An analysis of the 1st national health and nutrition examination survey data. Pain, 43, 299-307.

Magni, G., Marchetti, M., Moreschi, C., Merskey, H., & Luchini, S. (1993). Chronic musculoskeletal pain and depressive symptoms in the national health and nutrition examination I. Epidemiologic follow-up study. Pain, 53, 163-168.

Magni, G., Moreschi, C., Rigatti-Luchni, S.B., & Merskey, H. (1994). Prospective study on the relationship between depressive symptoms and chronic musculoskeletal pain. Pain, 56, 289-297.

Novy, D., Nelson, D., Averill, P., & Berry, L. (1996). Gender differences in the expression of depressive symptoms among chronic pain patients. The Clinical Journal of Pain, 12, 23-29.

Novy, D., Nelson, D., Berry, L., & Averill, P. (1995). What does the Beck Depression Inventory measure in chronic pain?: A reappraisal. Pain, 61, 261-270.

Parker, J., & Wright, G. (1995). The implications of depression for pain and disability in rheumatoid arthritis. Arthritis Care and Research, 8(4), 279-283.

Paykel, S. (1992). Handbook of Affective Disorders (2nd ed.). New York: Guilford Press.

Preskorn, S. (1994). Outpatient management of depression. A guide for the primary-care practitioner. Professional Communication, Inc., 23-25.

Roberts, B., Matecjyak, M., & Anthony, M. (1996). The effects of social support on the relationship of functional limitations and pain to depression. Arthritis Care and Research, 9(1), 67-73.

Romano, J., & Turner, J. (1985). Chronic pain and depression: Does the evidence support a relationship? Psychological Bulletin, 97(1), 18-34.

Salerno, E., & William, J. (1996). Pain Management Handbook. St. Louis: Mosby.

Sullivan, M., & D'Eon, J. (1990). Relation between catastrophizing and depression in chronic pain patients. Journal of Abnormal Psychology, 99(3). 260-253.

Turk, D. (1990). Customizing treatment for chronic pain patients: Who, what, and why. Clinical Journal of Pain, 6(4), 255-270.

Turk, D., & Okifuji, A. (1994). Detecting depression in chronic pain patients. Behavioral Research Therapy, 32(1), 9-16.

Turk, D., & Rudy, T. (1986). Assessment of cognitive factors in pain: A worthwhile enterprise? The Journal of Consulting and Clinical Psychology, 54(6), 760-768.

U.S. Department of Health and Human Services Agency for Health Care Policy and Research (1993). Depression in Primary Care.

von Knorring, L., & Ekselius, L. (1994). Idiopathic pain and depression. Quality of Life Research, 3, 557-568.

Warfield, C. (1993). Principles and Practice of Pain Management. New York: McGraw-Hill.

Watt-Watson, J., & Donovan, M. (1992). Pain Management: Nursing Perspective. Chicago: Mosby.

Williams, A., & Schulz, R. (1988). Association of pain and physical dependency with depression in physically ill middle-aged and elderly persons. Physical Therapy, 68(8), 1226-1230.

APPENDIX A

Human Subjects

FAX TRANSMITTAL
TO: JUDITH WEED
DEPT: _____ FAX #: 517-789-5986
FROM: _____ PHONE: _____
CO: UCRIHS FAX #: _____
Post-it brand fax transmittal memo 7671

MICHIGAN STATE UNIVERSITY

April 9, 1997

TO: Linda Beth Tiedje
A-230 Life Sciences Building

RE: IRB#: 97-225
TITLE: ASSOCIATION OF CHRONIC PAIN AND DEPRESSION SYMPTOMS
REVISION REQUESTED: N/A
CATEGORY: 1-E
APPROVAL DATE: 04/09/97

The University Committee on Research Involving Human Subjects (UCRIHS) review of this project is complete. I am pleased to advise that the rights and welfare of the human subjects appear to be adequately protected and methods to obtain informed consent are appropriate. Therefore, the UCRIHS approved this project and any revisions listed above.

RENEWAL: UCRIHS approval is valid for one calendar year, beginning with the approval date shown above. Investigators planning to continue a project beyond one year must use the green renewal form (enclosed with the original approval letter or when a project is renewed) to seek updated certification. There is a maximum of four such expedited renewals possible. Investigators wishing to continue a project beyond that time need to submit it again for complete review.

REVISIONS: UCRIHS must review any changes in procedures involving human subjects, prior to initiation of the change. If this is done at the time of renewal, please use the green renewal form. To revise an approved protocol at any other time during the year, send your written request to the UCRIHS Chair, requesting revised approval and referencing the project's IRB # and title. Include in your request a description of the change and any revised instruments, consent forms or advertisements that are applicable.

PROBLEMS/ CHANGES: Should either of the following arise during the course of the work, investigators must notify UCRIHS promptly: (1) problems (unexpected side effects, complaints, etc.) involving human subjects or (2) changes in the research environment or new information indicating greater risk to the human subjects than existed when the protocol was previously reviewed and approved.

If we can be of any future help, please do not hesitate to contact us at (517)355-2180 or FAX (517)432-1171.

Sincerely,

David E. Wright, Ph.D
UCRIHS Chair

DEW:bed

cc: Judith E. Weed

OFFICE OF
RESEARCH
AND
GRADUATE
STUDIES

University Committee on Research Involving Human Subjects (UCRIHS)

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