CORRELATION BETWEEN CHRONIC PAIN WITH DEPRESSION AND ANXIETY DISORDERS IN PATIENTS AT RSUP DR MOHAMMAD HOESIN PALEMBANG

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ABSTRACT

The International Association for the Study of Pain defines pain as an unpleasant sensory and emotional experience related to the actual or potential damage to a tissue. Recent research reports 30% - 60% of the incidence of pain in depression and anxiety. Both of these conditions affect the quality and function of life of patients with chronic pain. This study was observational analytic research with a cross-sectional study. The subject of this study was the patien with chronic pain treated at Dr. Moh. Hoesin Palembang. Determination of pain level was assessed by Numeric Pain Rating Scale (NPRS) and Functional Pain Scale (FPS). Determination of depression is valued by Beck Depression Inventory II (BDI II) and determination of anxiety with the Beck Anxiety Inventory (BAI). Statistical analysis using a correlation test, is a method to find relationships between variables with a confidence level of 95%, significant if $p < 0.05$. In this study there were 78 patients with chronic pain where the correlation between NPRS scores and depression disorders with a correlation of 35.3% and a p-value of 0.002 showed significant. The correlation between NPRS scores and anxiety disorders with a correlation was 43.5% with and p-value 0,000 which showed a significant correlation. Correlation between FPS score and depression disorders was 33.1% and p-value of 0.003 which showed a significant correlation. Correlation between FPS score and anxiety disorders was 20.8% with a p-value of 0.068 showed not significant correlation. There was a significant correlation between chronic pain with depression and anxiety disorders.

Keywords: chronic pain, depression, anxiety

1. INTRODUCTION

The International Association for the Study of Pain defines pain as an unpleasant sensory and emotional experience related to actual or potential damage to tissue.[1,2] Accordingly, pain consists of two main components, namely sensory (physical) and emotional (psychological). [3] Sensory components are neurophysiological mechanisms that translate nociceptive signals into information about pain (duration, intensity, location, and quality of stimuli). While the emotional component determines the severity of the individual uncomfortable feeling, and can lead to emotional disorders such as anxiety and depression if it becomes chronic pain. Chronic pain itself is pain experienced in a period of more than 3 months, or pain that is still found after tissue injury has healed.[1,2] A recent research report shows that more than 1.5 billion people around the world suffer from chronic pain and about 3 - 5.5% of the global population suffer from neuropathic pain, with the incidence rate increasing with age.[4] The link between chronic pain and its affective component (ie depression and anxiety) have been known since ancient Greece. Recent studies report

30 to 60% of the incidence of pain and depression. [7] Study by Matthew J.Bair et al on 500 patients with chronic pain of ≥3 months duration found 54% suffer from pain only, 20% suffer from pain and depression, 3% suffer from pain and anxiety and 23% suffer pain, depression and anxiety.

2. METHOD

This study is an observational analytic study with cross-sectional design. The population of this study is chronic pain patients who went to Dr. RSUP Moh. Hoesin Hospital Palembang. The sampling technique used in this study is consecutive sampling. Inclusion criteria were > 18 years of age, all patients with chronic non-cancer pain lasting ≥ 3 months and consent to participate in this research. Exclusion criteria were alcohol and drugs consumption and psychiatric disorders before the onset of pain.

3. RESULTS

Pain intensity is described as how severe the pain is felt by individuals. Pain intensity is measured using the Numeric Pain Rating Scale (NPRS) [25]. NPRS scores are expressed in 0 (no pain) to 10 (very painful). Scores can be grouped into mild pain 1-3, moderate pain 4-6, and severe pain 7-10. Table 2 shows the intensity of pain suffered most is moderate pain (66.7%), then followed by severe pain (30.8%) and mild pain (2.6%).

Table 1. Numeric Pain Rating Scale (NPRS)

NPRS	Amount	Percentage
Mild Pain	24	30,8
Moderate Pain	52	66,7
Severe Pain	2	2,6

Functional Pain Scale (FPS) was developed to assess pain in older adults. FPS combines subjective and objective components, based on the tolerability of the pain felt and its effect on physical activity. Table 3 shows the number of patients from the highest FPS scores which is 2 (75.6%), followed by a score of 1 (21.8%), and score 1 and 4 (1.3%).

Table 2. Functional Pain Scale (FPS)

FPS	Amount	Percentage
Score 1	1	1,3
Score 2	59	75,6
Score 3	17	21,8
Score 4	1	1,3

Table 3 describes the number and percentage of depression degree and those who did not experience depression among chronic pain patients. 37.2% patients did not experience depression. The most Table 3. Degree of depression encountered degree of depression is mild mood disturbance (39.7%), followed by borderline clinical depression (16.7%), moderate depression (5.1%) and severe depression (1.3%).

Degree of depression	Amount	Percentage
Normal	29	37.2
Mild mood disturbance	31	39.7
Borderline clinical depression	13	16.7
Moderate depression	4	5.1
Severe depression	1	1.3

Table 4 shows the amount and the percentage of chronic pain patients who experience anxiety. Patients with chronic pain most experienced mild anxiety with a percentage of 89.7%, followed by moderate anxiety at 9% and severe anxiety at 1.3%.

Table 4. Anxiety degree

Anxiety degree	Amount	Percentage
Mild Anxiety	70	89,7
Moderate Anxiety	7	9,0
Severe Anxiety	1	1,3

Bivariate analysis in this study uses regression correlation for the analysis of numerical variables to determine whether there is a significant or insignificant difference between chronic pain with NPRS and FPS scores on depression and anxiety.

Table 5. Correlation between chronic pain (NPRS and FPS), depression and anxiety

		NPRS	FPS	Depression	Anxiety
NPRS	Pearson correlation	1	.592**	.353**	.435**
	Sig. (2-tailed)		.000	.002	.000
	N	78	78	78	78
FPS	Pearson Correlation	.592**	1	.331**	.208
	Sig. (2-tailed)	.000		.003	.068
	N	78	78	78	78
Depression	Pearson Correlation	.353**	.331**	1	.747**
	Sig. (2-tailed)	.002	.003		.000
	N	78	78	78	78
Anxiety	Pearson Correlation	.435**	.208	.747**	1
	Sig. (2-tailed)	.000	.068	.000	
	N	78	78	78	78

4. DISCUSSION

Patients who experience chronic pain

mostly were in age group of 18-65 years (76.9%) followed by the 66-80 years age group (23%). This study is in line with research conducted by Deshpande et al. Regarding the prevalence of chronic pain based on primary health center data in India found more chronic patients in the age group 21-40 and 41-60 compared to the age group 61-80 years.[20] This may be due to lack of report by the older age groups caused by difficulties of traveling to health centers. Jakobbson et al's study about the prevalence of chronic pain in Sweden general population shows that the prevalence increases with age.[11] The highest prevalence > 50% are found in the 60-74 years age group and the oldest age group ≥ 90 years. One explanation for the higher prevalence of chronic pain in old age may be the natural aging process (which starts at around 30 years old) and an increased risk of illness (including related illnesses)[21].

The fact that chronic pain becomes numerous in old age (from 18 to 65 years) has been previously confirmed by previous studies. However, it is still unclear whether the prevalence of pain increases, decreases, or remains constant in higher age groups. Chronic pain are more experienced by women (57.7%) compared to men (42.3%), this is in accordance with large-scale studies conducted in brazil population with a total of 723 respondents which found an average age of 41 years with female dominancy of 56%. The prevalence of chronic pain in the United States of 35,718 respondents aged 18 years and older, obtained the highest prevalence of chronic pain in women with 34.3% and men with 26.7% and increased after age.[1]

Two hormones play role in women who are more sensitive to pain. In addition, women also have a greater nerve density (more nerves in certain areas) which may cause women to feel pain more severely than men. There is ample evidence that estrogen has a significant role in modulation of endogenous opioid neurotransmission and psychophysical responses associated with pain stress in human. Estrogen seems to play an important role in inducing antinociception in experimental animals. Giving estrogen to women increases pain-induced-opioid binding receptors in the brain, this suggests that exogenous estrogen improves the function of the endogenous opioid system, in addition to the role of antinociception, estrogen also seems to play a role in inducing hyperalgesia and pain.[12] Based on work status, chronic pain is suffered moreby housewives (42.3%), pensioner (16.7%), self-employed and employees (11.5%), laborer (10.3%), private employees (6.4%) and students (1.3%). Not much different from the study of Matthew et al in which chronic pain were most prevalent in patients who did not work (41%), work retiree (34%) and workers (25%).[13]

The correlation between chronic pain and NPRS scores on depressive disorders and anxiety disorders showed a significant correlation with the correlation of 35.3% (p = 0.002) and 43.5% with (p = 0.000). The correlation between chronic pain with FPS score on depressive disorders with a correlation of 33.1% and p-value of 0.003 with p <0.05 indicates a significant relationship. The relationship between chronic pain and FPS scores on anxiety disorders with a correlation of 20.8% with a p-value of 0.068 with p> 0.05 revealed a non-significant relationship. In line with research by Eric et al, showing a significant relationship between chronic pain and CPG score with the severity of depressive symptoms and anxiety symptoms, in this study shows the higher possible relationship of depression severity and anxiety, the stronger the relationship with pain.[14]

A review of the scientific literature states that depression is often associated with chronic pain, resulting in lower quality of life. The prevalence of depression in individuals with chronic pain is generally high, as verified by studies in China where

41.6% of patients with depression experience chronic pain. Similar results were also found in studies in Taiwan, where depressive disorders were found in 31.5% of participants with chronic pain. Elbinoune et al. Found that depression and anxiety were prevalent in individuals with chronic neck pain, and this disorder was related to pain intensity. Stubbs et al noted in their study that all types of back pain, along with chronic pain, are associated with an increased risk of anxiety, as well as depression and sleep disorders. Bener et al. Observe a significant relationship between psychological stress and low back pain. In this study, anxiety disorders occurred in 9.5% in the group with low back pain versus 6.2% in the painless group (p = 0.007), and depression was found in 13.7% in the group with low back pain compared to 8, 5% in the painless group (p = 0.002) .

5. CONCLUSIONS

There is significant correlation between chronic pain with NPRS and FPS scores on depressive disorders and anxiety.

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