

The Effects of Treatments and Depression on Chronic Low Back Pain

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Introduction

Most people have experienced low back pain sometime in their life. Dorsi and Belzberg explain that more than 50% of all adults suffer from low back pain, making it the fifth most common reason for patients to visit a primary care physician.¹ Although back pain is very common, it is not clear how to best treat it.

Treatment for back pain may include hot/cold packs, massage, physical therapy, exercise, over-the-counter pain medicines, and other options. When the pain becomes chronic, i.e., persists more than three months, treatment may be expanded to include the use of addictive pain medications.²

While many medical problems can cause back pain, emotions may have a major impact upon the severity and quality of the pain. In fact, patients with chronic pain often have a problem with depression or anxiety. These emotions may interact with treatments to influence the severity of pain and physical functioning.³

The aim of this study was to determine the most prevalent treatments for low back pain and evaluate the additional influence of depression on pain and physical functioning.

Methods

Subjects. Investigators conducted this study in outpatient clinics of six family medicine residency programs across Texas. Patients were invited to participate if they were adults with low back pain for 3 months or longer, and were not new to the clinic. Investigators excluded pregnant women and patients with cancer.

Procedure. Medical students enrolled and surveyed 222 patients as they arrived for routine visits to the outpatient family medicine clinics. When the visit was complete, students retrieved patients' medical records and abstracted additional information related to low back pain.

Measurement. The 5-page patient survey addressed demographic characteristics, pain duration, frequency and severity, physical functioning and general health, anxiety, depression, social support and stress, and family violence. From the patient charts, students gathered information about the duration of the doctor-patient relationship, the patient's health insurance, the cause and duration of the low back pain, treatments for pain, comorbidities, and BMI (Body Mass Index).

Analysis. In this study, the key analyses focused on the outcome variables of pain and physical functioning. Key predictor variables included the use of addictive medications and depression.

Results

Our questionnaire was answered by 222 respondents. The median age of the respondent was 53 years old, and the sample consisted of 66.5% females. The distribution by ethnicity and race was: 37.4% Hispanics, 45.3% White, and 15.9% African American. In this sample, the mean level of pain was 6.53 (on a scale from 1 to 10) with an average pain duration of 14.3 years. 68.2% said they use addictive pain medications. 82% of the sample experienced depression in the past 30 days and 79.7% experienced some anxiety or panic in the past 30 days.

Treatments used to address back pain are summarized in Table 1. Addictive medications and non-addictive medicines were the most prevalent treatments. 54.5% used ice and heat to alleviate pain while 40.5% resort to muscle relaxers. 13.1% reported that nothing helps at all.

TABLE 1: Treatments for Low Back Pain

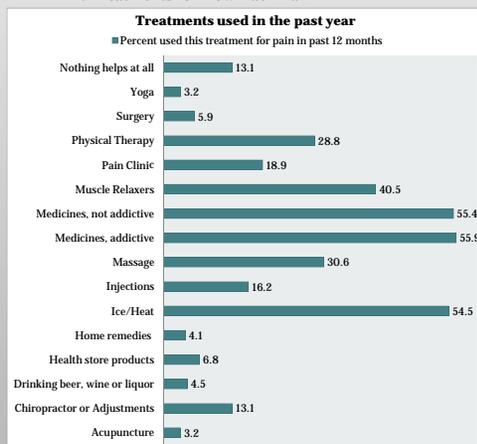
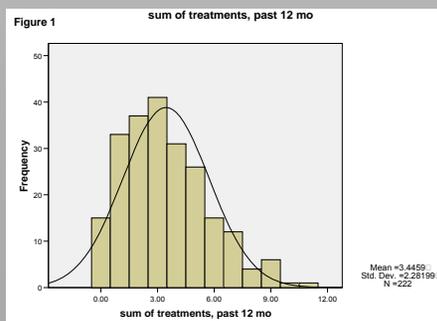


Figure 1 shows a sum of treatments used by patients over the past 12 months.



Of the sample, 25.6% said they use addictive medicines everyday on a schedule, 21.3% use it everyday as needed, 21.3% use it only as needed and 31.8% did not use them. Table 2 shows the percentage of patients who were using addictive medication and experienced depression. Results show that persons who use addictive medicines are more likely to report depression.

Table 2	Everyday on Schedule	Everyday as needed	As needed not daily	Do not use
YES some depression past 30days	(47 count) 27.3%	(42 count) 24.4%	(33count) 19.2%	(50count) 29.1%
NO depression past 30 days	(7 count) 17.9%	(3 count) 7.7%	(12 count) 30.8%	(17 count) 43.6%

P=.025, shows significant correlation between variables

Table 3 shows the correlation between depression frequency and average pain, worst pain, a body-pain score, general health, and physical functioning. Pearson Correlation coefficients indicate that depression frequency had a direct positive correlation with the amount of pain levels experienced by patients ($r = .426, .265, \text{ and } .515$) Stronger pain was associated with greater frequency of depression ($p < .001$). Additionally, we found an inverse relationship between frequent depression and good health and physical functioning in patients ($p < .001$). Overall patient health and functioning appeared to be adversely affected by frequent depression. The Pearson correlation coefficients are displayed in Table 3, below.

TABLE 3: Correlations for Frequent Depression variable

	Frequent Depression Pearson Correlation
Average Pain level	0.426 P=0.000
Worst Pain level	0.265 P=0.000
Level of Body pain High score=High pain	0.515 P=0.000
Health score High score=good health	-0.457 P=0.000
Role Functioning High score=High function	-0.268 P=0.000
Physical Functioning	-0.0398 P=0.000

Table 4 shows the linear regression analysis predicting average pain and physical functioning. Predictors included respondent demographics, treatments, depression, and anxiety variables. Linear regression analysis indicated that being African American, having a high sum of treatments in the past 12 months, addictive medicines, depression and feeling panic in the last 30 days were all positively correlated with the average pain level. The most significant correlations were seen between depression and average pain level. Sum of treatments that are working now was the only negatively correlated predictor. Analysis also showed that physical functioning was negatively correlated with age, the use of ice/heat, addictive medications, depression and average pain levels. Age, depression and pain average showed strong negative correlation with physical functioning

Table 4 Linear Regressions
 Dependent Variable: Average Pain Level
 Adjusted R² = .241

Predictors	Beta	p-value
African American	0.165	0.007
Sum of treatments past 12 months	0.168	0.034
Sum of treatments working now	-0.150	0.069
Addictive Medicines	0.154	0.028
Depression	0.268	0.000
Panic in the last 30 days	0.167	0.012

Dependent Variable: Physical Functioning
 Adjusted R² = .315

Predictors	Beta	p-value
Age	-0.223	0.000
Ice/Heat	-0.109	0.060
Addictive Medicines	-0.184	0.002
Depression	-0.278	0.000
Pain Average	-0.293	0.000

Conclusions

- Prevalent treatment options for patients with low back pain include the application of ice/heat, the use of both addictive and non-addictive medications, as well as the use of muscle relaxants.
- The use of addictive medicines and high pain levels are strongly correlated in a positive direction. Addictive medicines and physical functioning are strongly correlated in a negative direction.
- Patients who are depressed tend to have higher pain and poorer physical function, and use addictive medicines.
- Doctors can provide better treatment for pain if they screen for depression and anxiety in high-level pain patients. Depression/Anxiety should also be treated by the physician.
- By improving feelings of depression/anxiety, doctors can more accurately recommend the amount of addictive medications needed to control pain.

References

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