# Pain Complaints in Latino Adults of Mexican Origin With and Without Major Depressive Episode: A Cross-Sectional Study

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***Background:*** The aim of this retrospective, cross-sectional study was to determine the prevalence of 5 pain complaints among Latino adults of Mexican origin meeting the criteria for major depressive episode (MDE).

***Method:*** In a mental health clinic for the indigent, consecutively evaluated Latino adults of Mexican origin received structured diagnostic psychiatric interviews based on modules extracted from the Structured Clinical Interview for DSM-IV Axis I Disorders-Clinical Version. All were specifically asked whether they had experienced headache, backache, abdominal pain, myalgia, or arthralgia "in the last week." Patients meeting the criteria for MDE were compared to patients without MDE from the same clinic. Associations and statistical significance of the differences between groups were determined using logistic regression models. The data were collected between August 2003 and November 2004.

***Results:*** Two hundred ten patients had an MDE, and 35 individuals without an MDE comprised the comparison group. Eighty-eight percent of the patients with MDE versus 53% of the controls had at least 1 pain complaint ($p < .0001$). Patients with MDE were 8.3 times more likely to have 1 or more pain complaints than the comparison patients ($p < .0001$). The significant relationship between depression and pain applied when we examined those with $\geq 2$, $\geq 3$, and $\geq 4$ pain complaints. Twenty-eight percent of the MDE subjects had all 5 pain complaints compared to 3% of subjects without MDE ($p = .013$).

***Conclusions:*** The method of assessment of the presence of pain led to the detection of a remarkably high prevalence of pain complaints. The findings presented have important implications not only for the practice of those who are widely recognized as being primary care physicians but also for practitioners of all clinical disciplines.

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A myriad of idiopathic somatic complaints, including pain, are common among depressed persons across the lifespan[1–5] (S.C.D., F.B., J.S.M., et al., manuscript submitted) and across cultures.[5–10] The author of an authoritative review[3] concluded that in excess of 67% of depressed patients experience pain.

Pain stemming from depression exacts a great toll in terms of human suffering, psychosocial impairment, and monetary expenditure. A recent study[11] of the financial burden posed by pain in a large urban primary care practice compared the direct costs of treating patients with ($N = 207$) and without ($N = 821$) major depressive disorder (MDD) over a 12-month period. The cost of caring for patients with MDD ($19,838) was over 3-fold greater than that of nondepressed patients ($6268). The increment in cost was solely due to an increased demand for services by depressed persons with moderate to severe pain.[11] Thus, the occurrence of moderate to severe pain in the context of a depressive syndrome carries a heavy economic toll.

A MEDLINE search conducted by meshing the terms *pain* and *depression*, for the period of 1951 through December 20, 2006, did not find an article that presented the results of a systematic, controlled study of the prevalence of pain complaints among depressed adults.

Study of the experience of pain in the context of a depressive syndrome has, to the best of our knowledge, with

but 1 exception,[10] relied on data obtained from retrospective chart reviews and unstructured methods of case identification. One might reasonably expect that chart reviews, unless the data recorded within the charts are gathered in a structured fashion, and studies relying on spontaneous reports of pain are likely to lead to an underestimation of the problem posed by pain among depressed persons. This outcome follows as patients often do not report a symptom unless specifically asked about its presence.

We did not find a study of the prevalence of pain complaints among Latino adults of Mexican origin in our review of the literature. Hernandez and Sachs-Ericsson,[12] utilizing the National Comorbidity Survey database, concluded that Hispanic persons are more likely than Caucasian individuals to complain of pain when depressed. This study warrants comment.

First, the study conducted by Hernandez and Sachs-Ericsson[12] was an epidemiological study. In contrast, this article reports the results of a clinical study. There is a fundamental difference in the nature of these 2 forms of study. Second, and much more important, it is critical to appreciate that *Hispanic* is a highly inclusive term. It includes many peoples who are not of Mexican origin. In fact, only 66% to 67% of those who identify themselves as being Hispanic are of Mexican origin.[13] Thus, one cannot presume that the study by Hernandez and Sachs-Ericsson[12] holds any relevance to our study.

In this retrospective, cross-sectional study, we tested the hypothesis that adult Latino patients of Mexican origin meeting the criteria for major depressive episode (MDE) would report a substantially higher prevalence of pain complaints than 67% as suggested by the author of the review[3] cited above. We anticipated that this would be the case, as the presence of pain complaints obtained in the course of our routine clinical practice was determined in an orderly, structured, and methodical manner.

We first present data on the 1-week prevalence of 5 pain complaints among depressed Latino patients of Mexican origin. These forms of pain were selected on the basis of reports to the first author by many patients over a period of years that the patients felt as if their whole body hurt or ached when they were depressed. Headache, abdominal distress, aching back, myalgia (which can affect the chest wall), and arthralgia cover the entire body. Hence, these forms of pain were included in the screen for pain. Second, we compare the prevalence of pain complaints among unipolar and bipolar patients. This step was taken merely for the sake of completeness.

## METHOD

Requirements for study inclusion were that patients be between 18 and 65 years of age and that they not have a known basis for pain based on their medical history and the review of systems. None were taking a medication or were subject to another medical treatment that could cause the pain in question.

All patients presented to a public sector psychiatric outpatient clinic for the destitute situated in the rural expanse of Starr County, Texas, an extremely impoverished, semiclosed community resting on the Rio Grande River. The data were collected between August 2003 and November 2004.

The county had a population of 53,597 persons in the 2000 census.[14] Its racial composition is 99% Hispanic of Mexican origin and 1% other. The population is poorly educated; none of the patients had more than the equivalent of a 12th-grade education. A sample of patients like the one provided by Starr County has never been the focus of previous research, and, consequently, there is no preexisting literature to review or guide us.

The clinic was the only vehicle for the delivery of specialized psychiatric services in the county. The first author (S.C.D.) was the sole practicing psychiatrist in it. This situation afforded him the opportunity to establish uniform standards of patient evaluation and treatment. All patients, regardless of age, in keeping with sound psychiatric practice, received structured assessments. Given the ubiquitous nature of pain in depression, this evaluation included a screen for the 5 pain complaints mentioned above.

Bachelor's-level triage staff served as the gatekeepers to S.C.D. These individuals had to classify a patient as meeting the criteria for MDD (unipolar depression), bipolar disorder, or schizophrenia according to DSM-IV[15] criteria in order for the patient to gain access to him; patients with other disorders were excluded as funding did not allow the extension of services to them. This decision was made by policymakers, not clinic staff.

S.C.D. did not always agree with the classification assigned by triage staff. Those patients who did not meet the criteria for admission to the clinic comprised a comparison group. The small size of this group reflects policies governing eligibility for services.

The patients with MDE included 123 persons with unipolar depression and 87 with bipolar disorder; 6 patients had bipolar II disorder and 81 had bipolar I disorder. The comparison patients included individuals with substance abuse (N = 10), adjustment disorders (N = 4), attention-deficit/hyperactivity disorder (N = 2), and no Axis I disorder (N = 19).

Patients with schizophrenia were excluded. They have a psychiatric disorder that may or may not be associated with an unusual prevalence of pain complaints and merit attention in a parallel study. However, review of our records indicated that only 5 patients met the criteria for this diagnosis. This figure is remarkably low, but one must bear in mind that Starr County, at least at the time that the data were collected, was a semiclosed community. This setting is conducive to the concentration of genes predis-

  

**Table 1. Demographic Characteristics of Patients With and Without MDE**

| Characteristic | Patients With Unipolar Depression (N = 123) | Patients With Bipolar Disorder (N = 87)[a] | Patients With MDE (N = 210)[b] | Patients Without MDE (N = 35) | All Patients (N = 245) |
|---|---|---|---|---|---|
| Age, mean (SD), y | 36.7 (12.0) | 36.6 (12.3) | 36.7 (12.1) | 31.9 (11.3) | 36.0 (12.1) |
| Gender | | | | | |
| Male, % | 28 | 39 | 32 | 66 | 37 |
| Female, % | 72 | 61 | 68 | 34 | 63 |

[a]Included depressed and mixed episodes.
[b]Included patients with unipolar depression and bipolar disorder.
Abbreviation: MDE = major depressive episode.

posing to the risk of various diseases and the exclusion of genes conferring risks to others. We previously proposed that relative genetic homogeneity accounts for a high prevalence of bipolar I disorder among the persons constituting the clinic's population.[16] It can also account for a low prevalence of schizophrenia.

Patients received structured diagnostic interviews based on modules extracted from the Structured Clinical Interview for DSM-IV Axis I Disorders-Clinician Version (SCID-CV)[17] to determine the presence of MDE and hypomania/mania, anxiety disorders, substance use disorders, and psychosis. All patients were also asked in a uniform, structured manner whether they had experienced headache, backache, abdominal pain, myalgia, or arthralgia in the last week.

The following queries were asked: Have you been having headaches in the last week? Has your back been hurting you in the last week? Has your stomach been hurting you in the last week? Have your muscles been hurting you in the last week? Have your joints been hurting you in the last week?

These questions were asked in the course of delivering standard clinical services rather than as part of a research project. In the authors' judgment, ideal practice, as will be highlighted in the Discussion, calls for a screen for pain and other idiopathic somatic complaints that do not enter into the operational definition of MDE.

The data were coded prior to analysis to assure confidentiality. Only S.C.D. knows the identity of the patients. Written informed consent is not required given that the data that were obtained in the course of the delivery of routine clinical services were not obtained for the purpose of conducting a research project and were managed in the manner described.

The data were assessed for significance using univariate logistic regression models. Statistical significance was determined by failure of the 95% CI of the odds ratio (OR) to overlap with 1.0. This indicates that there is a difference between groups.

Logistic regression allows one to not only test the null hypothesis (i.e., there is no difference between groups) but, more importantly, provide an estimate of the magnitude of the association between 2 variables by yielding the OR and its 95% CI. The ORs were adjusted for age and gender. Significance of the difference in the mean number of pain complaints between patients with unipolar depression and bipolar disorder was determined using 2-sample Student t test. Measures of variance refer to the standard deviation (SD) of the mean. The level of significance was set at $p \leq .05$.

## RESULTS

The demographic characteristics of the patients are presented in Table 1. Seventy-two percent of the patients with unipolar depression and 61% of the patients with bipolar disorder were females. The female-to-male ratio for control subjects was 1.0:1.9.

Data were missing for 1 patient in each group. Hence, the percentages of patients with no pain complaint and those with ≥ 1 pain complaint do not add up to 100% in either group. Ten percent of the patients with MDE and 44% of the comparison patients did not have a single pain complaint ($p < .0001$). Eighty-eight percent of patients with MDE and 53% of the comparison patients had at least 1 pain complaint ($p < .0001$). The patients with MDE were more likely to have ≥ 1, ≥ 2, ≥ 3, ≥ 4, and all 5 of the pain complaints. These findings are summarized in Table 2.

Table 3 presents the percentages of patients with and without MDE who had each pain complaint. The MDE patients were more likely to have headache ($p < .0001$), backache ($p < .0001$), abdominal pain ($p < .0001$), myalgia ($p < .0001$), and arthralgia. The OR for the latter was not calculable as none of the patients in the comparison group had arthralgia. This reduces the denominator in the formula used to calculate the OR to 0, resulting in a conceptually meaningless OR of ∞. The absence of overlap in the distribution of persons with MDE and those without an MDE with respect to the presence of arthralgia renders it unnecessary to use inferential statistics to conclude that depressed patients were significantly more likely to have arthralgia.

The OR of a subject with MDE having any pain complaint relative to a control patient was 8.3 ($p < .0001$). These data are presented in Table 3.

**Table 2. Percentage of Patients With and Without MDE With ≥ 1, ≥ 2, ≥ 3, ≥ 4, and All 5 Pain Complaints**

| Variable | All Patients With MDE (N = 210) | All Patients Without MDE (N = 35) | OR | 95% CI of OR | p Value |
|---|---|---|---|---|---|
| No pain complaints, % | 10 | 44 | 0.1 | 0.0 to 0.3 | < .0001 |
| ≥ 1 Pain complaint, % | 88 | 53[a] | 6.6 | 2.9 to 14.6 | < .0001 |
| ≥ 2 Pain complaints, % | 78 | 21 | 13.3 | 5.4 to 32.6 | < .0001 |
| ≥ 3 Pain complaints, % | 61 | 9 | 16.5 | 4.9 to 56.0 | < .0001 |
| ≥ 4 Pain complaints, % | 42 | 3 | 24.0 | 3.2 to 179.2 | .002 |
| All 5 pain complaints, % | 28 | 3 | 12.8 | 1.7 to 95.7 | .013 |

[a]The percentage of subjects with no pain complaints and those with ≥ 1 does not equal 100% as data is missing for 1 affectively ill and 1 control subject.
Abbreviation: MDE = major depressive episode.

**Table 3. Percentage of Patients With and Without MDE Who Had Pain Syndrome**

| Syndrome | Patients With MDE, % | Patients Without MDE, % | OR | 95% CI of OR | p Value |
|---|---|---|---|---|---|
| Backache | 64 | 6 | 28.4 | 6.6 to 121.8 | < .0001 |
| Abdominal pain | 52 | 21 | 4.1 | 1.7 to 9.8 | < .0001 |
| Headache | 78 | 24 | 11.3 | 4.8 to 26.6 | < .0001 |
| Myalgia | 54 | 9 | 12.1 | 3.6 to 40.9 | < .0001 |
| Arthralgia[a] | 49 | 0 | NC | NC | NC |
| Any type of pain | 87 | 44 | 8.3 | 3.7 to 18.1 | < .0001 |

[a]Zero control subjects had arthralgia. Hence, it is not possible to calculate the OR (the denominator in the formula is 0, which produces a meaningless value of ∞).
Abbreviations: MDE = major depressive episode, NC = not calculable.

**Table 4. Frequency of Number of Pain Complaints as a Function of Gender**

| Variable | Male Patients With MDE, % | Female Patients With MDE, % | OR | 95% CI of OR | p Value |
|---|---|---|---|---|---|
| ≥ 1 Pain complaint | 75 | 94 | 5.5 | 2.23 to 13.46 | < .0001 |
| ≥ 2 Pain complaints | 67 | 83 | 2.4 | 1.25 to 4.74 | .007 |
| ≥ 3 Pain complaints | 51 | 67 | 2.0 | 1.09 to 3.53 | .019 |
| ≥ 4 Pain complaints | 35 | 46 | 1.6 | 0.87 to 2.87 | .102 |
| All 5 pain complaints | 22 | 31 | 1.7 | 0.82 to 31.7 | .117 |

Abbreviation: MDE = major depressive episode.

There were no statistically significant differences in the prevalences of headache (OR = 1.18, 95% CI = 0.61 to 2.30, p = .61), backache (OR = 1.04, 95% CI = 0.59 to 1.85, p = .89), abdominal pain (OR = 0.94, 95% CI = 0.54 to 1.63, p = .84), or arthralgia (OR = 0.98, 95% CI = 0.57 to 1.70, p = .94) between patients with unipolar depression and patients with bipolar disorder. However, patients with bipolar disorder were more likely than those with unipolar depression to have myalgia (OR = 1.78, 95% CI = 1.01 to 3.10, p = .04).

Among those with MDE, women versus men were more likely to have ≥ 1 (p < .0001), ≥ 2 (p = .007), and ≥ 3 (p = .019) pain complaints. There were no statistically significant differences in the prevalence with which men and women had 4 or 5 pain complaints as displayed in Table 4.

The prevalence of pain complaints was equally high for patients with unipolar depression and those with bipolar disorder. The mean (SD) number of pain complaints among the patients with unipolar depression and those with bipolar disorder was 3.56 (2.04) and 3.83 (1.95), respectively (t = 0.25, df = 209, p = .81).

## DISCUSSION

The prevalence of pain complaints in our sample was remarkably high. We propose that this result stems from the structured method of assessment rather than the uniqueness of our patient population. However, we cannot eliminate the possibility that ethnic, racial, or cultural factors impacted the results. In the community we selected, we did not have a group of depressed white patients or patients of some other race from which we could draw and compare to our Latino patients. It would be next to impossible to obtain such a group in a rural community of 53,587 people in which 99% of the inhabitants are of Mexican origin. There were only about 530 non-Latino persons covering the entire lifespan in the county in the 2000 census.[14]

Calvillo and Flaskerud[18] concluded that Latino individuals of Mexican American background are not more

inclined to complain of pain than persons of Northern European origin. In contrast, Hernandez and Sachs-Ericsson,[12] as stated in the Introduction, came to the conclusion that Hispanic persons included in an epidemiologic study are more inclined to report pain in the presence of depression than Caucasian interviewees. However, as we emphasized above, it cannot be assumed that this article is relevant to our work.

We would suggest that our findings are not peculiar to Latinos of Mexican origin. Corruble and Guelfi[10] determined the prevalence of pain complaints cross-sectionally among 150 depressed French patients by using the Symptom Check List-90-Revised. Ninety-two percent of the patients had 1 or more pain complaints. This finding strongly indicates that the prevalence of pain complaints that we report does not stem from a factor unique to our patient population.

The finding that pain is the norm rather than the exception in the context of a depressive syndrome has distinct clinical implications. First, it suggests that it is sound practice to ask depressed patients whether they have pain. Second, the literature reviewed below indicates that it is also sound judgment to regard the persistence of pain and other idiopathic somatic complaints, following the dissipation of core symptoms of MDE, to be an indication for both more aggressive pharmacotherapy and heightened vigilance for the risk of relapse.

The authors of 1 study reported that intensive treatment with an antidepressant eliminated all pain among moderately to severely depressed adults.[19] They referred to this form of pain as being "state dependent," as its presence was dependent on being in a state of depression. Some of these patients had repeatedly sought medical attention, in some cases over a span of many years, only to find no relief. Some had costly procedures such as radiographic examinations performed.

Paykel et al.[20] reported that residual symptoms of depression, which include but are not limited to pain, are strong predictors of early relapse. Early relapse occurred in 76% (13 of 17) of the patients with these symptoms compared to 25% (10 of 40) of those without them.

Kennedy and Paykel[21] later divided previously depressed patients meeting the criteria for remission into residual and nonresidual symptom groups. Follow-up data were obtained on 55 of the 60 living subjects 8 to 10 years later. The residual symptoms group, despite having met criteria for remission, which is a much higher standard than response to treatment, experienced more time with subsyndromal depressive symptoms than did the nonresidual symptoms group over the span of the follow-up period. These subsyndromal depressive symptoms were associated with a significant reduction in quality of life and greater impairment across multiple domains of psychosocial function over the follow-up period. The authors concluded that patients who enter remission but have residual idiopathic somatic complaints such as pain might benefit from more aggressive treatment than that needed to merely induce an operationally defined remission.

The persistence of idiopathic pain in a patient who is being treated for depression and who has apparently entered remission is an indication for clinical reassessment and possible intensification of treatment. These patients must be regarded as being at high risk for relapse into a syndromal state unless treatment is aimed at the dissipation of pain.

We encourage all providers of medical services to adopt the basic principle: Where there is depression one must suspect the presence of pain and where there is pain one must suspect the presence of depression.[22–25] The internalization of this principle can spare heavily weighed upon, overly taxed clinicians a deep sense of frustration and helplessness when encountering patients who seem to constantly convey unfounded psychic and somatic misery. It also stands to sensitize physicians and other health care providers to the possibility that many of these patients have unrecognized depression, a very treatable medical condition. The aggressive use of appropriate pharmacotherapy combined with supportive nonpharmacologic interventions that properly accompany its utilization stands to greatly relieve the core symptoms of both depressive syndromes and pain.

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