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Methadone Patients Satisfaction with Quality of Life - A Clinical Correlation

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Abstract

Background: *Chronic pain disrupts sleep and has been identified as a symptom that impairs quality of life.*

Objectives: *Evaluate how subjective satisfaction of life correlates with clinically known parameters such as sleep patterns, pain levels, infectious disease status (Heptatitis C and HIV), urine screening for benzodiazepines, cocaine, and morphine, and methadone dose in patients receiving methadone maintenance therapy.*

Methods: *De-identified and retrospective clinical data was extracted from a Canadian methadone clinic. Data including insomnia severity index, brief pain inventory, satisfaction with quality of life, outcomes of urine screening tests, and hepatitis C and HIV status.*

Results: *Number of years of opiate use was positively correlated with average pain levels (r=0.39). Average pain levels (r=.29) and worst pain levels (r=.28) were positively correlated to insomnia. Level of satisfaction with life is inversely correlated with insomnia(r=-0.37). The total score on the insomnia index was inversely correlated to hepatitis C status (r=-.32).*

Conclusion: *Patients who had been using opiates for longer periods reported higher levels of pain. Patients with higher levels of pain reported more symptoms of insomnia. Patients with more symptoms of insomnia were less satisfied with their quality of life. Those positive for hepatitis C reported lower levels of insomnia.*

Keywords: *Insomnia, Pain, Methadone, Quality of Life.*

Introduction

Subjective satisfaction with quality of life is more closely related to the concept of happiness than to the concept of quality of life: the latter concept might include factors such as financial status, social status, residence in a good neighborhood, etc. Patients on methadone maintenance therapy (MMT) have risk factors for lower quality of life such as family conflict, lower education levels, unemployment, homelessness, and lower social status (9). For this reason, it is of interest to examine how the subjective satisfaction with quality of life correlates with clinically known parameters such as infectious disease status (Hepatitis C and HIV), insomnia, pain levels, how many years of opiate use, how many years on methadone, and methadone dose.

Pain is a very frequent complaint in patients receiving MMT. For example, a study of 227 methadone patients in Baltimore found that 60% of them experienced chronic pain (2). This would probably affect their subjective satisfaction with life. The addiction to opiates presumably starts in some of these patients as an attempt to cope with chronic pain from injuries sustained earlier in life. Chronic pain disrupts sleep and was identified as the single most important symptom that impairs the quality of life of methadone patients (6).

Insomnia is usually associated with fatigue and impaired functioning and this is also likely to lower a person's sense of personal satisfaction with life. A study in 2011 found a high prevalence of both subjective sleep complaints and of objective sleep

pathology in methadone patients (8). Another study found that half of methadone and suboxone patients rated their sleep either as "fairly bad" (42%) or "very bad" (8.2%) (7).

The main goal of this present study is to evaluate clinical correlates of patients receiving MMT with subjective satisfaction with quality of life.

Materials and Methods

Retrospective and de-identified clinical data files from a Canadian urban opiate substitution clinic were perused to extract information on the patients. Included were only those on methadone, those who completed the Insomnia Severity Index, and also items 3 to 5 of the Brief Pain Inventory (ratings of worst pain, least pain, and average pain from 0=no pain to 10=very severe pain). Those who entered treatment less than 6 months ago and those on suboxone were excluded.

Self-ratings of satisfaction with quality of life were also available ("How satisfied are you with the quality of your life?"): the ratings were on a scale from 0=not satisfied to 10=very satisfied.

Results of urine screening tests for benzodiazepines, cocaine, morphine, oxycodone, and for the metabolite of methadone (EDDP) were available.

Age, sex, number of years using opiates, and methadone dose were also available.

HIV status and Hepatitis C status were also included in the data file because it presumably could have an impact on satisfaction with quality of life.

No formal written approval was needed and provided for such retrospective statistical review of clinical files as all data used in the study was duly de-identified. The rationale for this is that each patient already provided informed consent while the clinical data was collected in the past.

The magnitude of relationships of subjective satisfaction with quality of life to the various clinical variables was evaluated by the Pearson correlation coefficients, with the significance level set to p equal or smaller than .05 (one-tailed).

Results and Discussion

The sample consisted of 58 patients of age 24 to 59 years (mean age 37.4, SD=8.7) of which 32 were men and 26 women. They used opiates for 5 to 40 years (mean 14.4, SD=7.1) and were in methadone treatment for 6 months to 20 years (mean 7.3, SD=4.0). The longest history of abuse was reported by a 59 year old patient who started using opiates 40 years ago and has been on methadone for the last 20 years.

In this sample only 2 patients (3.4%) were HIV positive: this number did not provide a meaningful base for correlational analysis to other variables. With regards to hepatitis C status, results were known for 54 patients and 28 of these (51.9%) tested positive. 61% of males and 39% of females tested positive.

The ratings of satisfaction with life on the scale from 0 to 10 indeed ranged from 0 to 10, with the average slightly above 5 points, see Table 1.

Only 4 patients (6.9% of the 58) reported no sleep symptoms on the Insomnia Severity Index. When using interpretational categories for this insomnia scale, 29.3% of the patients scored within the normal category (scores 0 to 7), 36.2% in the subthreshold category (scores 8 to 14), 25.9% in the category of moderate insomnia (scores 15 to 21), and 8.6% in the category of severe insomnia (scores 22 to 28) (5). The average score on the insomnia index is reported in Table 1.

Table 1. *The range, mean, and standard deviation of key variables*

	N	minimum	maximum	average	SD
age	58	24.00	59.00	37.4483	8.67983
how many years ago started opiates	58	5.00	40.00	14.3621	7.12962
how many years ago started methadone	58	.50	20.00	7.2845	3.96156
satisfaction with quality of life	58	.00	10.00	6.3362	2.35712
average pain	58	.00	10.00	4.2069	2.82072
worst pain	58	.00	10.00	6.5000	3.65748
lowest pain	58	.00	8.00	2.1034	2.26096
methadone dose now	58	16.00	130.00	65.6207	29.10527
Insomnia Severity Index	58	0	23	11.8448	6.9907

See Table 1 for data on lowest, worst, and average pain levels. Only 19% of patients reported no symptoms of pain.

The proportions of the patients with positive urine tests were as follows: 17.2% of the 58 tested positive for benzodiazepines, 24.1% for cocaine, and 22.4% for morphine. Only one patient tested positive for oxycodone.

Predictors of Satisfaction with Quality of Life

The relationship of subjective satisfaction with quality of life to the measure of insomnia, the measure of pain, hepatitis C status, results of urine tests (tests for benzodiazepines, cocaine, and morphine), number of years of opiate use, number of years on methadone, methadone dose, age, and gender were evaluated by the Pearson correlation coefficients, with the significance level set to p equal or smaller than .05 (one-tailed). Only one relationship was significant: the level of satisfaction with life was inversely correlated with the extent of insomnia symptoms (r= -.37). Those with more symptoms of insomnia were less satisfied with their life. The average rating of satisfaction with life for those within the normal category on the insomnia index was significantly higher (average = 7.2, SD=2.4) than in the category of moderate or severe insomnia (average=5.2, SD=2.4): this difference is significant in a t-test (t=2.7, df=39, p=.005, 1-tailed).

Predictors of Insomnia

Of clinical interest are also correlates of insomnia. The total score on the insomnia index was inversely correlated to hepatitis C status (r=-.32). Those positive for hepatitis C reported lower levels of insomnia. Average pain levels and worst pain levels were positively correlated to insomnia, (r=.29) and (r=.28) respectively. Those with higher levels of pain reported more symptoms of insomnia.

Predictors of Pain

Also of clinical interest are the correlates of pain. Number of years of opiate use was positively correlated with average pain levels (r=.39) and worst pain (r=.35). Those who had been using opiates for longer, reported higher levels of pain.

Of note, there was no significant relationship between cocaine use and symptoms of insomnia.

The main findings of this study is that subjective satisfaction with quality of life in methadone patients is inversely related to insomnia. Insomnia is related to ratings of pain. Ratings of pain are related to number of years of opiate use.

Some clinicians may assume that dose of methadone may have a significant impact on sleep quality. This was not confirmed in this statistical analysis. A recent study also found no significant correlation of methadone dose to sleep ratings (7).

Some clinicians would expect cocaine abuse to be correlated with sleep problems (8), but this clinical lore remains unconfirmed by the data from the present sample of methadone patients.

The findings in this study suggest that patients who have used opiates for longer periods report higher levels of pain. The theory behind this is that while opioid use may relieve pain in the short-term, in the long-term, opioid use leads to receptor adaption, which in turn results in a lowered pain threshold resulting in hyperalgesia (3). A recent investigation suggested higher incidence of hyperalgesia (reduced pain tolerance) in methadone patients compared to opioid naïve individuals (10).

Limitations and Future Studies

A weakness of this study was no information obtained with regards to socioeconomic factors. Homelessness, unemployment, level of education, and other medical co-morbidities can influence satisfaction with quality of life (9). Future studies would benefit from including these parameters if available.

Some might consider it a surprise that these methadone patients reported on average a 6.3 out of 10 satisfaction with quality of life. One might expect a lower satisfaction in quality of life in methadone patients due to family conflict, lower education levels, unemployment, homelessness, and lower social status (9). The same study found that although the quality of life of drug-dependent people was low, those receiving methadone showed a higher satisfaction with quality of life (9). This suggests that methadone maintenance therapy could improve the quality of life of those suffering with addiction.

The data on ratings of pain suggest that pain management remains a major therapeutic problem in the lives of these patients, at least according to their self-reports, see Table 1. The evidence of hyperalgesia in previous studies (10) and in this study, highlights

the importance of adequately managing pain. Future studies should explore non-addictive medications or alternative methods of pain management in this patient population.

Conclusion

This study highlights areas for future research on patients receiving methadone maintenance therapy for opiate addiction. Our results are consistent with the theory of hyperalgesia: patients who had been using opiates for longer periods reported higher levels of pain. The association between pain and insomnia was significant: patients with higher levels of pain reported more symptoms of insomnia. The relationship between insomnia and quality of life was also significant: patients with more symptoms of insomnia were less satisfied with their quality of life.

Unlike in the published study by Carlson's team (1), our patients positive for hepatitis C reported lower levels of insomnia, but the reasons for this are not clear.

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