Int J High Risk Behav Addict. 2018 March; 7(1):e67609. doi: 10.5812/ijhrba.67609.

Published online 2018 February 19. **Brief Report**

Pain and Sleep Measures in Methadone and in Suboxone Patients

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Received 2016 January 17; **Revised** 2016 May 22; **Accepted** 2017 June 11.

Abstract

Background: Pain and impaired sleep are often reported by patients in opiate substitution therapy.
Objectives: We compared sleep and pain ratings by patients treated with methadone to those treated with suboxone (buprenorphine/naloxone combination).
Patients and Methods: Sixty-eight patients (44 men, 24 women) undergoing opiate substitution treatment were treated with methadone (mean dose = 42.2 mg, SD = 24.6) or suboxone (mean dose = 9.7 mg, SD = 5.0). Their ratings of current level of pain on a scale from 0 (no pain) to 10 (extreme pain), their sleep ratings on the Pittsburgh sleep quality index, and outcomes of their urine screening tests for cocaine, oxycodone, opiates, and benzodiazepines were recorded.
Results: Sleep quality was rated as "fairly bad" by 42.0% and as "very bad" by 8.2% of our patients. Moderate to severe levels of pain (pain ratings > 3 points) were reported by 55.9% of our patients. Neither the dose of suboxone nor the dose of methadone correlated with pain and sleep ratings (rho, P > 0.05). Suboxone patients did not differ from those on methadone in their sleep and pain ratings (Mann-Whitney, P > 0.05).
Conclusions: Suboxone and methadone patients did not differ in their ratings of pain and sleep.

Keywords: Sleep, Pain, Methadone, Buprenorphine

1. Background

Many, but not all polysomnographic studies report impaired sleep in methadone patients. For example, Peles et al. (1) concluded from their polysomnographic investigation that methadone maintenance treatment (MMT) did not negatively affect the opiate addicts' baseline sleep data. However, large weight gain in these patients was associated with obstructive sleep apnea. In contrast, most other studies such as a polysomnographic investigation by Sharkey et al. (2) found high prevalence of both subjective sleep complaints and of objective sleep pathology in this population.

Many patients enter opiate substitution treatment after developing an addiction to pain medication in the particular context of their chronic pain (e.g., hospital nurses with work related injuries to lumbar spine or victims of motor vehicle accidents with cervical, lumbosacral, or other injuries). A recent study of 227 menthadone patients in Baltimore found that 60% experienced chronic pain (3). Chronic pain is a major sleep disrupting factor and was identified as the single most important symptom that impairs the quality of life of methadone patients (4).

2. Objectives

We compared sleep quality and pain ratings in patients treated by methadone and in those by suboxone.

3. Patients and Methods

A random sample of 68 patients (44 men, 24 women) in a Canadian urban clinic participated in this study. All were undergoing opiate substitution treatment. More than two-thirds (72.1%) of them were maintained on methadone (mean dose = 42.2 mg, SD = 24.6). The rest of this sample of patients (27.9%) was treated with suboxone (mean dose = 9.7 mg, SD = 5.0). We included all patients regardless of the presence or absence of pain and regardless of the location of their pain. Disruptive or violent patients were excluded from our sample and from this particular clinic. Excluded were also persons with severe cognitive impairments that would interfere with their ability to comprehend and complete the measures of sleep quality and those of pain.

The age of our 68 patients ranged from 22 to 65 years with the mean at 36.7 (SD = 10.7). Those on suboxone did not differ from those on methadone with respect to age (t-test, P > 0.05) and with respect to the ratio of men to

women (x^2 test, $P > 0.05$). All patients completed the Pittsburgh sleep quality index (5). As per Item 5 of the brief pain inventory (6), our patients also rated their pain from 0 (no pain) to 10 (extreme pain). Their last 10 urine screening tests for benzodiazepines, cocaine, opiates, and oxycodone were included in our data set and entered into an SPSS file.

4. Results

4.1. Overall Sleep Quality

Consistently with past research, about a half of our patients rated their sleep either as "fairly bad" (42%) or "very bad" (8.2%). In particular, 32.8 % of participants obtained less than 6 hours of sleep per day, however, sleep duration did not significantly correlate (Pearson r, $P > 0.05$) with results of urine screening tests (including also those for cocaine).

4.2. Prevalence of Pain

More than half of our sample of patients in this particular urban clinic reported at least moderate levels of pain: 55.9% reported moderate or severe levels as suggested by ratings surpassing 3 points on the scale from 0 to 10 in the brief pain inventory.

4.3. Comparison of Methadone and Suboxone Patients

The pain ratings and sleep ratings consisted of data on ordinal and nominal scale level and thus required nonparametric statistical procedures. No statistical difference was found in pain level and sleep disruption ratings between our methadone patients and those on suboxone (Mann-Whitney, $P > 0.05$). Positive urine tests for cocaine were more common in methadone patients ($t = 2.4$, $df = 63$, $P < 0.05$), perhaps because within our sample, more of the suboxone patients belonged to higher social class with respect to their professional, economic, or educational background. No significant differences were noted on other urine tests (t_test, $P > 0.05$).

Within our particular sample of patients, neither the dose of suboxone nor the dose of methadone correlated with pain and sleep ratings (rho, $P > 0.05$).

5. Discussion

The value of this study consists in statistically documenting the lack of correlations of methadone and suboxone dose to sleep and pain ratings in our patients. The weakness lies in its cross-sectional design: studies are needed in which changes in sleep and pain parameters are recorded from pretreatment on for at least 12 months.

Our suboxone and methadone patients did not differ in their ratings of sleep quality or pain, however, these findings cannot be easily generalized to patients in other countries without considering local differences in government policies or insurance coverage for suboxone and for methadone treatment. The variation in respective insurance coverage may have a counterpart in differences in social class, and this may in turn be reflected in the differential proportions of patients who engage in the concurrent abuse of particular illicit drugs. While some opiate substitutions clinics tend to cater primarily to socially better adjusted clientele such as nurses or other persons with employment related injuries which resulted in intractable pain and led to opiate addiction, some other clinics cater to recreational users who eventually became addicted. These sociocultural factors could lead to considerable differences in the results of urine tests and in correlations of the urine tests to other variables.

Future research might benefit from the inclusion of designs comparing pain free patients to those with a homogeneously consistent location of pain (e.g., lumbosacral region from L1 to S5) to make more exact pain measurements technically feasible, for example, those of the cold pain threshold (CPT), heat pain threshold (HPT), and pressure pain threshold (PPT), as in the excellent study by Paungmali's team (7). Lumbopelvic stability test (8) could also be useful in such studies, if narrowly focusing on lumbosacral pain.

Similarly to the recent study in Baltimore (3), more than a half of our patients reported moderate to severe pain. Data reported by Zahari's team (9) suggest hyperalgesia (reduced pain tolerance) in methadone patients. Such findings highlight the importance of adequately assessing and managing pain in patients undergoing opiate substitution therapy.

Acknowledgments

We thank the patients in the methadone and suboxone clinic for their participation in this medical study. The article is based on our paper presented in the congress of the International Society of Addiction Medicine (ISAM) at Kuala Lumpur, Malaysia, November 21-23, 2013.

Footnote

Financial Disclosure: None of the authors had a financial interest in the outcomes of this study.

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