

CHARACTERISTICS OF SLEEP DISTURBANCES AMONG PATIENTS IN METHADONE MAINTENANCE PROGRAM ACCORDING TO INSOMNIA SEVERITY INDEX

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SUMMARY

Objectives: There is a bidirectional association between substance abuse and sleep. Substance abuse causes sleep disturbances directly, and sleep issues are the largest source of substance-use relapse. **Subjects and methods:** A cross-sectional study was conducted on 219 patients treated with methadone at the Hoang Mai Facility. **Results:** Among 219 patients who participated in the study, 8 patients (3.7%) were defined with clinical insomnia with a total ISI score of 15 or higher. 42 patients (19.2%) experienced difficulty falling asleep, 40 patients (18.3%) had difficulty staying asleep, 33 patients (15.1%) experienced waking up too early. Most patients were satisfied with their sleep, 35 cases (16%) with insomnia problems. Few insomnia problems affected the quality of life and daily activities, with the rate ranging from 1.4 to 2.3%. **Conclusion:** The proportion of individuals with sleep disturbances (ISI > 15) was relatively low. Patients, on the other hand, require comprehensive care and early identification in order to receive the prompt intervention. Therefore methadone treatment facilities must measure the quality of patients' sleep when they first enroll in the program and during their treatment.

* *Keywords:* Methadone; Sleep disturbance.

INTRODUCTION

The use of narcotic substances and substance addiction psychosis are serious health and social issues. Shortly after that, nonmedical opioid use also started to increase markedly, reaching a peak of 2.7 million new users in 2002 [2]. Opioid addiction has a significant impact on

healthcare institutions, families, and society. Methadone maintenance therapy (MMT) is the most widely utilized and safest opioid addiction treatment available today. Evidence shows that MMT substantially reduces the frequency of drug use, sharing of injecting equipment, and drug-related crimes [3].

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Using any sedative or narcotic substance can cause some changes in sleep; moreover, quitting and withdrawing from these substances can cause sleep disturbances [4]. The relationship between substance use and sleep is bidirectional; on the one hand, substance use can directly cause sleep disturbances; thus, sleep problems are one of the risk factors for substance-use relapse [5]. Clinically, prescribed opioids such as morphine and methadone suppress sleep during the rapid eye movement stage. Many studies have suggested the prevalence and frequency of sleep disorders among opium users [6].

Many countries around the world have many studies on sleep disorders in inpatients, but in Vietnam, there are not many studies describing sleep disturbance characteristics, especially among Methadone-Maintained Drug Users. Currently, there are many new and advanced treatment regimens for patients.

However, sleep problems among Methadone-Maintained Drug Users have not been clearly understood and studied in the department. Therefore, the major goal of this research is: *To describe clinical characteristics of sleep disturbances in Methadone-Maintained Drug Users.*

SUBJECTS AND METHODS

1. Subjects

This study was conducted in Hanoi, Vietnam. Participants were recruited at the Hoang Mai MMT Facility.

The eligible criteria to participate in the study: 1) Currently enrolled in Hoang Mai MMT clinics; 2) Aged 18 years or over; 3) Was able to communicate normally and had no severe medical or psychiatric conditions; 4) Accepted to participate in the study voluntarily, and was consent to participate in the study.

2. Methods

** Study design:* A cross-sectional study.

At enrollment, each participant was interviewed face-to-face by a trained researcher in a private place using a structured questionnaire. The questionnaire included items on demographic characteristics, history of drug use before MMT. ISI questionnaire was used to screen for all characteristics of sleep problems. Information about daily methadone dosage and the length of treatment was obtained from the patient's medical records at clinics.

3. Data analysis

Data analysis was conducted by SPSS 26.0 for Window statistic software. Median was reported to describe quantitative variables, and the percentage was reported for qualitative variables. Covariates to consider in the logistic models included socio-demographic characteristics, methadone treatment, drug use behaviors, and environment factors (e.g. having family members/co-workers/friends identified as drug users). Statistical values (i.e. Chi-square and p-value) had been taken into account to decide a final analysis model.

RESULTS

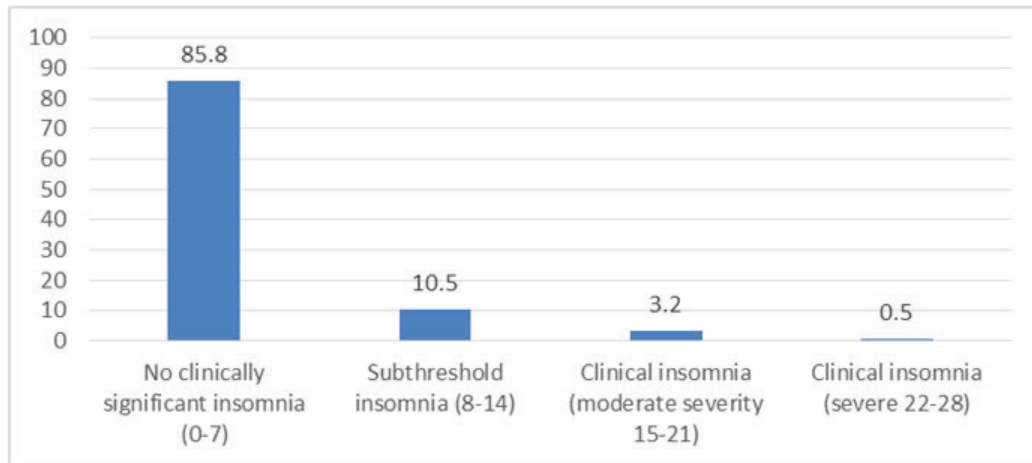


Figure 1: Level of sleep disturbance according to the ISI scale.

The majority of patients reported no clinically significant insomnia symptoms, with ISI scores in the range of 0 - 7, accounting for 85.8%. 23 patients (10.5%) had subthreshold insomnia with ISI from 8 to 14. Among 219 participants in the study, 8 cases (3.7%) were defined with clinical insomnia with a total ISI score of 15 or higher, of which only 1 case had severe insomnia with an ISI score of 22 - 28.

Table 1: Manifestations of sleep disorders.

Sleep disorder symptoms	Level				
	None	Mild	Moderate	Severe	Very severe
	n (%)				
Difficulty falling asleep	177 (80.8)	23 (10.5)	15 (6.8)	3 (1.4)	1 (0.5)
Difficulty staying asleep	179 (81.7)	18 (8.2)	15 (6.8)	6 (2.7)	1 (0.5)
Waking up too early	186 (84.9)	19 (8.7)	10 (4.6)	3 (1.4)	1 (0.5)

The manifestations of sleep disorders included difficulty falling asleep, difficulty staying asleep, and waking up too early. For symptoms of difficulty falling asleep, the number of patients accounted for the following proportions: No symptoms 80.8%, mild 10.5%, moderate 6.8%, severe 1.4%, very severe 0.5%. Regarding difficulty staying asleep, the majority of patients (81.7%) had no symptoms, mild 8.2%, moderate 6.8%, severe 2.7%, and very severe 0.5%. Only one patient reported that the condition of waking up too early was very severe. Most of the other patients (84.9%) had no symptoms, the prevalence of patients with symptoms from mild - moderate - severe respectively accounted for 8.7%, 4.6%, and 1.4%.

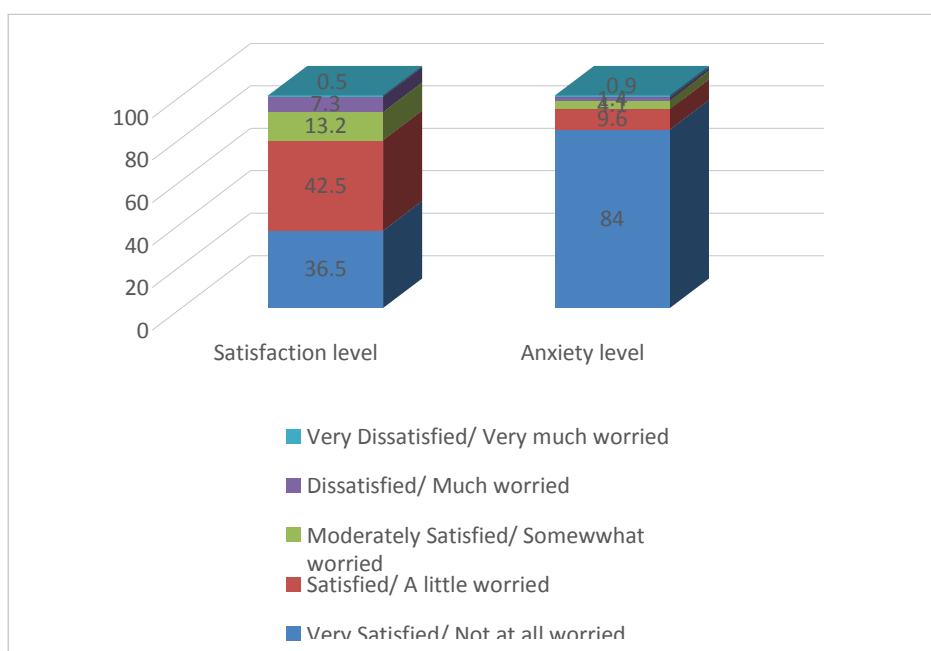


Figure 2: Level of satisfaction and anxiety about sleep.

Figure 2 shows the level of satisfaction and anxiety about the sleep quality of patients. The rate of patients satisfied with their sleep was very high (79%); however, there were still 17 patients (7.8%) dissatisfied and especially 1 patient (0.5%) very dissatisfied with their sleep. A tiny percentage of patients still suffered from sleep anxiety, accounting for 16%, equivalent to 35 people, of which 2 patients (0.9%) were worried very much. 184 patients (84%) reported that they were not at all worried.

Table 2: Consequences of sleep disorders.

	Not at all	A little	Somewhat	Much	Very much
	n (%)				
Impairing the quality of life	180 (82.2)	24 (11.0)	8 (3.7)	4 (1.8)	3 (1.4)
Interfering with daily functioning	181 (82.6)	21 (9.6)	8 (3.7)	4 (1.8)	5 (2.3)

Table 2 presents the effect of sleep on the daily life of the patients. 180 patients (82.2%) without deterioration in the quality of life, a little: 24 patients (11.0%), somewhat: 8 patients (3.7%), much: 4 patients (1.8%), very much: 3 patients (1.4%). About interfering with daily functioning, the majority of patients were not at all (82.6%), a little 9.6%, somewhat 3.7%, much 1.8%, very much 2.3%.

DISCUSSION

According to our research results, the proportion of patients with insomnia and insomnia symptoms but not yet diagnosed with insomnia (ISI \geq 8) only accounted for 14.2%, corresponding to 31 patients.

Research by Ngo Le Que Tram found that 40.4% of patients treated with methadone had poor sleep quality, and this rate was lower than other studies with an average rate of 62.4% [1].

Peles et al. conducted a study on the sleep quality of 101 patients by methadone maintenance, showing a mean PSQI score of 9.0 ± 4.8 , and 75.2% with a PSQI score > 5 , giving sleep disturbance was observed [7].

In our study, the difficulty in falling asleep was found in 42 patients, 40 patients had difficulty in maintaining sleep, while there were 33 patients with early awakening.

The study by Khazaie et al. also described more clearly the sleep characteristics of methadone patients, with 16.9% of patients having difficulty falling asleep, 21.5% having shorter sleep duration, the rate ranged from 6.2 - 20% with symptoms such as snoring, abnormal movement during sleep [8].

According to our study, the level of dissatisfaction and anxiety about patients' sleep accounted for 21.0% and 16.0%, respectively.

The study by Thakral et al. revealed that the items assessing sleep interference, worry about sleep, and satisfaction with sleep was the most highly correlated with insomnia severity [9].

In our study, the proportion of patients with sleep disorders affecting functioning and quality of life accounted for 17.8%, and the severity of the effects was only 3 - 4%. In contrast, in the study by Chen et al., heroin users with sleep disturbance had a significantly lower quality of life than those without sleep disturbance [10].

This suggests that the use of any sedative or addictive substance can affect functioning and quality of life, but the severity is much higher in the heroin group.

CONCLUSION

14.2% of participants had symptoms of sleep disorder. The mean ISI score was 2.65 (SD = 4.46). 19.2% of patients had difficulty falling asleep, 18.3% of patients had difficulty staying asleep, 15.1% of patients woke up too early. Most patients in the study didn't impair the quality of life (82.2%), whereas the remaining 17.8% of patients had. Up to 82.6% of patients didn't interfere with daily functioning, and only 17.4% of patients reported their daily functioning interfered.

According to the findings, methadone treatment centers should monitor patients' sleep quality at the start of the program and throughout the treatment process. Screen for mental health issues on a regular basis and provide help to individuals with psychological issues to avoid disrupting their sleep. Monitor the patient's treatment to ensure that the right dose is given and that the patient's dose is reduced to enhance sleep quality. For improved treatment efficacy, patients must commit to treatment and follow the directions of doctors and counselors.

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