

Forum

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A vast majority of patients in MMT may have sleep disturbances.

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Clinical Concepts

Sleep Disorders in MMT

O sleep, O gentle sleep,
Nature's soft nurse, how have I frightened thee,
That thou no more wilt weigh my eyelids down
And steep my senses in forgetfulness.
— Shakespeare, *Henry IV*

Sleep is a cherished period of rest that restores function, and disorders of sleep have plagued mankind throughout history. Primitive cultures used herbs to help promote sleep. Ancient healers prescribed "sleeping draughts." And, for centuries, alcohol and substances of abuse have been used erroneously for their alleged sleep-enhancing qualities.

Sleep disturbances affect up to half of the American population, depending on how surveys are done, and up to 15% of those afflicted persons have underlying substance abuse problems. Of some concern, a recent study found that the vast majority of patients in methadone maintenance treatment (MMT) exhibited serious sleep disturbances, as discussed further below.[1]

Sleep So Easily Disrupted

The need for sleep varies from one person to another, but ranges up to 10 hours during a 24-hour period.[2] Both the quantity and quality of sleep are important (*see side box on "Sleep Architecture"*). Patients may complain that they do not sleep at all, when they are actually describing a lack of deep sleep, perhaps less spontaneous dreaming, and/or frequent awakenings.[3]

Unfortunately sleep can be disrupted by many factors, such as psychological and medical disorders, effects of medications or substances of abuse, or lifestyle (e.g., lack of exercise). Occasional sleep disturbances are a universal human

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MMT Perspectives

Mobile Methadone Bypasses NIMBY

Solution or Stopgap?

Methadone maintenance treatment (MMT) has been burdened since its earliest days by availability shortages.

Even in communities recognizing the value of MMT for dealing with local opioid-addiction problems, cries of "not in my backyard" (NIMBY) soon follow when it comes to establishing clinic locations.

One answer has been mobile methadone dispensaries. Vehicles – specially equipped vans or buses – bring the medication into communities each day for distribution to patients and then leave. This approach to making methadone more accessible dates back to 1979 (*see side box*).

However, there is still the question of whether mobile methadone provides the best solution or is merely a stopgap measure for overcoming community resistance problems that should not exist in the first place.

Over the years, mobile methadone programs have been started in Baltimore (*see side box*), San Francisco, Seattle, and other locales. Massachusetts has been a particularly active area for such programs.

Success in Brockton

AT Forum last wrote about "Methadone-on-Wheels" in 1994 (Fall, Vol. 3, No. 3). Faced with community

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Events to Note

For additional postings & information, see:
www.atforum.com

November 2004

SOPHE (Society for Public Health Education) 55th Annual Meeting
November 4-5, 2004
Washington, DC

Contact: www.sophe.org/

Canadian Psychiatric Association
54th Annual Meeting

November 4-7, 2004
Ottawa, Ontario, Canada
Contact: 613-234-2815

American Public Health Association;
132nd Annual Convention

November 6-10, 2004
Washington, DC

Contact: 202-777-APHA;
diane.scheu@apha.org

Assoc. for the Advancement
of Behavior Therapy;
38th Annual Convention

November 18-21, 2004
New Orleans, Louisiana
Contact: 212-647-1890; www.aabt.org

December 2004

SECAD (Southeast Conference on
Addictive Disorders)

December 1-4, 2004
Atlanta, Georgia
Contact: 1-866-293-5510;
<http://www.naatp.org/secad/index.php>

American Academy of Addiction
Psychiatry; 15th Annual Meeting

December 9-12, 2004
San Juan, Puerto Rico
Contact: 202-393-4484

ACNP (Amer. College of
Neuropsychopharmacology)

43rd Annual Meeting
December 12-16, 2004
San Juan, Puerto Rico
Contact: (615) 322-2075

UPCOMING 2005...

American Counseling Association
Annual Convention

April 6-10, 2005
Atlanta, Georgia
Contact: 800-347-6647;
www.counseling.org

ASAM (American Society of Addiction
Medicine); 36th Annual Conference

April 15-17, 2005
Dallas, Texas
Contact: 301-656-3920; www.asam.org

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A.T.F.

Straight Talk... from the Editor

Methadone On The Road, Again

Paving the Way for Better MMT Patient Care

During our ongoing news scans, reports come in weekly of a community someplace in America facing severe opioid-addiction problems. And, while civic leaders may grudgingly come to accept the value of methadone maintenance treatment (MMT) as a solution, they still fight against the opening of local clinics. (See "MMT Perspectives" starting on page 1.)

As one newspaper editor stated: "We're not against methadone clinics. We're against the location of the clinics." It seems prospective clinic locations are always too close to schools, or playgrounds, or churches, or homes, or whatever. That's NIMBY— an acronym attributed to comedian George Carlin — which stands for "Not In My Backyard."

Another news report observed that opponents of MMT clinics envision them serving "low-life junkies" with needles hanging out of their arms. They overlook the fact that such clinics serve their neighbors, family, and friends.

One county commissioner put the situation in more proper perspective: "They [MMT clinics] are not unlike dialysis centers that treat kidney ailments." However, an adversary replied that such medical centers do not have patients lingering in the parking lot or drug dealers loitering nearby. So, justified or not, the spoiled reputations of some MMT operations have resulted in community resistance in many regions of the country.

Mobile methadone programs have provided a solution for circumventing problems of finding acceptable clinic locations. While these programs have been successful, there is a question as to whether they adequately meet patient needs for comprehensive addiction-recovery services. Still, patients do appreciate the convenience and there are indications that mobile programs effectively retain them longer in treatment.

Perhaps, mobile methadone can "open the gate," as it were, allowing MMT into underserved communities where it can prove its worth, gain trust, and lead to permanent clinics. This happened in Brockton, southwest of Boston.

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some MMT
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So, rather than reject MMT outright, maybe more communities should be looking at mobile programs as a way to at least start dealing with their opioid-addiction crises. That's going on now in Vermont. Hopefully, mobile programs can be a start on the road toward better serving MMT patient needs.

NEW SURVEY: Sleep Disorders?

In this edition we venture into another area of addiction recovery in MMT that has received relatively little attention — sleep disorders. We look forward to reader feedback on this topic; perhaps, submitting their own brief articles on the subject. *Please respond to the following survey questions:*

1. What percentage of patients at your MMT clinic have complained of persistent sleep problems? ____%
2. Do you believe sleep disturbances trigger drug or alcohol abuse during MMT: No; Yes; Possibly.
3. At your clinic, are patients typically prescribed medications to help them sleep?
 No; Yes. If yes, please indicate what is prescribed: _____.
4. Are you responding as a patient, or clinic staff member?

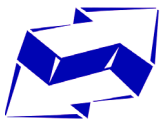
There are several ways to respond to AT Forum surveys:

A. provide your answers on the postage-free feedback card in this issue; **B.** write, fax, or e-mail [info below]; or, **C.** visit our web site to respond online. As always, your written comments are important for helping us discuss the survey results in an upcoming edition.

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Feedback Q&A

Questions submitted by *AT Forum* readers; answers from the editor.

Does Methadone Spoil?

Q: With greater flexibility in prescribing doses of take-home methadone now permitted by Federal Regulations, will liquid methadone "go bad" if stored for too long? What is the best way to dispense and store it?



A: Since up to 30 days of methadone hydrochloride may be prescribed at one time for take-home, there has been concern about the extended shelf life of liquid methadone. Also, once the original methadone container is opened for dispensing, FDA regulations prohibit manufacturers from attesting to long-term product stability.

However, independent research and commentary confirms that methadone itself is a stable medication. In one published report, pharmacists noted that potential problems relate more to what is used to dilute the methadone at the time of dispensing, due to possible contamination with mold or fungal growth.[1]

Bacterial growth also might be a concern. One investigation found that storage of methadone mixtures at room temperature fostered visibly unacceptable bacterial growth within 2 weeks, unless appropriate preservatives were included (such as, sodium benzoate). Some manufacturers do include such preservatives. As for potency, methadone mixed with Kool-Aid, Tang, apple juice, or Crystal Light and refrigerated (41°F) maintained its strength for 30 days or much longer.[2]

Based on a review of existing literature and a consensus of opinion among consulted pharmacists, the American Association for the Treatment of Opioid Dependence (AATOD) issued several recommendations in June 2004:[3]

1. Dilution of methadone hydrochloride products should be with distilled water only.
2. New, clean, air tight, light resistant containers should be used for dispensing.
3. Take-home containers should be securely refrigerated as soon as possible, and remain refrigerated until used.

AATOD specified that, if these procedures are followed, liquid methadone should remain stable for up to 30 days from the date of MMT clinic dispensing.

However, there may be a question as to whether dilution at the time of clinic dispensing is required or necessary. Federal Regulations do not specifically require dilution.[4] Typically, product labeling specifies, "to be diluted with water or other liquid to 30 mL (1 fl. oz.) or more before oral administration." [5] This could mean dilution "just before the dose is taken," in which case the patient might be the one to add liquid for dilution. Tap water or other fluid could be used, since storage is not a concern. Dilution simply makes it easier to consume the full amount of otherwise thick, undiluted methadone that is in the take-home container.

1. Allen LV, Stiles ML. Methadone lemonade. *U.S. Pharmacist*. 1988 (September):82.
2. Lauriault G, LeBelle MJ, Lodge BA, Savard C. Stability of methadone in four vehicles for oral administration. *AJHP*. 1991;48:1252-1256.

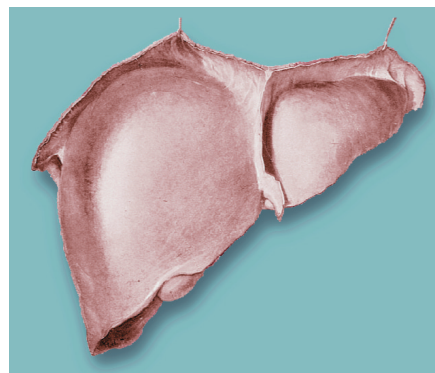
3. Parinno MW. Shelf life for methadone hydrochloride products following OTP compounding [memo]. June 11, 2004. AATOD.
4. Federal Register. Opioid drugs in maintenance and detoxification treatment of opiate addiction; final rule. 2001 (Jan 17);66(11):4085. 42 CFR Part 8. Available at: <http://www.atforum.com>.
5. Package Insert. Methadose® Oral Concentrate. 2001.

Hepatitis C (HCV) Treatment During MMT?

Q: Are treatments for HCV as effective in methadone-maintained patients as they are in the general population?

A: Up to 9 of every 10 injection drug users entering MMT programs may be infected with hepatitis C (HCV), so this is an important question. It is especially critical since MMT patients face many barriers to liver transplantation, which may be necessary for survival if HCV treatment is denied or ineffective.

This topic was previously discussed from an evidence-based perspective in a series of 4 *AT Forum* articles during 2001-2002.[1] The bottom-line answer is that



HCV treatments continue to improve and MMT patients can respond as well as any other persons. Furthermore, it is not necessary or recommended that patients be withdrawn from methadone prior to treatment.

A recently reported clinical study found that, compared with general population subjects, MMT patients had a comparable sustained viral response (SVR) to anti-HCV treatment with peginterferon and ribavirin.[2] Pegylated interferon (or peginterferon) is a newer, longer-acting version of interferon. SVR denotes the absence of virus 6 months after treatment, which some describe as a "cure." In this study, more MMT patients had difficulties with compliance or requested discontinuation of treatment only during the first 2 months.

Of further interest, the latest research has reported that the peginterferon-ribavirin combination also is quite effective in patients co-infected with HCV and HIV (the virus causing AIDS).[3,4] This could be important for many MMT patients; although, these studies did not specifically include any methadone-maintained subjects.

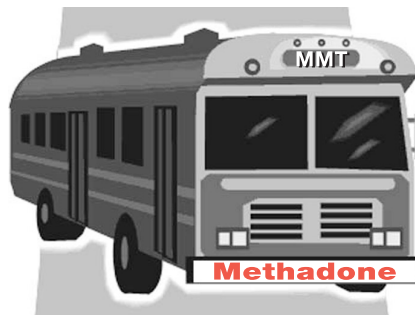
1. Addiction Treatment Forum, Liver Disease in MMT: Treatment & Transplant – Part 1-4. Available at: http://www.atforum.com/SiteRoot/pages/addiction_resources/Liver%20Dis%20in%20MMT.PDF.
2. Mauss S, Berger F, Goelz J, Jacob B, Schmutz G. A prospective controlled study of interferon-based therapy of chronic hepatitis C in patients on methadone maintenance. *Hepatology*. 2004;40(1):120-124.
3. Torriani FJ, et al. Peginterferon alfa-2a plus ribavirin for chronic hepatitis C virus infection in HIV-infected patients. *NEJM*. 2004;351(5):438-450.
4. Chung RT, et al. Peginterferon alfa-2a plus ribavirin versus interferon alfa-2a plus ribavirin for chronic hepatitis C in HIV-coinfected persons. *NEJM*. 2004;351(5):451-459.

resistance to a new MMT clinic in 1987, Boston-based Habit Management started delivering methadone using a converted motor home to patients in Brockton southwest of the city. It may have been the first such program in the U.S.

By 1994, the Habit Management mobile program had expanded to two routes – using two customized vans, plus a third vehicle as a backup – serving 185 patients. At the time, Leonard Kupsc, who was directing the program, noted that the vans served a vital need but patients also needed easy access to the full range of comprehensive services that would help sustain addiction recovery over time.

Fast forward 10 years to 2004. Habit Management has 12 permanently-sited MMT clinics (10 in Massachusetts, 2 in New Hampshire) serving 5,000 patients. At the same time, according to Tom Magaraci, Chief Executive Officer, their mobile methadone program has grown more than 62% to serve 300 patients in 3 southwest Boston locations and the surrounding communities. The old vans were replaced by larger mini-buses.

Perhaps, the best news is that the former stopping-off point, in Brockton, *now houses a permanent clinic.* “That successful



mobile operation allowed us to develop very positive working relationships with community officials. Over time, we were able to quell fears and educate the community,” Magaraci says. “As a first step, we were permitted to establish a fixed site in Brockton offering counseling services. Later, we were allowed to provide methadone dispensing there as well.”

Brockton now serves as a terminal for the mini-buses serving other southwest communities. Patients from those locales come to Brockton for counseling and allied services, saving them from having to travel into the city.

It had been hoped that community medical centers (e.g., hospitals) might be willing to dispense methadone in an emergency, but they have remained steadfastly resistant to the idea. However, Magaraci says they’ve only missed one day of operation over the

years, and nearly all patients were still able to get to a clinic site for dosing.

Efficiency in Peabody

To the north of Boston, Bob Potter, Director of Development at Community Substance Abuse Center, has organized a mobile program during the past 2 years serving 350 patients daily in Peabody and the surrounding area. Overall, the organization has 10 MMT clinics serving 3,000 patients in Massachusetts, Connecticut, and New Hampshire.

The mobile program uses a converted bus traveling each day to a dosing site in a private parking lot behind an unused building. There are 2 dosing stations for nurses who travel with the bus. A third staff member handles traffic control in the parking lot, while a fourth checks patient identification and handles administrative matters – one of those two staff persons drives the bus. The bus is handicapped accessible and also has a bathroom.

“The dosing process is very efficient and there is no loitering at the site after the bus leaves,” Potter remarks. “Plus, there have been no behavioral problems in or around the bus.”

He also notes that the bus has never missed a day of operation or been late,

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Amsterdam – Mobile Methadone Genesis

In 1979, the European city of Amsterdam faced a crisis. One thousand heroin users had infested the center of the city, creating an urgent need for medical and social assistance.

Since those addicts refused to attend local healthcare clinics, a rebuilt city bus was hastily enlisted to dispense methadone at 6 locations daily. As a “harm reduction” effort, the program also distributed clean injection needles and condoms.

This was a “low threshold” approach, in that methadone-by-bus participants were not required to receive counseling or be illicit-drug free. It was expected that many would become abstinent and “graduate” into full-service methadone clinic programs. While the bus proved effective for many patients, a considerable number of hard-core drug users showed no motivation to forego illicit drugs. Consequently, there was increasing HIV/AIDS infection in this population. Still, the mobile methadone project proved valuable in establishing ongoing contacts with the city’s addict population and in helping to manage the Amsterdam drug crisis. The program was improved over the years; for example, by offering more patient education on HIV prevention.

Source: Buning EC, Van Brussel GHA, Van Santen G. The ‘methadone by bus’ project in Amsterdam. *Br J Addiction.* 1990;85:1247-1250.

Baltimore Mobile Program Boosts Retention

Of the various mobile methadone programs to date, few have reported on specific outcome measures. Researchers in Baltimore collected data during a 37 month period (1993-1995) comparing MMT-patient retention in fixed-site clinics with a mobile program serving the same municipal areas. One mobile unit served as a dispensing site, while a second self-propelled trailer served as a counseling and general medical services facility.

The researchers found that retention in treatment for mobile-program patients was nearly 4 times greater than for those attending clinics: median 15.53 vs 3.90 months. The mobile program offered patients more convenient and less costly treatment, as transportation to a clinic was eliminated as a barrier. However, during the study period, mobile-program patients also were not charged a fee for services and the program was somewhat permissive in tolerating occasional illicit-drug lapses; so, these factors alone might have favored better retention. Still, the value of mobile programs for enhancing retention in MMT by providing more convenient access to services is apparent from this study.

Source: Greenfield L, Brady JV, Besterman KJ, De Smet A. Patient retention in mobile and fixed-site methadone maintenance treatment. *Drug Alcohol Depend.* 1996;42:125-131.

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even in the worst weather. However, he does have backup vehicles as a precaution. "A mobile program like this puts you in the transportation business," Potter adds, so there actually are cost disadvantages over a permanent clinic and considerable effort is needed to keep the operation running.

Why not just establish a fixed-site satellite dosing center in Peabody? "It was the only way to overcome community resistance and local regulations," Potter acknowledges. "We've found that patients are very appreciative of having this service in their communities, sparing them the travel each day for methadone." However, patients are still required to make a trip to a clinic for counseling and other services, usually once weekly.

Potter believes that the success of their mobile program has helped gain greater acceptance of methadone treatment overall in the state. They hope to expand the program to other outlying locations.

Newest Frontier – Vermont

MMT in Vermont has had an interesting, albeit brief, history.

Soon after the state launched its very first MMT program, in 2002, it was filled to its 100-patient capacity, plus another 150 on a waiting list (see AT Forum, Winter 2004; Vol. 13, No. 1). Still, there were severe restrictions hindering program growth, such as a prohibition of methadone take-home doses and a requirement that clinics be housed within major medical centers.

Those restrictions were withdrawn last June (2004), opening the door for expansion of MMT programs in the state. Unfortunately, community resistance – NIMBY – has blocked that opportunity.

Of particular concern is the "Northeast Kingdom" consisting of 3 mostly rural counties in the northeast corner of Vermont (see *map*). Reportedly, the area has up to 600 opioid-addicted residents, with an additional 200 actively seeking treatment for the disorder.

According to Barbara A. Cimaglio – Deputy Commissioner, Vermont Department

of Health, Division of Alcohol and Drug Abuse Programs – many persons in the region are being transported to Burlington (home of the only current clinic in the state) or surrounding states for methadone treatment. The state pays about \$450,000 annually for this approach and patients are traveling hours each day to receive the medication.

In many ways, Vermont has taken a progressive approach to MMT. Health Commissioner Paul Jarris, MD has actively approached community leaders, educating them on this proven addiction treatment. And, Cimaglio emphasizes that MMT is viewed as a long-term medical therapy; "the goal is not necessarily to get people off of methadone but to meet the individual needs of patients in recovery."

Community leaders conceded that

they had a serious drug problem and that MMT offered a worthwhile solution. Yet, when it came to the prospect of opening an MMT clinic in the Northeast Kingdom, they strongly resisted, fearing their small towns would be inundated with drug addicts seeking treatment.

Therefore, Cimaglio notes, they decided to pursue a mobile methadone program and circulated a request for proposal (RFP) to addiction treatment organizations. Two

care providers bid on the project to bring methadone to the cities of Newport and St. Johnsbury. In July, the state selected CDP (California Detoxification Programs), which is part of San Francisco-based Bay Area Addiction Research and Treatment or BAART, to operate the program.

Many challenges lie ahead. According to Cimaglio, they anticipate serving 200 patients; however, providing daily service to rural areas with brutal winter weather could pose difficulties. And, patients will still need counseling and ancillary services, which she says might be provided by local health care centers. Details of how the program will operate are in development and, if it is successful, Cimaglio expects that this approach might be expanded to serve more patients in other portions of the state.

Clinical Concepts Continued from Page 1

affliction and practically every adult will experience self-described insomnia at some point in life. For many, insomnia is a passing response to life stresses. But, persistent sleep disorders may be symptomatic of more serious conditions.[3]

Lack of sleep can have serious consequences. Increased risk of depression, impaired breathing or heart disease, memory deficits, and work- or traffic-related accidents have been associated with sleep disturbances.[4] For substance-addicted persons, or those in recovery, sleep deprivation can trigger escalating drug and alcohol abuse or relapse.[4,5]

Addiction-Related Sleep Problems

Persons who abuse alcohol and other drugs are at high risk for sleep disorders. This is due to the direct negative effects of those substances or their withdrawal on normal sleep architecture.

Attempting to reduce or stop substance abuse often triggers insomnia or disrupted sleep patterns.[4] Sleep is not immediately recovered even if drug or alcohol abstinence is achieved and, in fact, more normal sleep may require months or even years to return.[2]

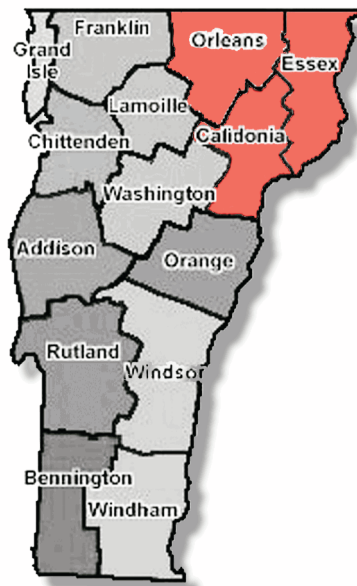
Specifically relating to opioid drugs, some studies have found that the primary effect on sleep of acute opioid administration is to hasten falling asleep, but the restfulness of sleep and total sleep time are reduced. Chronic opioid use may lead to tolerance of some negative effects on sleep, although more serious insomnia may develop.[2]

There is little research on sleep disturbances during withdrawal from opioids. However, clinical experience suggests that insomnia is a common and troublesome feature during withdrawal and requires specific attention. Ironically, opioids are helpful in treating some sleep disorders, such as restless leg syndrome (RLS).[2]

Sleep Disturbances in MMT

It is believed that methadone may contribute to insomnia by disrupting normal sleep phases during the night; however, the exact reasons for this are unknown. MMT patients also have a high prevalence of depression and anxiety disorders, which independently and negatively affect sleep.[1]

Small studies have indicated increased disruptions of sleep architecture, including disturbed breathing (apnea), among methadone-maintained patients.[6,7] In one sampling of patients in MMT for more



Clinical Concepts
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than 2 years, 41% continued alcohol abuse and met criteria for alcohol dependence. Among those patients, more than half (54%) said they used alcohol to help them sleep.[8]

A recent study by Stein and colleagues, and the only one of its kind to date, examined the relationship of sleep disturbances and demographic, mental health, drug use, and other factors in 225 MMT patients.[1] Subjects were mostly Caucasian and male with a mean age of 41 years. The average methadone dose was 93 mg/day and tenure in MMT averaged 3.2 years.

Sleep disturbance was measured using the Pittsburgh Sleep Quality Index (PSQI), which assessed 7 dimensions: sleep duration, efficiency (ratio of actual sleep to total hours in bed), latency (time to fall asleep), disturbance (awakenings during night), daytime dysfunction, subjective sleep quality, and frequency of using sleep medications. A total score could range from 0 to 21, with a score greater than 5 indicating serious sleep difficulties.

Other factors possibly contributing to poor sleep also were evaluated. These included employment status, use of alcohol and illicit drugs, and pain.

Most MMT patients (84%) had serious sleep problems, with PSQI scores of 6 or higher (mean 10.64). More than a third of the subjects had major depression and

**Most MMT patients (84%)
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more than a third had
depression, and half
suffered anxiety.**

nearly half had general anxiety disorder.

Overall, the mean PSQI score in this MMT population was nearly identical to that reported for alcoholics in treatment. Depression, anxiety, nicotine dependence, body pain, and unemployment were most significantly associated with poorer global sleep quality during methadone maintenance; however, methadone dose was not a contributing factor in the overall analysis. Approximately 14% of patients reported ongoing alcohol, heroin, and/or sedative abuse.

It was unclear whether the reported sleep disturbances began during active drug abuse, developed at some time unrelated to drug use, or coincided with MMT. Stein et al. concluded that targeting modifiable psychological and medical risk factors that are most strongly associated with sleep disturbance may improve quality of life during MMT.

Therapy for Sleep

Untreated sleep disorders may influence continued drug abuse or relapse in

MMT patients who are attempting to self-medicate their distress.[1] And, the use of non-addicting sleep therapies is critical in this population.

In one of the few reviews of therapies for sleep disorders specifically in patients with addictive disorders, Karam-Hage observed that there are 3 broad options available: behavioral therapy, over-the-counter (OTC) products, or prescription medications.[4] In the substance-addicted patient, no particular behavioral technique has been validated or established as more superior than others.

Most OTC remedies for sleep disturbances contain an antihistamine (e.g., diphenhydramine [Benadryl]). However, these agents can disturb natural sleep stages and cause morning drowsiness.[4] They also are contraindicated in persons with certain medical conditions, such as prostate problems.

Melatonin, a food supplement implicated in sleep regulation, has been used with mixed results. Valerian, an herbal product, appears to improve the subjective experience of sleep but no studies in substance abusers have been reported.[4]

Prescription medications for sleep have traditionally belonged to the benzodiazepine group. Their use in substance abusers, or those in recovery, is controversial since they have addictive potential.

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The Architecture of Sleep^[2,3]

Sleep hath its own world, and a wide realm of wild reality.
And dreams in their development have breadth,
and tears, and tortures, and the touch of joy.
Lord Byron, *The Dream*

Normal sleep follows a pattern of stages involving changes in brain waves, muscle tone, eye movement, and autonomic activities (such as heart beat and breathing). This “architecture” is important for restful, restorative sleep.

Falling asleep progresses through a series of increasingly deeper stages. The cycle moves from an awake state, to eyes-closed drowsiness, to light sleep, and then into deep and very deep sleep. It is believed that the greatest physiologic need exists for the deepest sleep stage, which also is credited with helping to preserve mental health.

Another important stage of sleep involves rapid eye movement (REM), which usually appears after a period of deep sleep. Eyes actually move rapidly behind closed lids, while the person remains asleep. Most of the REM sleep occurs in the second half of the night, consuming about a quarter of total sleep time.

REM sleep may be important for learning and memory processes. Dreaming most commonly occurs during REM sleep, and persons deprived of this sleep stage may develop behavioral and mood disturbances.

As a person ages, there is a downward trend in sleep time. The need for sleep does not diminish; rather, sleep patterns typically exhibit less sleep at night and decreased sleep efficiency with more awakenings.

A.T.F.



New, more selective, benzodiazepine-like medications have been promoted as being less likely to produce dependence. These include zolpidem (Ambien), zaleplon (Sonata), and zopiclone (Imovane). However, there have been reports of abuse of these drugs and at higher doses they act much like benzodiazepines.[9,10]

Karam-Hage and colleagues have reported gabapentin (Neurontin) to be an effective pharmacotherapy for sleep in substance abusers.[11] Patients are started at 300 mg/day and titrated up to a maximum 1800 mg before bedtime (average 900-1200 mg/day). In recovering alcoholics this medication improved sleep and had a positive effect on preventing relapse.[12]

Antidepressant drugs, such as mirtazapine (Remeron) or nefazodone (Serzone), may help alleviate insomnia and improve sleep architecture.[4] In patients with depression, mirtazapine reduces sleep-onset time, increases total sleep time, and leads to improvement in sleep efficiency.[13] No data are available on these and other sedating antidepressants among substance abusers, although this population frequently experiences depression. It should be noted that some SSRI antidepressants have been implicated as causing insomnia.[1] or in worsening limb movement disorders (e.g., RLS) that disrupt sleep.[5]

Karam-Hage noted that sedating atypical antipsychotics (olanzapine [Zyprexa] and quetiapine [Seroquel]) have been suggested as alternative sleep aids for substance abusers. They may be useful due to their sedative effects and impact on reducing background anxiety. Other possibilities, like mood-stabilizing agents with sedating qualities (e.g., topiramate [Topamax]), need to be explored further.[4] Newer medications – such as GABA modulators, melatonin agonists, corticotropin-releasing factor antagonists, and modified-release non-benzodiazepine preparations – are in development.[5]

Clinical Approach

Helping patients in addiction recovery with sleep disorders poses a challenge, especially when there also are comorbid psychiatric problems such as depression that may negatively affect sleep [2]. Screening for sleep problems among MMT patients would be a first step.[1]

Problems to consider include: difficulty initially falling asleep (sleep latency), multiple awakenings during the night, awakening earlier than the expected or desired time, difficulty falling back to sleep after

Getting a Better Night's Sleep^[2,3]

A proper environment and daily habits – called sleep hygiene – can be essential ingredients for better, more refreshing sleep. Here are recommendations from experts:

Set a schedule:

Go to bed at a set time each night and get up at the same time each morning. Disrupting this schedule may lead to insomnia. "Sleeping in" on weekends makes it harder to wake up early on Monday morning because it re-sets the sleep cycle for a later awakening. Daytime napping will reduce sleep time at night.

Control the bedroom atmosphere:

The sleep area should be separated from work and play areas. Noise and lighting should be minimized to allow for optimal relaxation. Maintain a comfortable temperature in the bedroom. Extreme temperatures may disrupt sleep or prevent falling asleep.

The bed is for sleeping:

Other than sleeping (and possibly sex), the bed should be used for no other activities, such as working, watching TV, eating, or reading. Associating other activities with the bed trains your mind to stay alert in bed, which defeats falling asleep.

Relax before bed:

A warm bath, reading, or another relaxing routine can make it easier to fall sleep. You can train yourself to associate certain restful activities with sleep and make them part of your bedtime ritual. Avoid eating meals, especially spicy or heavy foods, or drinking large quantities of liquid close to bedtime.

Avoid caffeine, nicotine, and alcohol:

Drinks or other products containing caffeine act as stimulants and keep people awake. Smokers tend to sleep lightly and often wake up in the early morning due to nicotine withdrawal. Alcohol robs people of deeper more relaxing sleep and keeps them in the lighter stages of sleep.

Don't lie in bed awake:

If you can't get to sleep, don't just lie in bed; the anxiety of being unable to fall asleep can actually contribute to insomnia. Leave the bedroom and do something else, like reading, watching television, or listening to music until you feel drowsy. Relaxation or meditation techniques help some people, if properly applied.

Sleep until sunlight:

If possible, wake up to sunshine or use very bright lights in the morning. Sunlight helps the body's internal biological clock reset itself each day. Some sleep experts recommend exposure to an hour of morning sunlight for people having problems falling asleep.

Exercise:

Try to exercise 20 to 30 minutes each day. Daily exercise often helps people sleep, although a workout soon before bedtime may interfere with sleep. For maximum benefit, try to get exercise about 5 to 6 hours before going to bed.

Tell your doctor if sleeping problems continue:

If you have trouble falling asleep night after night, or if you always feel tired the next day, then you may have a sleep disorder and should see a physician. Certain medications hinder sleep and the timing of dosing may need adjustment. Your primary care physician may be able to help; if not, you can probably find a sleep specialist at a major hospital nearby. Most sleep disorders can be treated effectively, so you can finally get that good night's sleep you need.



Clinical Concepts
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premature awakening, or some combination of these complaints.[3]

Several steps have been recommended for evaluating sleep disturbances in persons with addictive disorders.[2]

- Obtain a history of the amount of sleep actually experienced during a typical 24-hour period. Assess whether shifting work schedules or other activities are complicating the situation. Patient-maintained sleep diaries can be helpful.
- Consider the potential for psychosocial and/or medical conditions that can interfere with sleep. A careful medical and psychiatric assessment should include an inventory of all OTC products, medications, and substances of abuse – including alcohol, nicotine, and illicit drugs – that the person is taking. Careful attention should be devoted to symptoms of anxiety, depression, and stress.
- Inquire about possible features of organic sleep disorders or contributing factors: e.g., snoring, breathing disruptions, obesity, hypertension, or sleep-related limb-movement disorders.
- Question the patient about whether the “sleep hygiene” environment is conducive to proper relaxation. (*See side box, “Sleep Tips.”*)

If an underlying disorder – such as sleep apnea or RLS – is suspected, referral to a sleep specialist for further assessment could be appropriate. Detected psychiatric conditions should be treated and, again, specialist consultation might be needed in managing these.[1,2]

In the final analysis, since opioids including methadone appear to affect sleep architecture, MMT patients may have to accept some degree of sleep disturbance as a normal part of the addiction recovery process. However, it is vital to also consider that a return to more normal sleep patterns would require stabilized methadone maintenance. For example, a person who is receiving inadequate methadone dosing could be frequently awakened during the night by opioid-withdrawal symptoms, including pain.[1]

Unfortunately, there do not appear to be any published recommendations of pharmacotherapies for sleep specifically in MMT patients. The choice of which non-addicting medications might best help to resolve sleep problems and retain methadone patients in treatment needs further study.[1] As a beginning, please respond to the sleep survey in this edition of *AT Forum* (see “From Editor” on page 2).

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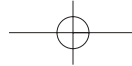
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Please respond to the following survey questions:

1. What percentage of patients at your MMT clinic have complained of persistent sleep problems? _____%
2. Do you believe sleep disturbances trigger drug or alcohol abuse during MMT:
 No; Yes; Possibly.
3. At your clinic, are patients typically prescribed medications to help them sleep?
 No; Yes. If yes, please indicate what is prescribed:
_____.
4. Are you responding as a patient, or clinic staff member?

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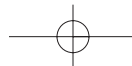
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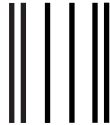
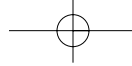
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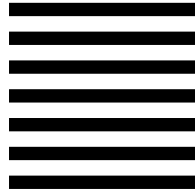
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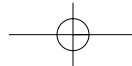


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