Graduate Faculty Psychology Bulletin
Volume 3, No. 1, 2005

Methadone Maintenance in Older Adults: An Exploratory Study

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Abstract ~ Methadone has been used for the treatment of opioid addictions since the early nineteen-sixties. It is estimated that more than 200,000 individuals take methadone to control their opiate addiction (Blaney & Craig, 1999). Many of those individuals (~20%) have been in opioid-substitute treatment for 10 years or more (SAMHSA, 1994).

A review of the literature indicates that relatively little is known

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This proposal was accepted by the Institutional Review Board at New School University/Beth Israel Medical Center in fall 2004.

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about the effects of long term methadone use and its interaction with the physical, psychological and psychosocial aspects of the aging process. However, given the steady aging of the population in general and the methadone maintenance treatment (MMT) population in particular, there is a compelling need for a better understanding of the risks and benefits associated with the extended use of methadone in older adults.

Beth Israel Medical Center (BIMC) has an extensive network of MMT clinics. The demographic profile of the clientele suggests that BIMC's clinics serve one of the largest populations of elderly methadone patients in the continental United States. We propose to conduct an exploratory study of BIMC's MMT population in order to document the prevalence of psychiatric, physical and psychosocial co-morbidities in the elderly members of that population (>=55 y/o). By comparing this profile with: (a) the profile of a representative sample of younger MMT patients (18-54 y/o); and (b) published prevalence data from the non-MMT, elderly population, we hope to identify areas of dysfunction and modes of adaptation that appear to be uniquely attributable to the interaction of long term methadone use and aging, and thus possible candidates for further and more extensive study.

Introduction

Methadone Maintenance: Background

Methadone, a synthetic opioid agonist, was invented in Germany during the Second World War and was introduced as a maintenance treatment for opioid addiction in 1965. Today, it is the most widely used pharmacological intervention for opioid-dependent individuals (Ball & Ross, 1991). However, given that methadone maintenance is a relatively recent development, it should come as no surprise that there is little information in the research literature concerning older adults in methadone maintenance treatment. Moreover, much of the literature that does exist is dated and pro-

vides little direction for current practice (Gurnack et al, 2002).

The concern regarding lack of information in this area is twofold for programs specializing in the treatment of opioid addiction. First, the relative proportion of older adults that will be served by methadone maintenance treatment programs (MMTP) is expected to rise dramatically over the next decade, mirroring the demographic shift in the population at large. This means that understanding the potential pitfalls and benefits of long term methadone treatment in the elderly is crucial. For example, it is not at all clear to what extent the interaction between the analgesic properties of methadone and the pain-related maladies of aging can explain the tendency for elderly methadone patients to prefer higher doses of methadone (Hiltunen et al, 1995). Second, the psychosocial tasks and challenges associated with the sixth decade of life and beyond are significantly different than those of young adulthood (Pascarelli & Fischer, 1974). How these psychological challenges interact with the externally imposed routines of MMTPs has been largely unexplored. For example, for some elderly individuals, the physical challenge of getting to the clinic on a daily basis coupled with the indignity of being counseled by someone half their age may come to constitute a highly stressful experience. On the other hand, for another group elderly patients, the daily structured routine and the opportunity for social contact may be a potent source of support and reinforcement (e.g., Brown, 1974).

Older Adults and Methadone Treatment

Demographic Distribution

Methadone has been used for the treatment of opioid addictions since the early sixties. It is estimated that approximately 200,000 individuals take methadone to control their opiate addiction (Blaney & Craig, 1999). Many of those individuals (~20%) have been in opioid-substitute treatment for 10 years or more.

Furthermore, more than 11% of all methadone patients are believed to be 45 years of age or older (Substance Abuse and Mental Health Services Administration [SAMHSA], 1994).

With respect to the New York City methadone maintenance treatment (MMT) population, Pascarelli and Fischer reported in 1974 that 0.5% of the 34,000 individuals in MMT were over the age of 60. However, based on the finding that 34% of the population was over the age of 40, they also predicted that the relative proportion of patients over the age of 60 in this population would necessarily increase over time.

At BIMC, which has one of the largest MMTPs in the United States, it is estimated that approximately 60% of the clientele are 40 years of age or older, and about 50% of those aged 50 years of age or older have been in MMT for at least 10 years.

Clinical and Psychosocial Characteristics

What is currently known about the elderly methadone population can be summarized in the following observations and findings:

1. Patients who have been on methadone maintenance over the past two to four decades are now more likely to be seen in geriatric settings such as medical and psychiatric clinics and in long term care facilities (Gurnack et al., 2002; Miller et al, 1991)

2. Older patients on methadone maintenance are less likely to request detoxification and tend to prefer to continue the dose of methadone that they received when they were younger (Gurnack et al., 2002; Hiltunen et al, 1995). This in part may be related to decreased tolerance to the physical changes induced by changes in methadone blood levels.

3. It is also reported that older methadone patients tend to prefer higher doses of methadone (Gurnack, et al., 2002; Miller et al, 1991).

4. Older adults have greater difficulty sustaining a street heroin habit, and while on methadone, they are likely to restrict their use to licit substances (e.g., alcohol or prescription drugs) to produce euphoria. By contrast, younger methadone patients are inclined to abuse a wider array of both illicit and licit substances to produce the same effect (Miller et al., 1991; Musselman & Kell, 1995).

5. Unlike younger methadone patients, older patients, in addition to receiving methadone for the treatment of opiate addiction, are more likely to receive methadone as an analgesic for a variety of painful malignant and nonmalignant chronic conditions (Sawe, 1986). Furthermore, since older adults, on average, are on 6.5 medications, there is a greater potential for drug-drug interactions compared to the younger population.

6. Although studies with younger methadone patients suggest that methadone does not adversely affect cognitive functioning (Appel & Gordon, 1976; Gordon, 1976), these critical studies using older subjects have not been done (Zacny, 1995).

7. A sixth and important observation is that the average elderly methadone patient faces a variety of potential obstacles with respect to accessing methadone treatment programs. These obstacles range from psychological/cognitive (e.g. memory impairments), to psychosocial/social (e.g., inadequate social supports and financial difficulties), to physical (disabilities that pre-

clude ready access and use of public transportation). These factors, alone or in combination, can be expected to promote a cycle of anxiety and uncertainty for both patients and families that gives rise to yet another set of psychological and motivational obstacles (Gurnack et al, 2002).

Study Objectives

We propose to document the degree and nature of psychiatric, physical, psychosocial and substance abuse co-morbidities, as well as modes of successful and unsuccessful adaptation to MMT in a sample of elderly (>=55) methadone patients currently receiving services through BMIC's MMTP. We intend to compare this profile with that of a representative sample of younger MMTP clients (18-54 years of age). The range of times in continuous methadone treatment for the two samples will be selected so that they reflect, at least, partially overlapping distributions. In an effort to better identify areas of dysfunction that may be inconsistent with the normal aging process, we also hope to compare the profile from the elderly sample with that of published prevalence rates for the elderly population as a whole.

Clinical Significance

Exploratory research regarding the psychiatric, physical and substance abuse co-morbidities in the older adult methadone patient population will guide future research regarding the population. Additionally, even pilot data, such as the type that will be obtained from the proposed study, should be useful in crafting and guiding interventions with older MMT patients.

Methods and Procedure

Sample

Research participants will be recruited from the population currently served by methadone clinics of the BIMC system. To ensure that the two study groups (young and old MMT patients) are representative for gender and ethnicity, and that the distance between their "time in treatment" distributions is sufficiently close, patients will be randomly selected using a modified, stratified sampling method. The target sample size is a total of 200 subjects. One hundred of the subjects, who are at least 55 years of age at the time of the study, will constitute the older adult MMT group; the remaining 100 subjects, all of whom will be between 18 and 54 years of age, will constitute the young adult MMTP group.

This sample size is desirable due to the exploratory nature of the proposed study. The study is conceived of as consisting of two phases: the present exploratory phase and a later confirmatory phase. In the exploratory phase, we are proposing to explore a number of preliminary hypotheses derived from the clinical and research literature. Because there is little guidance with regards to prior research findings, we have developed a large battery of measures. The sample size selected for this phase is estimated to be large enough to uncover clinically relevant trends and differences that are likely to exist in the larger population, while small enough to remain feasible. The second phase of the study will make use of the findings from the first phase to further refine the research predictions and to eliminate those measures that demonstrate the least amount of incremental utility. With what will, hopefully, be a much leaner assessment protocol, a much larger additional sample will be assessed. In short, we are proposing to collect a broad range of data from a relatively small number of subjects in phase 1, followed by the collection of a narrower range of data from a relatively large number of subjects in phase

2.

Subject selection criteria
A. Inclusion Criteria

1. The subject has a history of opioid abuse/dependence and currently receiving methadone maintenance treatment.

2. The subject has been in methadone maintenance treatment on a continuous basis (no breaks for longer than 6 months) for a minimum of one year.

3. The subject is older than 18 years of age.

B. Exclusion Criteria

1. The subject demonstrates active psychotic symptoms or cognitive impairments that are too severe to permit a valid assessment and thus unable to give informed consent.

2. The subject is undergoing a medically supervised administrative discharge.

Protocol

The study is a cross-sectional, multivariate, correlational study. Some of the data will be obtained from patients' records, but most data collection will involve patient interviews. These interviews will take place onsite at one or more of the system clinics, and will be conducted by one or more of the research assistants assigned to the project. It is estimated that the data collection interviews will take approximately 90minutes, which does not entail an unreasonable amount of subject burden. Patients who

agree to participate will be asked to review and sign a consent form. Following consent, the participants will be assessed in the following areas using the instruments indicated.

Any patient presenting evidence of severe depression, suicidal ideation, or psychosis during the procedure will receive appropriate and prompt psychiatric referral.

Test descriptions

Demographic data

Demographic data will be obtained including: name, age, gender, marital status, support network, primary language, mode of transport to clinic, ethnicity, educational history, religion, occupation, time since last employment, housing situation, treatment compliance, and source of income. Demographic information will be obtained both by self report form and clinic chart review.

Measure of Global Cognitive Functioning

General cognitive functioning and indication of dementia will be assessed by administration of the Mini Mental State Exam (MMSE) (Folstein, Folstein, & McHugh, 1975). Participants are not screened from study participation by a cutoff score on the MMSE. However, an ability to read and understand self report items is necessary.

Diagnosis of substance abuse

Diagnosis and screening of substance abuse will be recorded through use of the Addiction Severity Index-lite (ASI-lite), a 53-item self report scale (McLellan et al., 1992). The index is modified in the proposed study to remove redundancies in report of demographic and medical information covered elsewhere in the study.

In addition, patients will be asked their current methadone dose and to rate on a seven-point Likert scale their satisfaction (degree of feeling "held") with current prescribed dose of methadone.

Measure of Psychiatric Symptoms

For purposes of this pilot comparative study, psychiatric symptoms and conditions will be assessed via self report questionnaire rather than clinical interview. Diagnosis of psychiatric symptoms will therefore relate suggestive, rather than conclusive, differences in psychiatric co-morbidity. The Brief Symptom Inventory (BSI) will be given to yield levels of self reported psychiatric symptoms in nine diagnostic categories (Derogatis, 1983). Nine questions regarding the experience of boredom will be included as an additional measurement. Boredom is believed to be an important factor in substance abuse, psychopathology, and relapse, but is not addressed by the BSI. As impulsivity, a correlate of drug use/relapse, is also not included as a subscale in the BSI, the Barratt Impulsivity scale, a 30-item self report scale, will also be given (Barratt, 1959; Patton, Stanford, & Barratt, 1995).

Measures of Physical and Psychosocial Functioning

Experience and incidence of chronic pain will be assessed using the Brief Pain Inventory-short form (BPI) (McCaffery, M. & Pasero, C., 1999). This is a 7-item self report measure focused variables commonly related to chronic pain. Degree of sexual functioning will be assessed using the Sexual Desire Inventory, a 25-item self report measure (Derogatis, 1997). Additionally, the Strauss-Carpenter Levels of Functioning Scale (LOF)/ Personal and Social Performance Scale (PSP), an 11-item structured chart review will be administered in order to determine level at which the subject functions in daily living, personal, and social contexts (Strauss & Carpenter, 1975).

Measure of Social Support

To explore a comparison of available social support between

groups, the Duke Social Support Inventory, an 11-item self report measure will be utilized (Blazer et al., 1990). This measure reflects social support as offered by friends and relatives as well as overall satisfaction with the state of important relationships.

Measures of Life Satisfaction/Personal Well-being

The Satisfaction with Life Scale is a concise and established 5-item measure which targets the individual's overall (general) sense of subjective well-being (Diener et al, 1985). The Personal Well-Being Index is a 7-item measure assessing the individuals satisfactions with current standards of living, health conditions, personal relationships, sense of safety, future security and belongingness to one's community. Items are scored on an 11-point Lickert scale (Cummins et al, 2003).

Data Analysis Procedure

1. Standard descriptive statistics

2. Comparative participant groups will be based on ranges of age

3. Inferential statistics: Multiple Regression and Logistic Regression analyses to predict group membership (i.e., old vs. young) based on weighted linear combinations of predictor variables. Regression procedures will also be used to identify within-group and between-group predictors of current levels of adjustment, compliance, quality of life and other clinically important variables.

4. Statistical analyses will be conducted using the Statistical Package for the Social Sciences (SPSS)

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