

ORIGINAL ARTICLE

QUALITY OF LIFE ASSESSMENT OF OPIOID SUBSTANCE ABUSERS ON METHADONE MAINTENANCE THERAPY (MMT) IN UNIVERSITY MALAYA MEDICAL CENTRE

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ABSTRACT

Objective: In Malaysia, opioid abuse is an acknowledged problem with severe health and economic repercussions. Until recently, drug addicts were mainly criminalised and forcefully rehabilitated in correctional facilities. However, the high relapse rates of this approach, coupled with the high rates of blood borne infections among drug users, led to increasing acceptance of a healthcare-based approach in the rehabilitation of drug addicts. Methadone was among the medications introduced as substitution maintenance therapy in 2005 and Universiti Malaya Medical Centre (UMMC) is a centre for MMT. This study aimed to determine the effects of MMT on quality of life in patients here. **Methods:** The sample was 46 patients who attended the Psychiatric outpatient clinic in fill in UMMC. The instrument used to assess quality of life was the WHOQOL-BREF. **Results:** The study design was cross-sectional with retrospective elements. Baseline QOL scores were obtained from case records and follow-up scores from the month of September 2007. Statistically significant improvements in all four domains of WHOQOL-BREF were found. Physical: $p < 0.01$, C.I. 1.46-3.05. Psychological: $p < 0.01$, C.I. 1.44-3.11. Social: $p = 0.03$, C.I. 0.66-3.05. Environmental: $p < 0.01$, C.I. 0.85-2.24. **Conclusion:** Methadone maintenance therapy substantially improves quality of life in ex-opioid abusers. *ASEAN Journal of Psychiatry, Vol.10, No.1 Jan – June 2009: XX*

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Introduction

Substance abuse is a worldwide problem that causes significant damage to

individuals, families and communities. Statistics from the World Health Report 2002 show that 8.9% of total burden of disease worldwide is due to abuse of

psychoactive substances, which include tobacco, alcohol and illicit drugs.[1] Global estimates show that in 2002, there were 185 million illicit drug users, with psychoactive substance use higher in developed than in developing countries.[2] According to the United Nations Office on Drugs and Crime, cannabis, amphetamines, cocaine and the opiates are the most commonly used illicit drugs, in order of mention.[1]

On a global scale, opioid abuse in general populations is relatively lower than other illicit drugs, with an estimated 13.5 million people using it. However, opioid substance abusers make up a disproportionately large percentage of heavy drug users who seek treatment.[3] Opioid abuse causes a variety of problems. Opioid abusers are at risk of contacting bloodborne infections like human immunodeficiency virus (HIV) and Hepatitis C and also frequently experience fatal drug overdoses-mortality rates in this group may be up to 20 times higher than in a non-abuser population of same age and gender.[4]

Substitution therapy for opioid abusers utilises opioid agonists that bind to opioid receptors in the brain and reduce dependence on illicit drugs.[1] Apart from the physical benefits of reducing cravings and withdrawal symptoms, opioid substitution drugs also play a role in reducing other problems associated with opioid abuse. Their longer duration of action means they do not require frequent administration and hence enables patients to carry out activities of daily living without disruption. The spread of infectious bloodborne diseases is also curbed by the fact that they are usually administered orally.[4] Methadone and buprenorphine are the

two most commonly used opioid agonists for substitution maintenance therapy in opioid abuse.

Methadone is a synthetic opioid agonist with good bioavailability, long half-life and is well absorbed from the gastrointestinal tract.[5] These properties make it ideal for substitution maintenance therapy of opioid dependence. It is administered orally in once-daily doses and quickly achieves steady-state plasma levels after repeated administration.[5] When properly used, methadone is non-sedating, non-intoxicating and has few side-effects (constipation and increased sweating are the most common and they tend to diminish over time[6]) which affect less than 20% of clients.[5]

Methadone first came to prominence as a substitution therapy for opioid dependence in the USA through studies done by Dole and Nyswander.[7] Extensive research into methadone maintenance treatment has yielded consistent evidence that it is effective in reducing illicit opiate use, mortality rates by up to four times[8], HIV risk behaviours[9], transmission of Hepatitis B and C[10] and drug and property-related criminal behaviours.[8, 9] It also helps retain patients in treatment and is cost-effective.[5, 8, 10] There is positive correlation between methadone dose and reduction in heroin use[4], and long-term treatment is more effective in preventing relapse than shorter-term modalities.[10] However, a recent review of randomised controlled trials did not identify many studies that looked at quality of life particularly.[8]

Opioid abuse in Malaysia began as early as the 8th century and increased during

the British colonial era.[11] The extent of the problem was only acknowledged in 1983, when drugs were declared “Public Enemy Number One” and the Drug Dependents (Treatment and Rehabilitation) Act was passed, which allowed compulsory detainment of drug users for up to two years.[11] This was followed by the stated goal to be a drug free society by 2015, with harsh laws ranging from long-term incarceration to capital punishment for drug offenders.[12] Law enforcement officers vigorously arrested drug users who were initially sent to drug rehabilitation centres (DRCs) known as “Pusat Serenti”, while those with repeated relapses could be jailed and caned.[13]

Despite these severe measures, (one of the stiffest in Asia[13]) Malaysia’s drug problem continued escalating. Relapse rates in addicts discharged from DRCs were said to be as high as 90%, there was severe overcrowding in prisons,[13, 14] huge amounts of money were being spent on compulsory drug rehabilitation and Malaysia had the highest proportion of HIV infections related to injecting drug abuse in the Western Pacific region-77%.[12]

Until recently, harm reduction programmes such as substitution therapy were rejected in Malaysia as compromising its goal of becoming a drug-free nation.[14] However, combined pressure from medical professionals, non-governmental organisations and the public led to a review in treatment approach, with methadone maintenance therapy (MMT) being approved as a pilot programme in 2003.[11, 13, 14] In early 2005, methadone was formally registered as

maintenance therapy for opioid abusers.[11]

The aim of this study is to look at the effects of MMT on Quality of Life (QOL) of opioid substance abusers. While extensive research has been done into other parameters of health in substance abusers, the available literature was lacking in information on Quality of Life, which is surprising given the increasing use of QOL assessments as an indicator of the effectiveness of medical interventions.[15]

Methods

Sampling

The sampling frame of this study was the outpatient psychiatric clinic of University Malaya Medical Center (UMMC). UMMC psychiatry department is a tertiary center with full psychiatric services from child and adolescent psychiatry, adult and geriatric liaison psychiatry and addiction psychiatry. It is the first and established training center for Masters in Psychological Medicine (MPM) and will be Malaysia’s first training center for addiction sub-specialty in psychiatry.

The psychiatric clinic of the UMMC has 78 patients in its Methadone Maintenance Treatment (MMT) program. This program started in 2005 and has two phases to date namely Phase I (2005/2006) and Phase II (2006/2007). It is strictly governed by the national guidelines, which recommend suitability for treatment (opioid dependent, capable of informed consent, ages 18 years or older with proof of identity), contradictions to treatment, induction

and monitoring (self report, urine testing, clinical observation). Patients are required to complete two questionnaires at baseline, the Opiate Treatment Index and the WHOQOL-BREF prior to starting treatment. On induction of treatment, patients are monitored by two substance abuse consultant psychiatrist with help from trained psychiatric nurses on monthly to two monthly follow-ups as per the guidelines.

Study Design

This is a cross sectional retrospective study involving all patients who were treated in the MMT program of UMMC for the month of September (period of one month).

Ethical approval was obtained from the medical ethics of UMMC before study commencement. Written permission was obtained from World Health Organization (WHO) for the use of instrument WHOQOL-BREF.

All patients who attended the MMT program in the psychiatric clinic of UMMC for the month of September were approached. Verbal consent was obtained. Those who consented were recruited and asked to complete a short questionnaire designed by the study team looking at the socio-demographic details and asked to answer a quality of life questionnaire the WHOQOL-BREF in Malay. Patients who were unable to answer the questionnaires due to poor eyesight, lack of understanding or illiteracy, were assisted by the researchers to complete this. The administration of the WHOQOL-BREF was in accordance with guidelines formed by the WHO for its use. They were then given the opportunity to

elaborate on questions they had just answered or any issues related to their treatment which they wished to comment on. Baseline quality of life (QOL) was obtained from baseline WHOQOL-BREF obtained by the consultant psychiatrist on initiation of treatment. This method was employed as the study period was one month and clinic follow-ups were one to two monthly. Baseline data was needed as the study was primarily looking at MMT on QOL. Baseline and current QOL were subsequently compared allowing a 'before-after' model of studying methadone effectiveness.

Instrument

The original WHOQOL-100 instrument was developed to facilitate QOL research in different cultural settings across the world and was developed in 15 international field centres simultaneously. It is multi-lingual and different language forms of the WHOQOL are directly comparable. It has excellent validity and reliability for cross-cultural research.

The WHOQOL-100 is a comprehensive assessment of different domains which relate to QOL, It is however lengthy where respondent burden must be minimized. The WHOQOL-BREF was developed to counter this with items extracted from the WHOQOL-100. It contains twenty six questions encompassing four domains (physical, psychological, social relationships and environment) and two items from overall quality of life and general health facets. Each domain is given a score, which reflects the individual's perception of QOL in that particular domain, with higher score denoting higher QOL. All

four domains should be taken into account when evaluating overall QOL. Developed in 24 international field trial centre simultaneously, it is suitable for use as a generic QOL instrument across cultures and has been widely validated. Both WHOQOL-100 and WHOQOL-BREF version in Malay has been validated.[16,17]

Statistical Analysis

After data was collected, it was analysed using SPSS Version 15.0 for Windows (SPSS, Inc.) based on recommendations from the WHO[18]. Data was discarded if more than 20% was missing from an assessment, while domains with only one item missing would have the value substituted by the mean of other items in the domain. Each domain incorporates a different number of items, so the mean of all items in a domain was taken and multiplied by 4 to make it comparable with WHOQOL-100 scores. This was the **domain score** and ranged from 4 to 20. Means and standard deviations for all four domain scores were tabulated for

the baseline (before methadone) and follow-up. (after methadone). The scores of all domains were normally distributed, as indicated in the Shapiro-Wilk test of normality. Paired t-test was performed with the null hypothesis that MMT had no effect on QOL. The critical value of α was set at 0.05. p value was calculated, with the understanding that if p was less than or equal to α , the null hypothesis would be rejected.[19]

Results

Socio-demographic Characteristic

The total number of respondents in this study was initially 48, however two subjects had failed to complete at least 80% of the WHOQOL-BREF, and were discarded from further analysis. For the overall sample, the mean age of the subjects was 39 years (SD± 10.5 years). Most were men, Malay and achieved secondary education. Half were married and only a small number were unemployed (17.4%). (Table 1)

Table 1: Socio-demographic characteristics of study subjects (N=46)

	N	%
Age (years)		
20-29	8	17.4
30-39	18	39.1
40-49	12	26.1
50-59	4	8.7
60-69	3	6.5
Sex		
Male	44	95.7
Female	2	4.3
Ethnicity		
Malay	43	93.5
Chinese	3	6.5
Marital status		
Single	22	47.8
Married	23	50.0
Widowed	1	2.2
Occupation		

Professional/managerial	1	2.2
Agricultural/fishery/forestry	1	2.2
Military/police/fireman	2	4.3
Factory	1	2.2
Clerical/sales	2	4.3
Services	16	34.8
Own business	15	32.6
Unemployed	8	17.4
Education		
Primary	3	6.5
Secondary	39	84.8
Tertiary	3	6.5
Nil	1	2.2

Duration of Drug Use

Of the remaining 46, data on the age of first drug use and duration of drug use were available for only 31 subjects. The age of first drug use among the subjects range from 14 to 39 years old (mean = 22; \pm 6.2 years). The duration of drug use range from 1 to 40 years (mean=17; \pm 9.6 years).

Length of Treatment and Current Dosage in MMT

Most of the subjects were in the MMT for less than 6 months (Table 2). The mean length of treatment of the subjects in MMT was 10 months (SD=6.1 months). The mean of current dosage was 61 mg (SD = 15.9mg).

Table 2. Length of Treatment in MMT.

Length of Treatment (Month)	N	%
1-6	17	37.0
7-12	15	32.6
13-18	8	17.4
19-24	6	13.0

Change in Quality of Life (QOL)

There was significant improvement in all 4 domains of QOL scores for subjects in MMT ($p < 0.05$). (Table 3) The

improvements in the physical and psychological domains were the most marked, with increases of 2.26 (18.9%) and 2.28 (20.0%) respectively.

Table 3. Paired t-test comparison of all four domains in WHOQOL-BREF before and after methadone maintenance (N=46)

Domain	Range	Mean	S.D.	t	p	95% confidence interval for differences
Physical						
Baseline	7.43-18.86	11.96	2.14			
Follow-up	9.71-18.29	14.22	2.10			
Difference		2.26	2.69	5.69	<0.05	1.46 -3.05
Psychological						
Baseline	7.33-17.33	11.39	2.22			
Follow-up	6.67-18.00	13.67	2.38			
Difference		2.28	2.83	5.46	<0.05	1.44 -3.11
Social relationships						
Baseline	5.33-17.33	11.86	2.81			
Follow-up	4.00-20.00	13.71	3.01			
Difference		1.85	4.02	3.13	<0.05	0.66 -3.05
Environment						
Baseline	8.00-16.50	12.09	1.94			
Follow-up	9.50-20.00	13.63	2.18			
Difference		1.54	2.34	4.47	<0.05	0.85 -2.24

S.D.=standard deviation

Discussion

The characteristics of this sample were compared with national data on

Malaysian opioid abusers in the first six months of 2007, available from the *Agensi Dadah Kebangsaan* (National Drug Agency) [20]:

Table 4: Comparison of demographic profile of Malaysian drug users and study subjects

Demographic Profile	Agensi Dadah Kebangsaan (%)	MMT at UMMC(%)
Male	97.7	95.7
Malay	72.5	93.5
Aged 25-29	70.4	17.4
At least high school education	78.9	91.3
Employed	92.1	82.6

The only noteworthy difference is in the age profile of both groups. It appears that a majority of Malaysian drug users are in the category of 25-29 years of age, but this was not the case in this study.

There are two possible explanations: the first, externally-motivated factor, is the inherent nature of the MMT programme, with guidelines which specify an extended period of regular opioid use as

a condition of entry[11]. The second, internally-motivated factor, may be because older abusers are more keen than younger ones to have a drug-free, stable and healthy lifestyle, so they seek medical treatment for their problem. The WHO defines Quality of Life as “individuals’ perceptions of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards and concerns”. [18] It has a multi-dimensional nature, so it cannot be equated simply with terms like “life satisfaction”, “health status” or “well-being”. [18] The rationale behind the growing use of subjective evaluations as opposed to purely laboratory-based measures to assess the usefulness of health interventions stems from the recognition that we must judge therapy based on the difference it makes in how patients feel. [21] Clinicians often inaccurately assess patients’ quality of life [22] or fail to predict aspects of patients’ lives which patients themselves consider important. [23] These aspects, such as relationships, social activities [23], income, freedom or environment quality [15] may influence or be influenced by health status and yet not be strictly considered part of the health “domain”. [15,23] Moreover, there is tremendous variation among individual responses to similar states of health and disease, [15,22,23] which would render structured measures inaccurate or insensitive. [23] Information from QOL assessments can be used to initiate and monitor therapy [22], evaluate effectiveness of interventions, and as outcome measures in clinical trials. [23] They may either be generic- assessing multiple domains and providing a summary score [26], or

disease-specific- more precise in measuring specific outcomes and detecting small but important changes. [21,25]

Numerous studies have been done on the beneficial effects of methadone (detailed earlier) but only a few looked specifically at QOL. Ponizovsky *et al.* [26] concluded that methadone improved QOL within one month of induction, which remained stable until the end of the programme. The results from my study support this conclusion. Maremmani *et al.* [27] found that QOL was one of several outcomes which improved in opioid-addicted patients who completed at least three months of treatment. The only other study, to the best of my knowledge, which used the WHOQOL-BREF for assessment of QOL in opioid abusers was done by Padaiga *et al* in Lithuania. [28] This showed statistically significant improvements in physical, psychological and environmental domains of QOL but no statistically significant improvements in social domain. The results from this study roughly paralleled this pattern, with social domain showing the least significant improvement in QOL. In general, findings from this study were consistent with worldwide evidence of the benefits of methadone.

However, despite the demonstration of a statistically significant effect of methadone maintenance therapy on quality of life, this does not necessarily translate into practical or scientific significance. Improvements could equally well be due to other forms of intervention (psychosocial help comes to mind) or simply changes in life situation. In order to eliminate these other factors, a study comparing methadone and

placebo should be done. Other papers have been written comparing outcomes like withdrawal symptoms and drop-out rates[29,30], but none on QOL. However, in light of the body of current evidence supporting methadone use, such a study may be deemed ethically inappropriate. Alternatively, a study comparing methadone with no pharmacological therapy (that is, opioid abusers who do not desire to seek medical help) could be done.

As far as the researchers are aware, my work is the first of its kind in Malaysia, since methadone is a relatively new introduction on the local drug treatment front. The extent of research focus so far has been on objective health and laboratory measurements while subjective psychometric measurements such as quality of life have been relatively under-investigated. Although by no means a landmark project, the findings of my study will serve to reinforce strong international evidence that methadone maintenance therapy is a very effective pharmacological treatment for opioid abuse. Not only does it improve clinical outcomes as perceived by health workers and society in general, it also improves numerous other aspects of life as perceived by the drug abusers themselves. It is hoped that through this and similar studies, methadone maintenance therapy will gain increasing acceptance both by the health sector and government authorities in Malaysia. MMT should be made more widely available since the first two years of its implementation have shown good results, considering that the problem of opioid abuse continues to plague Malaysian society.

This observational study which investigated the quality of life in ex-opioid abusers on methadone maintenance therapy in University Malaya Medical Centre found that quality of life in a sample of 46 patients at the Psychiatric Clinic significantly improved after being on methadone maintenance therapy. This was true for all four domains assessed by the WHOQOL-BREF questionnaire and consistent with previous similar research. It is hoped that the Malaysian government will increase availability and accessibility of methadone to opioid abusers due to the success of its implementation in the last two years, to help tackle the high rates of drug addiction in the country.

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