

CAN PRIMARY CARE CLINIC RUN MMT SERVICE WELL?

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ABSTRACT

Methadone Maintenance Therapy (MMT) for opiate dependence was first started in Malaysia in 2005. The service was initially provided by psychiatric clinics in hospitals and primary care clinics. Handling patients with opiate dependency especially in a primary care clinic is very challenging due to various constraints hence the success is doubtful. 143 patients from Tampin Health Clinic were recruited from November 2006 until March 2009. Retention rate in the program was high. Significant improvement was seen in the World Health Organization Quality Of Life score (WHOQOL-BREF) in all 4 domains done at baseline, 1st year and 2nd year in the program. After joining the program, there were no new blood borne virus infection for HIV and Hepatitis B and only 1 had Hepatitis C. Minimal number of patients were involved in new drug related offences while in the MMT program. Existing primary care clinics can be empowered to scale up this service in Malaysia.

Keywords: Methadone Maintenance Therapy, opiate dependency, primary care clinic.

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INTRODUCTION

Methadone Maintenance Therapy (MMT) for opiate dependence was first introduced in Malaysia in 2005. It was carried out mainly as part of the harm reduction approach against HIV/AIDS. In the beginning, the service was provided by several government hospitals and clinics as well as private clinics. In scaling up, more centres were opened and the service was extended to other agencies including selected prisons and National Anti Drug Agency centres in 2008. In the state of Negeri Sembilan, this service was first started in a rural-based government health clinic in the district of Tampin in November 2006. A primary care clinic has several advantages in running the service as it is easily accessible, located in the community, capable of providing various medical care and patients feel less stigmatized.^{1,2} However, handling patients with opiate dependency especially in a primary care clinic is very challenging as they are marginalized individuals with multiple needs who require lifelong rehabilitation. Their needs comprise of medical, psychological and social needs (biopsychosocial aspects)³ that can affect their compliance to MMT. To meet these needs, it is unrealistic to expect the entire task to be handled by the clinic staff as they are already occupied with existing responsibilities. Moreover, there are hardly any social workers or case managers in the primary health care service in Malaysia yet. There were concerns about the success of running the service in a health clinic with existing constraints. Therefore, it is important to assess the service

provided by a primary care clinic in Malaysia. To date, there is no published local data pertaining to the issue.

Tampin Health Clinic is located in a rural area in the state of Negeri Sembilan. The district of Tampin is about 110km from Kuala Lumpur, the capital city of Malaysia. This district has a population of 90 000 people. The clinic is a general outpatient clinic that provides various integrated services catering for pre-pregnancy, antenatal, children, adolescent, adult and the elderly age groups. It receives 400-450 patients per day. The clinic has 40 staffs comprising of a Family Medicine Consultant, 6 medical officers, 3 pharmacists, 4 medical assistants, 4 staff nurses and a few others. There are no counsellors or social workers in this clinic.

The main objective of this study was to evaluate the MMT service conducted in Tampin Health Clinic. The specific objective was to determine the success of the service in term of: (1) retention rate, (2) WHO Quality of Life - Brief (WHOQOL~BREF), (3) protection from blood borne viruses and (4) drug-related legal offences.

METHODS

This was a retrospective chart review of case records in Tampin Health Clinic from November 2006 to March 2009. The inclusion and exclusion criteria followed the national standard.

The clinic also followed the standard operating procedure that was produced by the Ministry of Health (MOH) Malaysia while adding a component addressing their psychosocial needs. Several steps were taken in order to provide holistic care to the patients such as providing medical treatment and psychosocial assistance (i.e. methadone take away system, coupon system, peer support, job placement, financial assistance and social assistance). The study centre provided MMT patients general out patient care, cardiovascular screening, free anti retroviral therapy for all eligible patients, treatment for sexually transmitted diseases, tuberculosis as Direct Observed Therapy, Supervised (DOTS), treatment for depression, anxiety & psychosis, hepatitis follow up, management for addiction to other substances and many more. Referrals to specialized service were also made when indicated. An opportunistic approach utilizing simple brief advice and motivational interviewing were used to tackle emotional issues.

Networking and collaboration with various existing local agencies in the community were used to overcome problems associated with constraints in human resource. The responsibilities were shared among the clinic staff, clinic advisory panel members who comprised of community representatives and various local government and non-government agencies. Effectiveness of the service were measured based on the retention rate, WHOQOL questionnaires, status of blood borne virus infection and percentage of new drug related offences after joining the program. Only data that belonged to patients who still remained in study centre at the time of assessment were analysed for WHOQOL, blood borne viruses and drug related offences.

Definition

- a. Retention rate: Number of patients who were still in MMT from the date of recruitment.

Calculation of retention rate:

$$\frac{\text{registered patients} - \text{dropout}}{\text{registered patients}} \times 100$$

Registered patients:

Patients who started MMT at study centre inclusive of active patients, patients who transferred out to another MMT centre, patients who died or underwent legal action while on MMT and patients who defaulted.

Drop out patients include:

1. Patients who defaulted
2. Patients whose deaths were due to methadone related causes
3. Patients facing legal action due to offences committed after joining the MMT program

Total registered patients:

Patients registered in the study centre excluding transferred in cases.

- b. World Health Organization Quality of Life (WHOQOL):^{4,5}
The WHOQOL-BREF questionnaire which is a shorter 26-item version of the WHOQOL-100, was used to assess QoL at baseline, 1 year and 2 years based on 4 domain structure: (1) Physical health activities of daily living, (2) Psychological bodily image and appearance, (3) Social and personal relationships and (4) Environmental-financial resources. Calculation of the scores was based on the WHO manual and transformation of domain scores to a 0 to 100-point scale was done by using the WHOQOL-BREF transformation table.
- c. Reduction in harm related to blood borne viruses - there should be no increment from baseline in term of HIV, Hepatitis B & C status after joining the program.
- d. Percentage of new drug related offences after joining the program.

Calculation:
$$\frac{\text{number of patients with drug related legal offence made while already in MMT}}{\text{registered patients}} \times 100$$

Data was analyzed using SPSS version 15. Retention rate was calculated based on the above formula. Percentage of blood borne viruses' infection and drug related offences were derived using simple calculation. For WHOQOL-BREF score, paired t-test was used to analyze difference before and after treatment. Statistical significance was fixed at $p < 0.001$.

This study was approved by the National Institute of Health Ethical Committee (Ref No: 33 dlm KKM/NIHSEC/07/0703-01 Jld 7 dated 28 Oct 2009)

RESULTS

There were 143 patients recruited during the study period. Another 5 patients were transferred in from other centres and not included in the study. Out of 143 patients, 18 (12.5%) had transferred out to another MMT centre due to moving to another place. 12 patients (8.4%) were arrested by police and sent either to drug rehabilitation centre or prison. 1 patient (0.7%) died due to motor vehicle accident. There were 3 phases of recruitment: 1st batch (6 Nov 2006-28 Mar 2007) with 63 patients, 2nd batch (27 Nov 2007-11 Mar 2008) with 23 patients and 3rd batch (5 May 2008-25 Mar 2009) with 57 patients. Their mean age when joining the program was 39.4 years (SD 8.4 yrs, range 20-60 yrs). Table 1 showed the socio-demographic characteristics of these patients. All of them were males, the majority were Malays and almost half were married.

All of them had history of cigarette smoking with mean age of starting in the adolescent period. Table 2 showed almost all patients still retained in the program.

Table 1: Socio-demographic characteristics of respondents

Characteristics	Number (%) (n=143)
<i>Age group*</i>	
20-24 yrs	2 (1.4%)
25-29 yrs	14 (9.8%)
30-34 yrs	27 (18.9%)
35-39 yrs	28 (19.6%)
40-44 yrs	37 (25.9%)
45-49 yrs	17 (11.9%)
50-54 yrs	12 (8.4%)
55-59 yrs	5 (3.5%)
60-64 yrs	1 (0.7%)
<i>Ethnic</i>	
Malay	135 (94.4%)
Chinese	3 (2%)
Indian	5 (3.5%)
<i>Education level</i>	
No formal education	0 (0%)
Primary	8 (5.59%)
Secondary	126 (88.11%)
Tertiary	9 (6.29%)
<i>Employment</i>	
Employed / Working	126 (88.11%)
Unemployed	17 (11.89%)
<i>Marital status</i>	
Never married	61 (42.7%)
Married	66 (46.2%)
Divorced	16 (11.2%)

*at the time of joining MMT programme

Table 2: Retention rate in the methadone maintenance program

Duration of treatment	Retention rate by batch (%)		
	1 st batch (n=63)	2 nd batch (n=23)	3 rd batch (n=57)
6 months	98.4%	95.6%	96.5%
1 year	96.8%	91.3%	-
2 years	95.2%	-	-

Upon joining the programme, 18.9% (n=27) of patients were already infected with HIV, 5.6% (n=8) were infected with hepatitis B and 83.2% (n=119) were infected with hepatitis C. After joining the programme, there were no new blood borne virus infection for HIV and hepatitis B and only 1 had hepatitis C. As shown in Table 3, there was significant improvement in WHOQOL-BREF score in all 4 domains. Table 4 showed number of documented drug related offences. All new offences that resulted in legal implication occurred within 9 months of joining the program were due to positive urine test for heroin. None were due to criminal activities such as stealing or involved in robbery.

Table 4: Old versus new drug related offences

Type of drug related offences	Number (%)
Overall drug related offences out of total patients registered (n=143)	12 (8.4)
Old drug-related offences (patients hid information from staff at commencement)	9 (6.3)
New drug-related offences	3 (2.1)

Table 3: WHOQOL-BREF score before and after methadone maintenance

Domain	Mean	SD	t	P	95%CI*
<i>Physical</i>					
Difference : 0 vs 1 yr	12.84	17.41	5.67	<0.001	8.31-17.28
: 0 vs 2 yrs	19.58	16.14	7.77	<0.001	14.49-24.68
<i>Social</i>					
Difference : 0 vs 1 yr	11.91	24.12	3.79	<0.001	5.63-18.20
: 0 vs 2 yrs	22.58			<0.001	15.73-29.44
<i>Environmental</i>					
Difference : 0 vs 1 yr	8.83	15.50	4.37	<0.001	4.79-12.87
: 0 vs 2 yrs	16.19	13.66	7.59	<0.001	11.88-20.51
<i>Psychological</i>					
Difference : 0 vs 1 yr	15.15	19.65	5.92	<0.001	10.03-20.28
: 0 vs 2 yrs	22.68	18.97	7.66	<0.001	16.69-28.67

*95%CI : 95% confidence interval

DISCUSSION

This study found that drug addiction in the district of Tampin is predominantly among the Malays as reflected in a few local data from the National Anti Drug Agency,⁶ the University Malaya Medical Centre (UMMC),⁷ the Centre of Drug Research (CDR) Science University of Malaysia (USM)⁸ and a recent report from Kuantan.⁹ The predominance of Malay drug users in this study was not a reflection of the ethnic breakdown of Tampin's population as the Malays only comprise 59.9% of the population. The CDR⁸ also found that a larger proportion of the young Malay drug abusers had attained higher education. Therefore, there is a need to examine further the psychosocial factors that contributed to this phenomenon.

All the patients had history of smoking that began since their adolescent period and had then proceeded to abusing illicit substances in just 3 years time. Therefore, it is extremely important to prevent the habit of smoking amongst adolescents. There is a need to educate young people on the hazards of cannabis as it may be misconstrued as a recreational drug with little risk of addiction.

The mean methadone dose in this observational study is rather low compared to recommendation by the World Health Organization that is at least 60-80mg. Similar finding was also reported by 2 other local studies.^{7,9} Each patient's dose was based on their response towards the dose as long as not causing them to feel sleepy and not troubled by craving for heroin. Lower mean methadone dose among the respondents could be due to their smaller body size or the effect of psychosocial support but the factors were not researched in this study.

The retention rate in treatment program in this study was much higher than other studies reported. A study in Lithuania reported that out of 102 patients on MMT, 30.2% dropped out after 6 months.¹⁰ A recent review of randomized control trials by Cochrane database¹¹ found that there were 11 relevant studies regarding MMT involving altogether 1969 participants. In the review, all 7 studies for which retention could be analyzed found patients stayed longer in methadone than in comparison treatments. Among the 4 newer studies published since 2000, retention rate among patients with methadone was 68% whereas only around 15% patients without methadone retained in the study period. A recent local study by Ramli M *et al*⁹ found that the retention rate was 63%. Ideally, retention rate would be based on number of patient registered at the beginning phase of the study and number of patients still remained in treatment after certain period of time. It is difficult and perhaps not suitable to do direct comparison in term of retention rate with other studies mentioned above. This is because drug law in Malaysia differ from other countries. Patients in this study were recruited in batches and moved

from one place to another. We found that most patients, who were arrested by police for positive urine test for illicit drug when already on MMT program, joined the program again after released from drug rehabilitation centre or prison. Higher retention rate observed in this study could be because of the effect of community empowerment, interagency collaboration and psychosocial approach emphasized in this treatment centre. A case control study is needed to prove the effect of those factors towards retention rate.

This study also found a significant increment in WHO quality of life scores so as reported by a few other studies. In a study conducted in UMMC Kuala Lumpur,⁷ significant improvement in all 4 domains (physical, social, environmental and psychological) was noted after 6 months on MMT. A study in Lithuania¹⁰ reported significant increment in WHOQOL domains after 6 months except in social domain. This study found that hepatitis C predominate among the blood borne viruses tested so as many other studies.¹¹⁻¹³ It could be because hepatitis C has been among intravenous drug user population for a longer period than HIV and it is more contagious than HIV virus. In this country, treatment for hepatitis C is not as accessible as for HIV because of cost factor. Hepatitis C infection may affect MMT patient's outcome as some may succumb due to liver cancer, liver cirrhosis or acute active hepatitis. Patients in this study seemed to be protected from 3 common blood borne viruses among intravenous drug users as almost none of uninfected patients at baseline got the infection after joining MMT program. The finding of 1 patient who was initially tested negative for hepatitis C at baseline and later found positive at 1 year could be due to testing blood at very early stage of infection. High level of protection could also be because of health education on safe sex that was given as part of harm reduction messages.

The drug related offences that ended up in legal implication were very minimal and in line with findings in other studies.^{11,12,14} Being free of drugs due to MMT, would spare patients from harsh drug laws ranging from long term incarceration, in drug rehabilitation centres or prisons, to capital punishment that would interfere with their jobs and deprive them of their families.

Running of MMT program has its inherent challenges. It continues to exist stigma in the community as well as amongst health care providers towards these patients. Health care personnel are also inadequately trained to handle behavioural issues of drug users. Also, existing drug laws are incompatible as we are still in the transition period of the implementation of the MMT program. There were incidences where we and patients faced great difficulties with the enforcement unit. We hope that these issues will be resolved with the benefit of time.

CONCLUSION

MMT as a new service in the primary care clinic in Malaysia, was found to be successful in retaining patients in treatment, improving their quality of life, protecting them from blood borne viruses and minimizing drug related crimes as in the Tampin Health Clinic. Therefore, we would recommend the expansion of MMT in primary care clinics throughout Malaysia in order to address the failure of the nation in achieving the 8th Millennium Development Goal (MDG) of arresting the spread of HIV. Furthermore, this would also tackle the scourge of drug addiction that is regarded as the nation's foremost enemy.

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Mild hearing loss is associated poor academic performance in primary school children

Khairi Md DM, Noor RM, Rahman NA, et al. The effect of mild hearing loss on academic performance in primary school children. *Int J Pediatr Otorhinolaryngol*. 2010;74(1):67-70.

The hearing of 234 standard five students from 5 primary schools was evaluated using pure tone audiometry. Mild hearing loss was defined as an average threshold of 20-39 dB at 0.5, 1, 2 and 4 kHz. The prevalence of mild hearing loss in Class A (best academic result) and Class C students (worst academic results) were 30.6% and 69.4%, respectively ($p < 0.001$).