ORIGINAL ARTICLE

Associated risk factors to Non-compliance to Methadone Maintenance Therapy

M Ramli, MMed*, A B A Zafri, MMed, M R Junid, MMed**, S Hatta, MMed*****

*Kulliyyah of Medicine, International Islamic University Malaysia, Bandar Indera Mahkota, 25200 Kuantan, Pahang, Malaysia, **Department of Psychiatry, Hospital Tengku Ampuan Afzan, 25150, Kuantan, Pahang, Malaysia, ***Department of Psychiatry, Faculty of Medicine, Universiti Kebangsaan Malaysia, Jalan Yaakob Latif, 56000, Kuala Lumpur

SUMMARY

The escalating problem of opiate dependence in Malaysia and the limitations of regimental approach of forced admission to rehabilitation centres had triggered the government to expand the methadone maintenance therapy to become a national programme. This study aimed to evaluate the short-term outcomes of the Methadone Maintenance Therapy programme in one of the busiest hospital in east coast Malaysia. We also explored the prevalence on non-compliance and factors associated to it. A total of 172 patient case notes at Methadone Clinic Hospital Tengku Ampuan Afzan (HTAA) were retrieved for relevant data. A short survey was also conducted to determine the subjects' current employment and marital status. The programme's retention rate was 62% and factors associated with poor compliance were unemployment, low quality of life scores and low dose of methadone. A special attention on the patients with these three risk factors may improve their compliance to MMT. The short-term evaluation of MMT at HTAA revealed favourable findings.

KEY WORDS:
Methadone therapy; opioid dependence, compliance, outcome, Malaysia

INTRODUCTION

In Malaysia, in 2001, about half a million of the population were estimated to be involved in substance abuse [1]. With the implementation of the Methadone Maintenance Therapy (MMT) as a national programme to tackle substance dependence in Malaysia, the number of detected heroin users has gradually decreased to 22,811 in 2006 and to 14,489 in 2007 [2]. Unfortunately, the trend of substance intake has now diverged to amphetamine and methamphetamine misuses. Recent data reported about 3 to 10 times increases in total weights of confiscated amphetamine and methamphetamine by the Malaysian Police Department [2].

Based on the guideline produced by the Ministry of Health Malaysia, methadone can only be prescribed by gazetted government hospitals and primary health centres. The coverage of the programme has been extended to certified private medical practitioners[3]. Few studies in Malaysia have documented the success of the programme. Jesjeet et al has demonstrated that all patients treated at University Malaya Medical Centre (UMMC) had no trace of the drug in the urine after 120 days in the programme [4]. Another prospective study by Adeline GWH *et al* found significant improvements in all quality of life domains such as physical, psychological, social relationships and environment after about 2 years in the MMT programme.

This study used WHO Quality of Life BREF questionnaire (WHOQOL-BREF) to measure quality of life [5]. The Methadone Maintenance Therapy (MMT) at the psychiatric clinic in the Department of Psychiatry, Hospital Tengku Ampuan Afzan was established in early 2007. After two years into the programme, we conducted an evaluation of its strengths and weaknesses in order to improve our service delivery. The outcomes of this study may also reflect positive effects of MMT in Malaysia. However the evaluation can only be done retrospectively as the same authors are also embarked on another on-going prospective and effectual study to evaluate the effectiveness of the MMT programme.

The primary objective of this study was to evaluate factors for non-compliance among our clients. This was crucial because non-compliance is cited to be the single most important factor to determine the success and the outcome of methadone programme [6]. We explored whether the determinants for non-compliance to the programme among chronic opiate users in Malaysia were similar with other parts of the world. The study has strong connotations on the effectiveness of Methadone Maintenance Programme at HTAA and generally in Malaysia and the effectiveness could be reflected through the good retention rate, better employment and better quality of life. By exploring the risk factors and the reasons for non-adherence to the programme, we could further improve the programme towards achieving better outcomes. It could also be used as a guideline for us to pay more attention to this high risk group.

The specific objectives of the study were to determine factors associated with non-compliance to MMT in HTAA and the association between factors such as demographic data and multiple substance use to better outcomes of Methadone treatment.

MATERIALS AND METHODS

This was a retrospective study based on patient case notes over 2 years. The study was reviewed and approved by the internal review board of International Islamic University

This article was accepted: 11 May 2012
Corresponding Author: Ramli Musa, Department of Psychiatry, Kulliyyah of Medicine, International Islamic University Malaysia, Bandar Indera Mahkota, 25200 Kuantan, Pahang Malaysia Email: ramlidr@yahoo.com

Malaysia and the ethics committee of the Hospital Tengku Ampuan Afzan. The patients were also asked to complete a simple survey to obtain their latest employment and marital status. The determinants of the outcomes were based on patient characteristics, level of opioid substance and the presence of multiple substance use. Level of opioid abuse was determined by the expenses it incurred. Outcomes were determined based on the period of abstinence from substance based on patient history and urine test for drugs and compliance/dropout rates.

In this study we used The Opiate Treatment Index (OTI) and WHO Quality of Life BREF questionnaire (WHOQOL-BREF) to assess the outcome of MMT. The administration of both scales was done at the time of subjects' enrolment to MMT programme. OTI is a structured interview designed to provide a measure of the effectiveness of drug treatments. The OTI measures 6 treatment outcomes. They are drug use, HIV risk-taking behaviour, social functioning, criminality, health status and psychological functioning [7]. WHOQOL-BREF was used to measure quality of life. OTI WHOQOL-BREF had been used nationwide in Malaysia as the main tools of assessment in the MMT programme.

RESULTS

Table I shows more than half (64%) of the registered patients were aged between 51 and 60 years. Only 3 out of 172 patients were females. About 97% of them were Malays and 98% were Muslims. Majority of them (67%) were single. However after the 2 years follow-up we found nine individuals who were either single or divorced during enrolment were married after they enrolled in the programme. Two patients who were married during the enrolment divorced after certain duration in the programme. Overall, the rate of patients who were married increased from 29.1% to 33.3% after 2 years in the programme. About 97% of them had only up to secondary school education.

The majority (70.1%) of the patients were employed at the time of treatment initiation and most were blue collar workers. Sixty-two percent of those who were unemployed indicated their difficulty in securing a job. After 2 years on treatment, 28 obtained jobs and six who were employed earlier lost their jobs. The rate of employment after 2 years on treatment was 77% (n=132) and this Improvement is one of the indicators to measure effectiveness of this programme.

Table II shows the compliance rate and pattern of substance abuse. Compliance is important for the Methadone programme to be effective and successful. In Malaysia, non-compliance is defined when a patient defaults follow-up for two weeks or more. However if the same patient resumed his/her treatment two weeks later, this patient will be regrouped as compliant. The reported non-compliance of 40.1% (table III) was regarded as point prevalence. Further analysis of this figure revealed that seven people were not even started on methadone. These individuals may have come to the Methadone clinic to be enrolled into the programme and were registered. They, however, were not given the starting dose for specific reasons such as impaired liver function. Therefore the actual defaulter rate for Methadone clinic HTAA was only 62 out of 165 (37.6%).

Social Functioning

The social functioning questionnaire is a set of questions given to every patient at enrolment. The survey explored socializing patterns and included questions on the how many time in the last 6 months they have been employed, number of close friends, number of times they have engaged with a person who abuses heroin etc. The higher their total score, the poorer their social functioning is. Total score ranged from 0 to 47 points. At a cut-off point of 15 and less for high social functioning, 63% of patients had good social functioning.

Seventy-six percent were given 25 to 30 mg of Methadone as the initial starting dose and 52% at 35 to 45 mg after the stage of induction. Six percent were at the dose of 60 to 65 mg of Methadone.

Univariate analysis revealed that those with high QOL score, high methadone dose (60mg and higher) and being employed were significantly related to good compliance to Methadone programme. Multivariate analysis, however, revealed that employment status was the only significant determinant for compliance.

We also analyzed the factors that could determine the quality of life and social function.

Table IV shows that marital status is statistically significant for QOL and level of criminal activities for social function. We concluded that being married was a predictor to have better QOL and those with high level of criminal activities were having lower social function.

DISCUSSION

The main objective of this study was to determine factors associated with poor compliance to the programme. The overall retention rate to the MMT programme at HTAA after excluding those who had never been started on their first dose of methadone was 37.6%. This figure was higher than the rate at the University Malaya Medical Centre (other MMT centres in Malaysia) which had a mere 25% dropout [4]. The UMMC study, however, had a select and small number of patients. Importantly, almost all of the subjects in the latter study population came voluntarily to the programme reflecting their high motivation to be drug free. Most subjects in that study were in the high income group and had stable jobs.

This study revealed that high QOL score, high methadone dose (60mg and higher) and being employed were significant factors for good compliance to the programme. Multivariate analysis among these 3 factors, however, revealed that employment status was the only significant determinant for compliance.

Nevertheless the association between these factors with compliance of the clients to MMT programme is rather complex as it involves both personal and psychosocial factors. The personal factors include the patients' level of motivation to give up substance abuse, their doubt about the programme, personality traits and denial [8]. Equally important is the social factor especially the level of social support. Other past studies found that personality trait,

Table I: Patients' characteristics

Variable	N	%	Total
Age (years old)			
20-40	31	20.3	153
41-50	24	15.7	
51-60	98	64.0	
Gender			
Male	169	98.3	172
Female	3	1.7	
Race			
Malay	167	97.1	172
Chinese	5	2.9	
Religion			
Islam	168	97.7	172
Buddhist	3	1.7	
Others	1	.6	
Marital Status			
Single	111	67.3	165
Married	48	29.1	
Divorced / widowed	6	3.6	
Educational Level			
No formal education/Primary School	18	10.7	168
Secondary School	145	86.4	
College Graduate	5	3.0	
Employment Status			
Employed	110	70.1	157
Unemployed	47	29.9	
Types of occupation			
Professional/Technical/Managerial	1	1.0	
Agricultural/Fishery/Forestry	4	3.8	104
Military/Police/Fireman	1	1.0	
Factory worker	12	11.5	
Clerical/sales	7	6.7	
Service	12	11.5	
Own a business	29	27.9	
Others	38	36.5	
Reasons for unemployment			
Unable to work	5	19.2	
Unable to get a job	16	61.5	26
Not Applicable	3	11.5	
Housewife	1	3.8	
Student	1	3.8	

Table II: Compliance rate and pattern of substance abuse

Variable	N	%	Total
Compliance			
Defaulted	69	40.1	172
Compliant	103	59.9	
Source of referral			
National Anti-Drug Agency (AADK)	4	2.6	157
Walk-in	89	56.7	
Friend	33	21.0	
Non-governmental organizations (NGOs)	31	19.7	
Number of times admitted to rrehabilitation centre			
Never	65	45.1	144
1	38	26.4	
2	28	19.4	
3-6	13	9.1	

Table III: Factors determining compliance to Methadone Therapy

	Compliance	Defaulted	P value (95% CI)
Employment status			
Employed	78	78	.001#*
Unemployed	20	27	
Educational Level			
No formal education/primary school	68	47	.393#
Secondary school/tertiary education	35	18	
Marital Status			
Single/Divorced / Widowed	74	43	.733#
Married	29	19	
Total QOL (mean)	77.55	72.98	.039^*
Health Status			
Healthy	9	1	.056#
Unhealthy	84	50	
Crime			
Low	80	45	.494#
High Crime	13	5	
Level of social function			
Low	67	42	.260#
High	17	6	
Maintenance dose of Methadone			
Low dose	69	48	0.009#*
High dose (>60mg)	27	5	

Chi Square test
^ Independent t-test
*p<0.05 (95% CI)

Table IV: Factors determining QOL and Social Function

	Factors determine QOL			Factors determining Social Function		
	High	Low	P value	High	Low	P value
Employment status						
Employed	22	62	.188	81	17	.913
Unemployed	11	17		27	6	
Educational Level						
No formal education/primary school	33	62	.098	71	14	.698
Secondary school/tertiary education	11	40		38	9	
Marital Status						
Single/Divorced / Widowed	37	65	.017*	76	16	.939
Married	7	36		32	7	
Level of Social Function						
Low	8	16	.593	25	6	.782
High	23	60		63	13	
Health Status						
Healthy	4	4	.205	9	1	.493
Unhealthy	29	75		100	22	
Crime						
Low	29	66	.560	98	17	.037*
High Crime	4	13		11	6	

Chi Square test
*p<0.05 (95% CI)

decreased educational expectations, comorbidity, boredom, family-related conflict, ambivalent thought, poor motivation, peer association, uncontrollable drug craving, drug availability, heavy intravenous users and young poly-drug users were associated with poor compliance [9]. Another reason for poor compliance to the MMT programme is the presence of benzodiazepine abuse which was not investigated in this study.

Several previous studies show that average methadone maintenance doses of 60 to 120 mg or higher have resulted in consistently better outcomes than those on lower average doses [10, 11, 12]. This study affirmed these findings and those on 60mg of maintenance dose had lower default rates. We could not, however conclude that those with low doses of methadone were not on therapeutic doses. Research on therapeutic drug monitoring intervention among Methadone therapy subjects could be the answer on the issue of therapeutic dose [13].

On the other hand the limitation that we could identify in this study is in this retrospective study, we could only analyse patient characteristics, quality of life and other available data that could determine compliance. We will analyze other relevant factors for poor patient compliance such as level of social support and psychological factors in further studies.

Other traits not measured in this study such as low self-esteem, anxiety, low mood, continuous family-related conflicts and drug availability were found to be significantly associated with poor compliance [8].

CONCLUSION

This study explored patient profiles, default rate and pattern of substance abuse among patients in the Methadone Maintenance Therapy (MMT) programme of the Department of Psychiatry HTAA. The preliminary outcomes of this 2-year Methadone programme at the Department of Psychiatry HTAA were positive indicating that the programme was on the right track. Improvement in employment rates, increase in percentage of those who were married and the lower defaulting rate than what was normally reported were clear indicators of improvements. We may need to focus on those with poor quality of life scores and the unemployed. We also need to re-evaluate as to whether the doses of methadone given to the patients are effective. At this time we have also embarked on a prospective study to measure the outcomes of this programme such in terms of quality of life, psychological aspect and social support.

ACKNOWLEDGEMENT

We thank the Research Management Centre of International Islamic University Malaysia, for the grant conferment. We also extend our gratitude to our dedicated research assistants; Mr. Aidil Faszrul Abdul Rahim, Mr. Abdul Aziz Hamid, Mrs. Norhayati Mohameds and Mr. Nawawi Jantan.

REFERENCES

1. Hussain H. Managing heroin addicts through medical therapy. In Haque A (Ed). Mental Health in Malaysia: issues and concerns University Malaya Press, Kuala Lumpur 2001.
2. Yaacob S, Kazidi MZ, Buletin (First Edition) Agensi Anti Dadah Kebangsaan (AADK). Kuala Lumpur 2008 (available at http://www.adk.gov.my/buletin.html.)
3. National Methadone Maintenance Therapy Guidelines. Ministry of Health Malaysia Putrajaya, Malaysia: 2005.
4. Jesjeet SG, Hatim AS, Hussain MH. The first methadone programme in Malaysia: overcoming obstacles and achieving the impossible. ASEAN Journal of Psychiatry. 2007; 8(2):64-70.
5. Adeline GWH, Ng CG, Amer SAN, Aida SAA, Hussain H. Quality of life assessment of opioid substance abusers on methadone maintenance therapy (MMT) in University Malaya Medical Centre. ASEAN Journal of Psychiatry. 2009:10;1.
6. Wartenberg A.A. Treatment consideration in the opioid dependent patient. Medicine & Health, Rhode Island. 1999:82;91-94.
7. Darke S, Ward J, Hall W, Heather N, Wodak A. The Opiate Treatment Index (OTI) Researcher's Manual. National Drug and Alcohol Research Centre Technical Report Number 11. National Drug and Alcohol Research Centre. Sydney 1991.
8. Mutasa HCF. Risk factors associated with noncompliance with methadone substitution therapy (MST) and relapse among chronic opiate users in an Outer London community. J Adv Nurs. 2001;35(1): 97-107.
9. Simpson DD, Joe GW, Dansereau DF, Chatham LR. Strategies for improving methadone treatment process and outcomes. J Drug Issues. 1997;27:239-60.
10. Vincent PD, Marie N. Methadone Maintenance 4 Decades Later, Thousands of Lives Saved But Still Controversial. JAMA. 2008: 300(19);2303-2305.
11. Michael S, Sabine M. Apelt,y ML, Hans-Ulrich W. One-year Mortality Rates of Patients Receiving Methadone and Buprenorphine Maintenance Therapy. A Nationally Representative Cohort Study in 2694 Patients. J Clin Psychopharmacol. 2006;26,6.
12. Dickinson GL, Rostami HS. A six-year evaluation of methadone prescribing practices at a substance misuse treatment centre in the UK. J Clin Pharm Ther. 2006;31; 477-484.
13. Michael G. Methadone: Is It Enough? Heroin Addict Relat Clin Probl 2006;8(4):53-64. (available at www.europad.org/journal/2006/Gossop 8(4)2006)