

Depression, Anxiety and Stress Among Patients Receiving Methadone Maintenance Therapy and Its Associated Factors; A Cross Sectional Study in Primary Care Clinics, Malaysia

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Abstract:

Objectives: Several studies have reported the high prevalence of psychiatric problems in patients receiving Methadone Maintenance Therapy. This study measured the prevalence of depression, anxiety and stress among patients receiving Methadone Maintenance Therapy in Malaysia and its predictors.

Methods: A cross sectional study was done from July to August 2014 on 83 patients receiving Methadone Maintenance Therapy from three selected government primary care clinics in Malaysia. Multistage sampling methods were used to select the participants for this study. A self-administered questionnaire using the validated Depression, Anxiety and Stress Scales 21 (DASS 21) Malay version was used. The questionnaire also comprised of sociodemographic profile and clinical characteristics to assess for association. Association was tested using chi square test.

Results: The prevalence of depression, anxiety and stress were 44.6%, 51.8% and 27.7% respectively. There were significant associations between recent significant traumatic life events, anxiety and stress with depression ($p < 0.05$).

Conclusion Depression, anxiety and stress are common psychological problems associated with patients receiving MMT, therefore regular screening should be done for early detection and intervention in ensuring best treatment outcomes for the patients.

Keywords: Depression, anxiety, stress, methadone maintenance therapy.

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I. INTRODUCTION

Opioid dependence and injecting drug use is a continuous problem occurring around the globe. Unlimited use of heroin may increase AIDS epidemic which subsequently contributed to the health, economics and social problems¹. The estimated numbers of drug users in Malaysia in 2001 was 400,000 – 800,000 and was estimated to increase to 1 million in the next few years².

Methadone maintenance therapy (MMT) is the most effective evidence based treatment for opioid dependence. A study reported reduction in illicit drugs use as well as psychosocial parameters improvement including crime, legal issues and risk behavior³. Among other benefits of opioid substitution maintenance therapy are reduction in HIV risk behaviors, fewer death rate in patients receiving MMT compared to those not in treatment and improvement in

quality of life by increased employment rates⁴. As a part of harm reduction strategies in the management of heroin addiction, the Malaysian government had approved methadone as part of maintenance therapies in 2005. The Ministry of Health Malaysia has directed that methadone to be a heavily regulated medicine to prevent potential negative implications. Even though MMT is relatively new in Malaysia, the positive outcome has encouraged the government to launch MMT centers throughout the country⁵.

However, there are also drawbacks in implementing the program. Psychiatric comorbidity particularly depressive disorders is associated with continued substance use and poor social functioning among methadone maintained patients. A study found that the prevalence of psychiatric disorder is up to 10 times higher in the population on methadone

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maintenance than in the general population⁶. Another study found that more than half (57.1%) of patients had at least one mental health disorder in the past year with the most prevalent mental health disorder experienced by older patients on methadone therapy was major depressive episode (32.9%)⁷.

Depression and substance dependencies were tend to co-occur. This may lead to worsen overall severity and greater health-related outcomes including increased risk of suicide^{8,9}. Furthermore, depression may interfere the compliance with MMT and may prolonged confinement in methadone treatment. A study reported about fifty percent of those on MMT were found to be suffering from depression and nearly a third (32.9%) of older adults on MMT was diagnosed to have depression¹⁰. Meanwhile, there have been a few studies which have looked into factors which are linked to depression in patients receiving MMT. A study found that there was significant association between depression and ethnicity, education level as well as concurrent used of cannabis^{11,12}. This study aims to measure the prevalence and predictors of depression among patients receiving MMT in selected government primary care clinics in Malaysia.

II. METHODS

Population and setting

This was a cross-sectional study among 83 patients receiving MMT from three government primary care clinics in Kuantan, Malaysia from July to August 2014. The inclusion criteria was patients aged 18 to 60 years old who has been in methadone maintenance therapy for at least 2 months.

Sample size and sampling

Sample size was calculated using the sample size calculator for prevalence study from Open Epi software. The total registered patients from 7 clinics in Kuantan district were 346 patients. With the prevalence of depression among patients receiving MMT reported from previous study was 44%, 95% confidence interval and 80% study power, the calculated sample size was 83 participants¹¹. The participants were identified from the list of patients attending the MMT clinic. Written consent was taken for this study. Prior to obtaining consent, all potential respondents were explained about the purpose of the study.

Data collection tool and scoring system

A self-administered validated short Malay version of the Depression, Anxiety and Stress Scale 21 (DASS 21) was used in this study¹³. The short version has 21 items which are divided into 7 items each assessing the symptoms of depression, anxiety and stress respectively. Respondents were asked to rate their experience on each symptom over the past one week on a 4-point severity scale ranging from 0 (does not apply to me), to 3 (applies to me most or all of the time). Scores for each scale were later summed up and categorized as normal, mild, moderate, severe and extremely severe according to the DASS Manual.

Statistical Analysis

All questionnaires were checked for completeness and attempts were made to improve the response rate for missing

items. All data were entered manually and analyzed using SPSS version 17.0. Point prevalence was considered in determination of depression, anxiety and stress prevalence rate of respondents. Test of normality was performed for continuous data. The normally distributed data reported as mean and standard deviation. Frequency analysis was done for categorical variables data. χ^2 -test was applied to infer factors influencing depression status of the patients under MMT. The level of significance is set as $p < 0.05$.

Ethic

Ethical approval for the study was obtained from the IIUM Research Ethics Committee. Permission to conduct the study was also obtained from the State Health Directors as well as Medical and Health Officers in charge of the clinics prior to the study. Once the participants completed the questionnaire, the investigators reviewed and summed up the score immediately, those who scored above the normal value for any of domain (depression, anxiety or stress) were referred to the doctor in charge in the clinic for further assessment of the psychological symptoms and further management accordingly

III. RESULTS

Table 1: Socio demographic and clinical characteristics of respondents

Socio-demographic/clinical characteristics (n=83)	Frequency (n)	Percentage (%)
Age (years)*	37.6 ± 6.5	
20-30	12	14.5
31-40	45	54.2
41-50	24	28.9
>51	2	2.4
Gender		
Male	82	98.8
Female	1	1.2
Ethnicity		
Malay	83	100
Marital status		
Single	36	43.4
Married	39	47
Divorced	8	9.6
Education		
Primary education	5	6
Secondary education	73	88
Tertiary education	5	6
Occupation		
Private sector	19	22.9
Self-employment	61	73.5
Unemployed/Retired/Dependent	3	3.6
Monthly household income (RM)		
< 1500	55	66.3
≥ 1500	28	33.7
Smoking status		
Yes	79	95.2
No	4	4.8
Alcohol status		
Yes	5	6
No	78	94

Recent significant traumatic life events		
Yes	14	16.9
No	69	83.1
Family history of psychiatric illness		
Yes	6	7.2
No	77	92.8
Duration of methadone treatment (years)*	2.8 ± 2.2	
Types of illicit drug used		
Heroin	53	63.9
Combination	26	31.3
Others	4	4.8
Illicit drug complications		
Yes	31	37.3
No	52	62.7
Medical complications because of illicit drug use		
Hepatitis B or C	25	30.1
HIV	2	2.4
Secondary lung Complication	2	2.4
Hepatitis B or C and HIV	2	2.4
Co-morbidities		
Yes	6	7.2
No	77	92.8

*mean ± SD

Table 2: Prevalence of Depression, Anxiety and Stress among respondents

	Frequency (n)	Percentage (%)
Depression Status		
No Depression	46	55.4
Depression	37	44.6
Anxiety Status		
No Anxiety	40	48.2
Anxiety	43	51.8
Stress Status		
No Stress	60	72.3
Stress	23	27.7

Table 2 shows almost half of the patients 44.6% were depressed, half of them 51.8% have anxiety problem and nearly one third of the patients 27.7% were stress.

Table 3: Prevalence of depression, anxiety and stress according to severity among respondents

	Depression n (%)	Anxiety n (%)	Stress n (%)
Level of Severity			
Normal	46(55.4)	40(48.2)	60(72.3)
Mild	16(19.3)	12(14.5)	10(12.0)
Moderate	17(20.5)	12(14.5)	9(10.8)
Severe	3(3.6)	10(12.0)	2(2.4)
Extremely Severe	1(1.2)	9(10.8)	2(2.4)

Table 3 shows almost a similar pattern seen for all categories in table 3 in which more than half of those who were considered depressed, anxiety and stress were in mild and moderate severity respectively. Only less than 10 % of them categorized as having severe or very severe depression and stress.

Table 4: Association between sociodemographic profile and clinical characteristics with depression among respondents (n=83)

Variables	Depression(n= 37) n (%)	Non-depression (n=46) n (%)	p-value
Age (years)			0.91
20-30	5(41.7)	7(58.3)	
31-40	19(42.2)	26(57.8)	
41-50	12(50.0)	12(50.0)	
>51	1(50.0)	1(50.0)	
Gender			0.45
Male	36(43.9)	46(56.1)	
Female	1(100.0)	0(0.0)	0.65
Marital status			
Single	18(50.0)	18(50.0)	
Married	15(38.5)	24(61.5)	
Divorced	4(50.0)	4(50.0)	0.23
Education			
Primary education	4(80.0)	1(20.0)	
Secondary education	30(41.1)	43(58.9)	
Tertiary education	3(60.0)	2(40.0)	0.24
Occupation			
Private sector	7(36.8)	12(63.2)	
Self-employment	30(49.2)	31(50.8)	
Unemployed/ Retired/ Dependent	0(0.0)	3(100.0)	0.50
Monthly household income (RM)			
<1500	23(41.8)	32(58.2)	
≥1500	14(50.0)	14(50.0)	0.13
Smoking			
Yes	37(46.8)	42(53.2)	
No	0(0.0)	4(100.0)	1.00
Alcohol drinking			
Yes	2(40.0)	3(60.0)	
No	35(44.9)	43(55.1)	0.005
Recent significant traumatic life events			
Yes	11(78.6)	3(21.4)	
No	26(37.7)	43(62.3)	

Table 4 shows significant association was found between recent significant life events and respondents depressive symptoms. Majority of those (78.6%) who have recent history of significant traumatic life events have some degree of depression. There is no significant association was found between depression and other sociodemographic profile and clinical characteristics.

Table 5: Association between anxiety and stress status with depression

Variables	Depression (n=37) n (%)	Non-Depressed(n=46) n (%)	p-value
Anxiety status			0.0001
Yes	28 (65.1)	15 (34.9)	
No	9 (22.5)	31(77.5)	
Stress Status			0.0001
Yes	20 (87.0)	3 (17.0)	
No	17 (28.3)	43 (71.7)	

Table 5 shows there is significant association between depression and stress as well as anxiety. More than half of anxiety patients has depression symptoms and almost 90% of stress patients were also depressed.

IV. DISCUSSION

Majority of our study population is male, Malay, employed, lowly educated and married. These findings are almost similar to our national statistic¹⁴. Prevalence of psychiatric disorder in addicts was reported to be higher compared to the general population with depression being the commonest psychiatric problem in this group of patients¹⁵. The presence

of depressive symptoms in our study is 44.6 %. This result is almost similar with a local study which reported the prevalence of depression among patients receiving MMT was 44.4%¹¹. However, the study was done using Beck Depressive Inventory (BDI) rather than DASS 21 questionnaire. Another study reported that 44% - 54% of patients with opioid dependence have suffered at least an episode of major depression at some point in their life¹⁶. In the meantime, the prevalence of depression in our study was higher compared to a study done in Indonesia (29%)¹⁷. The study used a shorter version of Centre for Epidemiologic Studies Depression Scale (CES-D) to assess the depression status.

Our study also found that there was significant association between recent traumatic life events and depression in which 78.6% of the respondents who had history of recent traumatic events were found to have depression symptoms. In a survey done by Prusoff et al to study the relationship between life events and depression status, it is reported that more life events are being reported significantly by depressed methadone patients than non-depressed patients¹⁸. These life events include being unemployed, loss of close family members and financial problems. These results are consistence with our study that suggests the role of specific psychological stressors in the development of depression among patients receiving MMT. This result brought an important clinical implication in which stressful life events and depression were important predictors for suicide attempt among patients receiving MMT^{19,20}. Meanwhile, our study failed to find any significant association between depressions and other sociodemographic profiles as well as clinical characteristics.

A study has reported that anxiety disorder may be co-exist with opioid dependence as an addition with depression or in absence of depression²¹. The prevalence of anxiety disorder among patients receiving MMT is varied with different study. It is observed in this study that about 65% of the respondents who have depression also have history of anxiety. A study done among heroin users using State-Trait Anxiety Inventory (STAI), reported that the prevalence of anxiety states among patients receiving MMT was 51.6%²². Another study found that lifetime prevalence of anxiety disorder among opioid dependence according to DSM-IV ranged from 26%-35%²¹. The differences in these results may be due to the different diagnostic tools used in each of the study. The relationship between anxiety and opioid dependence could be either due to anxiety disorder as the etiologies for opioid dependence or the anxiety symptoms itself induced by opoid through intoxication, withdrawal or craving. Though different studies show different prevalence, anxiety should be viewed as an important comorbidity in patients receiving MMT. Anxiety could be a signal that the patient will relapse into the previous drug used²³. Furthermore, high prevalence of psychopathology was associated with poorly respond to treatment^{24,25}.

The prevalence of stress in our study was 23%. Even though the prevalence is low, almost 87% of respondents who have depression symptoms also have stress symptoms with significant association seen (p value < 0.05). The link between stress and depression is not novel. Studies have

found that there was positive correlation between stress and depression and suggest that stress plays a role in major depression and other related depressive disorder^{26,27}. The results of our study highlighted the importance of psychological screening among patients receiving MMT at any given opportunity for early detection and intervention.

V. CONCLUSION

Psychiatric disorder including depression, anxiety and stress are common psychological problems among patients receiving MMT. Adverse life events, anxiety and stress are the three predictors associated with. Given a high percentage of psychiatric disorders among patients receiving MMT, all opioid dependent patients should be screened for psychiatric problems as a requirement before entering the MMT program and at regular interval. The presence of concomitant psychiatric problem warrant additional psychiatric treatment. Mental health status of patients receiving MMT is one of the key factor that could determines good compliance and best treatment outcome.

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