

## A STUDY ON TREATMENT COMPLIANCE AMONG METHADONE CLIENTS IN MMTP PROGRAM TUTH, NEPAL

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### Abstract

**Background:** Since past 30 years, methadone has been used as a substitute therapy for opiate dependence because of its many advantages. It has cross-tolerance property and significantly effects to reduce drug injecting and it related behavior as well as lower the mortality in drug users with HIV infected.

**Objective:** The aim of this Study is to find out correlation between doses and dropout rate among Methadone Maintenance Treatment clients.

**Method:** 112 dropout methadone clients who had enrolled in the MMTP program in Department of Psychiatry, TUTH Maharajgunj within one year period assessed their final doses before dropout from the program.

**Result:** The mean initial and last (final or exit) dose of methadone in Dose Stable group (DSG) is  $32.44 \pm 9.2$  mg, in Dose Increased group (DIG)  $36.25 \pm 8.6$  mg and  $47.50 \pm 11.2$  mg, and in Dose Decreased group (DDG)  $37.63 \pm 7.4$  mg and  $15.66 \pm 10.2$  mg respectively.

**Conclusion:** The lower the doses of methadone, the higher risk of dropout among the clients of the Methadone Maintenance program

**Key words:** *Methadone, Substitution Therapy, Opiate dependence,*

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### Introduction

Methadone Hydrochloride, a synthetic opioid that works primarily at the  $\mu$ - receptor of the brain. It was developed medically as an analgesic to treat pain in the 1940s. It is the best researched oral substituted therapy for opioid dependence. It is, still prescribed widely for the management of pain in America, Australia and Europe.<sup>1-6</sup>

Experience in the past 30 years has clearly demonstrated that methadone maintenance treatment is the most effective intervention method to reduce illicit opiate use more than no treatment<sup>7-11</sup>, drug free treatment<sup>12</sup>, placebo

medication<sup>13, 14</sup>, or detoxification<sup>15-17</sup> in clinical controlled trials in different research groups and different cultural settings.

There are many aspects to use methadone as a substitute therapy for opiate dependence because of various pharmacological features of opioid. In adequate doses (20 mg to >100 mg) methadone prevents or reverses withdrawal symptoms.<sup>18</sup> It remains effective for approximately 24 hours and requiring a single daily dose rather than the more frequent administration of multiple times daily<sup>19</sup>. It has cross-tolerance property to block the euphoric effects of heroin and discourages to use illicit drugs thereby in

users relieving desire to seek heroin this allows the opportunity to engage in normal daily activities and work rehabilitation.

Methadone treatment has a significant effect to reduce drug injecting behaviors, drug related criminal behavioral, HIV infection and improve relationships within the families among heroine users<sup>20</sup> as well as improve adherence to the ART regimen and lower the mortality opioid dependence with HIV infected<sup>21</sup>. Mortality from all causes is many-fold lower in methadone-treated patients than in untreated opioid addicts.

In contrast, inappropriate overdosing and under dosing of methadone may lead to sever adverse events including sedation, respiratory depression and cardiac arrhythmias.<sup>22</sup> In addition, the withdrawal of methadone is longer than of heroin. Many clients require continuing the treatment a long time. There is risk of abuse. Moreover it is not a cure for opiate addiction. However it suppresses withdrawal symptoms, lessens the craving for narcotics, facilitates interpersonal interactions and strengthens motivations, changing lifestyle, and breaking the cycle of life patterns and stress reactions underlying relapse.

## Method

### Sample

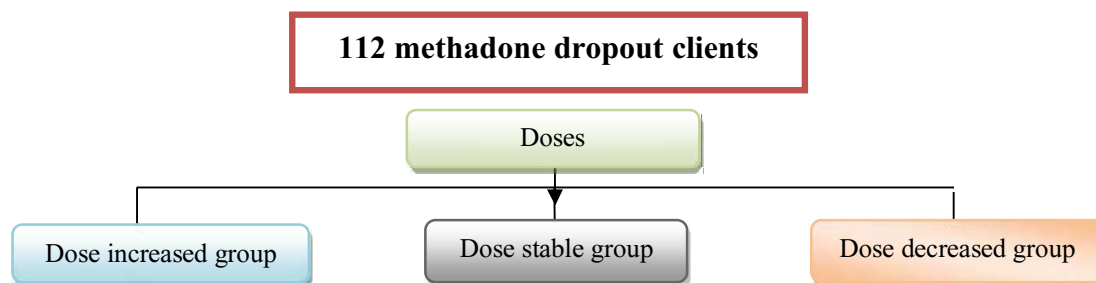
Participants were all methadone clients who had enrolled in the program within one year but dropped out from the program. The total numbers of client were 112. All the participants were taken from the MMTP program of Department of Psychiatry, Tribhuvan University Teaching Hospital Maharajgunj.

In inclusion criteria the methadone clients who were had enrolled in methadone program but dropped out for more than 15 days.

### Data analysis

The last doses of the clients were considered to be the dose of the client related to dropout from the program. Doses were divided into three groups: 1) Dose stable group (DSG): whose doses were neither increased nor decreased frequently and throughout the treatment program the dose was stable in same dose. 2) Dose decrease group (DDG): those doses were decreased to last dose from initial dose. & 3) Dose increased group (DIG): those doses were increased to last dose from initial dose

The aim of study was find out the relation between the doses of methadone and dropout rate or retention in the program.



## Result

Of the 112 dropout clients, 43 (38.4%) were in DSG, 57 (50.9%) in DDG and 12 (10.7%)

and in DIG (Table 1). The mean age of DSG was 29.44±5.6 years; male 36.6%, female

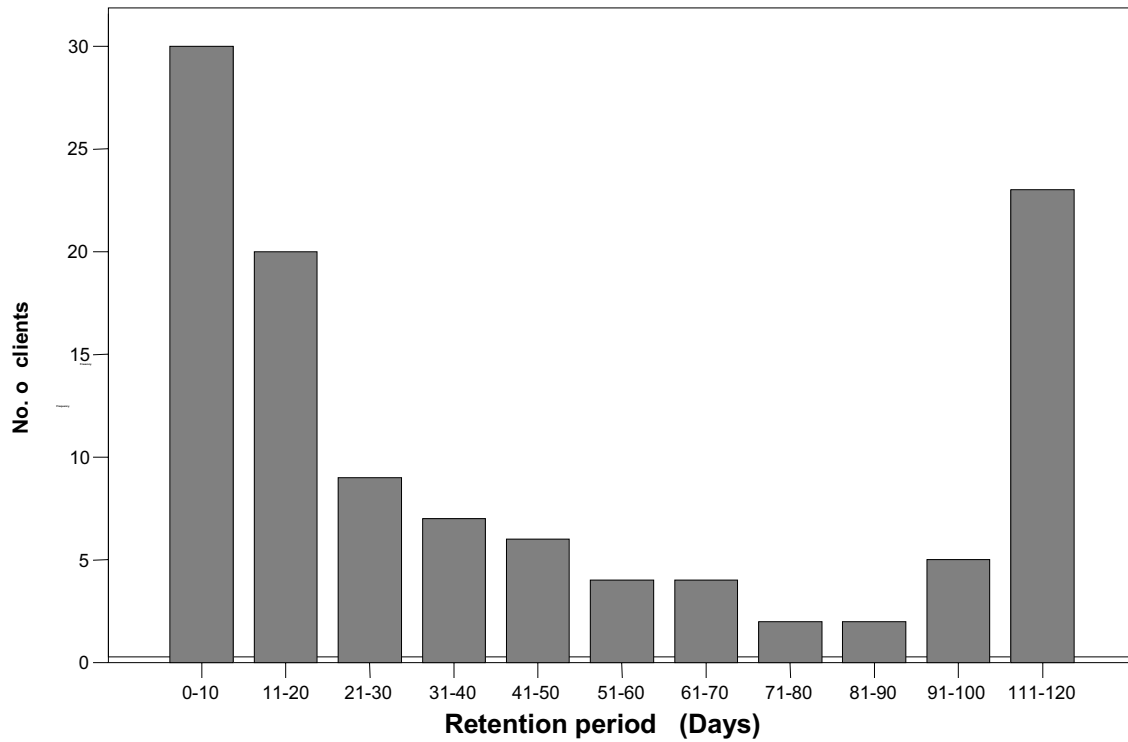
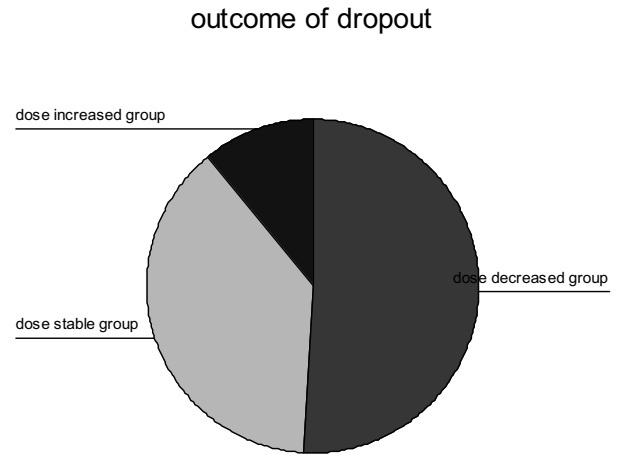
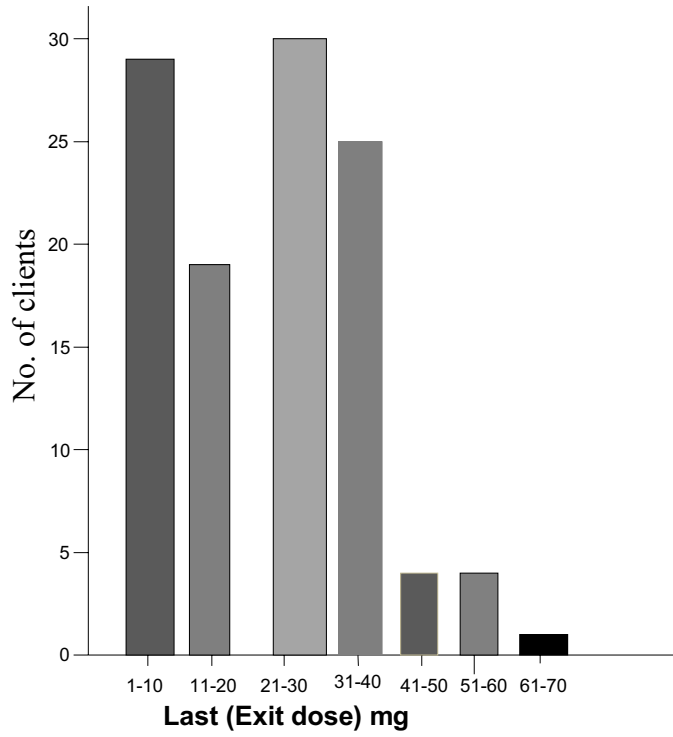
1.8%; the mean initial and last dose was 32.44±9.2 mg. The mean age of DDG group was 29.58±5.4 years; male 49.1% and female 1.8%, the mean initial dose 37.63±7.4 mg and last (exit) dose 15.66±10.2 mg. In DIG the mean age was 32.08±6.3 years, male 9.8% and female

0.9%, the mean initial dose 36.25±8.6 mg and last (exit) dose 47.50±11.2 mg.

The mean retaining period in the maintenance treatment was: DSG 22.30±36.1 days; in DDG 78.26±63.5 days, and in DIG 58.0±51.2 days

**Table 1 Summary of baseline characteristics of drop out methadone Clients**

Baseline characteristics	<i>n</i>	min	max	Mean	Std Deviation
<b>Age (years)</b>					
In Total case	112	21	49	29.77	5.6
In groups					
Stable group	43	21	45	29.44	5.6
Decrease group	57	21	47	29.53	5.4
Increase group	12	24	49	32.08	6.3
<b>Gender (% in total cases)</b>					
	male ( <i>n %</i> )		Female ( <i>n %</i> )		
Stable group	36.6		1.8		
Decrease group	9.1		1.8		
Increase group	9.8		0.9		
<b>Dropout rate</b>	( <i>n %</i> )				
Stable group	38.4				
Decrease group	50.9				
Increase group	10.7				
	<i>n</i>	min	max	Mean	Std
<b>Initial Dose (mg)</b>					
In total cases	112	5 60	35.49	8.5	
Stable group		5 60	32.44	9.2	
Decrease group		15	60	37.63	7.4
Increase group		25	55	36.25	8.6
<b>Exit (last) dose (mg)</b>					
In total cases	112	3 65	25.51	14.8	
Stable group		5 60	32.44	9.2	
Decrease group		3 35	15.66	10.2	
Increase group		30	65	47.50	11.2
<b>Period of Maintenance (days)</b>					
In total cases	112	1 224	54.61	59.0	
Stable group		1 182	22.30	36.1	
Decrease group		5 224	78.26	63.5	
Increase group		3 140	58.00	51.2	



## Discussion

Retention is a key for successful MMT program. Many studies have found that methadone dose is an important factor that can influence retention in methadone treatment. A meta-analysis of randomized, controlled, double-blind clinical trials found that a dose of 50 mg/day was associated with higher retention rates<sup>23, 24</sup> concluded that an adequate methadone dose, on average, should be above 60 mg to be effective. A randomized trial found that high-dose methadone treatment resulted in longer retention in MMT. Other studies also that found higher methadone doses were associated with higher retention rates.<sup>25,26,27,28</sup> Our study also confirms this relationship among Nepalese drug users, and to identify other correlates of retention. Our main finding is that the lower the dose of methadone the higher the risk of dropout among MMT clients. In our study, among 112 dropout clients 50.9% were from DDG. In compare to DSG (38.4%), DIG clients were very few in drop out (10.7%)

The results suggest that higher doses can achieve better retention rates, and that there is a positive dose–response relationship between methadone dose and client retention.

The National Institutes of Health (NIH) expert panel recommended a daily methadone dose of at least 60 mg as a best practice for successful methadone maintenance.<sup>29</sup> The General Accounting Office reviewed 24 methadone maintenance clinics, based on 5600 active clients, and concluded that the minimally effective dose was 50 mg.<sup>29</sup>

## Limitation of study

This study was conducted after one year of starting the MMT program and it was beginning phase as well as the staffs might

not be well trained to keep records of the clients' dose properly. The awareness and information about methadone among drug users might not have adequate, rumor among the drug users about side effects of methadone and in initial phase of the program the clients' dose recording system was manual and hand writing, which might increase the risk of errors in maintain the clients' dose record.

## Acknowledgement

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