

## Factors Affecting the Retention Value of Drug Addict Patients in Methadone Maintenance Therapy

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### ABSTRACT

Methadone is a synthetic drug belonging to the opiate class that is given in oral dosage form to patients as a substitute therapy for opioid addiction. Methadone was chosen as the main substitution therapy because it has an effect resembling morphine and cocaine with a longer working life so that it can be given once a day which is used by drinking. This study aims to determine the factors that affect the retention value of drug addict patients in methadone maintenance therapy at Bangil Health Center. This study was conducted retrospectively, taking medical record data of patients who followed methadone maintenance therapy selected by *consecutive sampling*. Data obtained as many as 35 patients. The results of demographic data showed the most male sex 33 people (94.3%), aged 26-35 years 22 (62.9%), SMA 29 (82.9%), working 35 (100%), married 27 (77.1%), opium 35 (100%), amphetamines 26 (74.29%), alcohol 33 (94.29%) and tobacco 33 (94.29%). The highest initial dose was 30-50mg, 23 people (65.7%), the smallest maintenance dose <60mg, 33 people (94.3%) and the largest maintenance dose >120mg, 24 people (68.6%). The retention value of patients < 6 months is 7 people (20%) and > 6 months 28 people (80%)

## INTRODUCTION

Based on data from the National Narcotics Agency (BNN), in 2022 there were 851 cases of drug abuse. This number increased to 11.1% compared to the previous year of 766 cases. As for the number of suspects in drug cases in 2022, there are 1,350 people. This number also increased by 14.02% compared to 2021 of 1,184 people. In addition, in 2022 BNN succeeded in uncovering 49 drug networks consisting of 23 international networks and 26 national networks. BNN also succeeded in confiscating 1,904 tons of methamphetamine, 1.06 tons of marijuana, 262,789 grains of ecstasy, 16.5 kg of ecstasy powder (BNN, 2022).

According to article 54 of Law Number 35 of 2009 concerning Narcotics, Drug Addicts and victims of Narcotics abuse are required to undergo medical rehabilitation and social rehabilitation. In article 56 paragraph (1), medical rehabilitation of Narcotics Addicts is carried out in hospitals designated by the Minister, paragraph (2) Certain rehabilitation institutions organized by government agencies or the community can carry out medical rehabilitation of Narcotics Addicts after obtaining the approval of the Minister (Ministry of Health of the Republic of Indonesia, 2009).

Medical rehabilitation is a process of integrated treatment activities to free addicts from narcotic dependence. Social rehabilitation is a process of integrated recovery activities, both physical, mental and social, so that former drug addicts can return to carry out social functions in community life (Law No. 35, 2009). In 2022, as many as 31,868 drug abusers accessed rehabilitation services nationwide, an increase from 2021 with 26,693 abusers (Setkab RI, 2023).

Based on the Regulation of the Minister of Health of the Republic of Indonesia Number 57 of 2013 concerning Guidelines for the Implementation of the Methadonena Maintenance Therapy Program, that Methadone maintenance therapy is one of the opiate replacement therapi (*Opiate Replacement Therapy*) needed for opiate addicts to control their dependent behavior and also as an effort to reduce the adverse effects of HIV/AIDS transmission. PTRM is a series of therapeutic activities using Methadone accompanied by psychosocial interventions for opioid-dependent patients according to the diagnostic criteria of the III Classification and Diagnostic Guidelines for Mental Disorders (PPDGJ-III) (Ministry of Health RI, 2013).

Methadone is a narcotic in the form of finished drugs in a single dosage form which is included in the type of Class II Narcotics as referred to in Appendix I of Law Number 35 of 2009 concerning Narcotics. Methadone distribution is carried out by the storage facilities of Government pharmaceutical preparations. Methadone is a synthetic drug belonging to the opiate class that is given in oral dosage form to patients as a substitute therapy for opioid addiction. Methadone was chosen as the main substitution therapy because it has an effect resembling morphine and cocaine with a longer working life so that it can be given once a day

which is used by drinking. The effects caused by methadone are similar to those caused by heroin, but the "fly" effect is not as delicious as heroin, the nature of dependence is not as bad as heroin and the withdrawal symptoms are not as severe as heroin. The purpose of giving methadone is to provide opportunities for users to change their lives to be more stable, reduce risks related to injecting drug use and also reduce crimes that are often associated with addiction (Ichawan *et al*, 2018).

The retention or length of time patients undergo methadone maintenance therapy after receiving therapy for more than 6 weeks (42 days) is one indicator for the methadone maintenance therapy program (PTRM). The retention *rate* can be used to measure the success of the program. Based on research conducted by Timko *et al* (2016), a *systematic review* of 55 articles from 2010-2014 found variability in *retention rate* at 3 months (19%-94%), 4 months (46%-92%), 6 months (3%-88%), 12 months (37%-91%) in *follow-ups randomized controlled trials*.

Research conducted by Udayani *et al* (2020), showed that most had a retention of  $\geq 1$  year which is 36 patients (90%) and retention of  $< 1$  year which is 4 patients (10%). Based on *the Fisher test*, it is known that there are two factors that are significantly related to retention, namely work and dose ( $p < 0.05$ ). Based on these data, researchers are interested in conducting research on factors - factors that affect the retention value of drug addict patients on methadone maintenance therapy.

## LITERATURE REVIEW

According to other research data, the characteristics of research subjects include: age  $\leq 25$  years as many as 1 person (2.5%),  $> 25$  years old 39 people (97.5%), female gender 4 people (10%), male 36 people (90%), secondary education 33 people (82.5%), high 7 people (17.5%), private employment 18 people (45%), self-employed 22 people (55%) and retention  $< 1$  year 4 people (10%),  $\geq 1$  year 36 people (90%) (Udayani *et al*, 2020).

General description of methadone use, where for initial doses  $< 30$  mg/day 11 (78.6%) and  $\geq 30$  mg/day 3 (21.4%), maintenance doses  $< 80$  mg/day 4 (28.6%) and  $\geq 80$  mg/day 10 (71.4%). While the study conducted by Wei *et al* (2013), the dose of *methadone maintenance therapy* (MMT) in less than 1 month varied, namely an average of  $48.76 \pm 17.03$  mg / day (Nuramadani *et al*, 2022).

Based on a *systematic review* of 55 articles from 2010-2014 found variability in *retention rate* at 3 months (19%-94%), 4 months (46%-92%), 6 months (3%-88%), 12 months (37%-91%) in *follow-ups randomized controlled trials*. *Retention rate* according to Wei *et al* (2013), cumulative retention at 12 months, 24 months, 36 months, 48

months, 60 months and 72 months after initiation of *methadone maintenance therapy* (MMT) is 0.87, 0.76, 0.66, 0.57, 0.49 and 0.43 respectively (Timko *et al*, 2016). Other studies related to cumulative *retention rate* at 12 months, 24 months, 36 months, 48 months, 60 months and 72 months after initiation of *methadone maintenance therapy* (MMT) were 0.87, 0.76, 0.66, 0.57, 0.49 and 0.43 respectively (Wei *et al*, 2013).

High-dose administration of methadone was more effective in reducing mortality than low-dose mortality with values (OR 1.72, *confidence interval* 95% CI 1.26-2.36) (Farre *et al*, 2020). In another study, high therapeutic doses (>60 mg/day) may reduce the risk of patients withdrawing from treatment (Wei *et al*, 2013). Other studies have also mentioned higher doses of methadone and individualization of each dose independently associated with better retention values in *methadone maintenance therapy* (MMT) (Bao *et al*, 2009). While other studies state that high-dose methadone is significantly associated with *retention rate* ( $p < 0.0001$ ) and reinjection behavior ( $p < 0.001$ ). Methadone dose 80 mg/day (80.0%) and dose 40 -79 mg/day (20.0%) (Mohamad *et al*, 2010).

## METHODOLOGY

This study is an observational study with a *cross-sectional design* conducted retrospectively on narcotic and psychotropic addict patients at the Bangil Health Center. The inclusion criteria were narcotic and psychotropic addict patients undergoing a methadone maintenance therapy (PTRM) program in Puskesmas Bangil, a patient addicted to narcotics and psychotropic drugs who received methadone maintenance therapy for the first time at Puskesmas Bangil, patients were in therapy for more than 6 weeks (42 days), aged 18 years or older and had tried to stop using opioids at least once. Exclusion criteria are PTRM patients receiving ARV and OAT drug therapy, incomplete patient medical record data/transfer patients/transit patients, pregnant and lactating women. The sampling method was carried out by *consecutive sampling*, namely taking all medical record data in the outpatient installation of the Bangil Health Center in accordance with the inclusion criteria in this study. The data obtained were 35 patients. Data analysis in this study used *Chi Square* and Fisher tests.

## RESEARCH RESULT

Based on the data obtained, the most genders were men 33 people (94.3%), aged 26-35 years 22 people (62.9%), high school education 29 people (82.9%), working 30 people (85.71%), married status 27 people (77.1%), opium 35 people (100%), amphetamines 26 people (74.29), alcohol 33 people (94.29%), tobacco 33 people (94.29%), initial dose 30-50mg, 23 people (65.7%), the smallest maintenance dose < 60mg, 33 people (94.3%), the largest maintenance dose >120mg, 24 people (68.6%) and patient retention values <6 months 7 people (20%) and >6 months 28 people (80%).

Table 1. Factors affecting retention value

<b>Demographics</b>	<b>f</b>	<b>%</b>	<b>Pvalue</b>	<b>OR</b>
<b>Gender</b>			0.113	0.031
Man	33	94.3		
Woman	2	5.7		
<b>Age</b>			0.536	3.094
17-25 years	1	2.9		
26-35 years	22	62.9		
36-45 years	12	34.3		
<b>Education Level</b>			0.887	0.692
SMP	4	11.4		
SMA	29	82.9		
College	2	5.7		
<b>Work</b>			0.731	0.000
Work	30	85.71		
Not Working	5	14.28		
<b>Marital Status</b>			0.999	0.000
Unmarried	5	14.3		
Marry	27	77.1		
Divorce	3	8.6		
<b>Dosis Metadon</b>				
<b>Beginning</b>			0.576	1.583
<30 mg	12	34.3		
30-50 mg	23	65.7		
<b>Smallest Maintenance</b>			0.365	0.222
<60 mg	33	94.3		
60-100 mg	2	5.7		
<b>Largest Maintenance</b>			0.021	9.167
<120 mg	11	31.4		
>120 mg	24	68.6		

Based on the results of the analysis using the Fisher test, it shows no there were significant influences between sex, age, education level, occupation, marital status, starting dose and smallest maintenance dose. While the results of the analysis of the largest maintenance dose with retention value, showed a significant effect with a *Pvalue* of 0.021; OR 9,167.

## DISCUSSION

The problem of abuse of narcotics, psychotropic substances and other additives (NAPZA) or known by other terms as narcotics and dangerous drugs (DRUGS) is one of the very serious problems because it can threaten the future of the nation in all developed countries and in developing countries. The number of drug cases in Indonesia from year to year has increased which is very worrying both in the context of users, the chain related to these illicit goods (producers, dealers, users) and the number of drugs themselves which are increasingly diverse (Ministry of Health RI, 2014).

The impact caused by drug abuse can damage human health both physically, emotionally, and the behavior of the wearer. In fact, in use with excessive doses or known as *overdose* (OD) can cause death. Therefore, a program to reduce the adverse effects of drug transmission is absolutely necessary. One of them is substitution therapy by administering oral methadone drugs as a way to try to release addicts from drug dependence (Kemenker RI, 2013).

One substitution program is the methadone maintenance therapy program (PTRM). The methadone maintenance therapy program (PTRM) itself has two preferred goals. The first goal is to help addicts to stop using drugs which are replaced with methadone which is reduced gradually over a certain period of time while the second goal is to reduce the adverse effects caused by injection drug use (Ministry of Health RI, 2008).

Methadone is a synthetic drug belonging to the opiate class that is given in oral dosage form to patients as a substitute therapy for opioid addiction. Methadone was chosen as the main substitution therapy because it has an effect resembling morphine and cocaine with a longer working life so that it can be given once a day by drinking. The effects caused by methadone are similar to those caused by heroin, but the "fly" effect is not as delicious as heroin, the nature of dependence is not as bad as heroin and the withdrawal symptoms are not as severe as heroin (Ministry of Health RI, 2013).

Methadone is used as a safe and effective drug to withdraw addicts from heroin but not to quit (Issues, 2006). The initial dose of methadone is in the range of 20-40 mg and ranges  $\leq 40$  mg by the end of the first week (Department of Health, 20006). Treatment continuity is essential to show little or no improvement (NIH, 1997).

The retention or length of time patients undergo methadone maintenance therapy after receiving therapy for more than 6 weeks (42 days) is one indicator

for the methadone maintenance therapy program (PTRM). The retention *rate* can be used to measure the success of the program.

## CONCLUSIONS

Based on the results of analysis using the Fisher test, it showed no significant influence between sex, age, education level, occupation, marital status, initial dose and smallest maintenance dose. While the results of the analysis of the largest maintenance dose with a retention value, showed a significant effect with a *Pvalue value* of 0.021; OR 9,167.

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