

## ICASH-A36

# THE STRATEGY TO IMPROVE THE QUALITY OF LIFE AMONG HEROIN ADDICTS THROUGH METHADONE MAINTENANCE THERAPY

Eka Yuliantiningsih\*, Puput Oktamianti

Faculty of Public Health, Universitas Indonesia, Depok, Indonesia

\*Corresponding author's e-mail: eka.lutfi@yahoo.com

### ABSTRACT

**Background:** Many cases of heroin abuse was the leading cause of death. Due to difficulties stop addiction to heroin, many methods were used for the recovery process. The effective and approved therapy method with a medical approach was transferal heroin with another substance program, which was called methadone maintenance therapy. Methadone was chosen as the main substitution therapy because it has a similar effect to heroin with lengthier bioavailability, so it could be prescribed once a day. There are positive benefits that can make heroin addicts function normally with methadone maintenance therapy, it will improve the quality of life people with heroin addicts.

**Methods:** This research used a narrative review method with data retrieval from Universitas Indonesia online database such as PubMed and Springer Link. The research strategy has done by employed several articles about life quality improvement of heroin addicts with methadone maintenance therapy service, which already publish in Universitas Indonesia online database in December 2017. The chosen articles were use, selected by inclusion criteria and exclusion criteria.

**Results:** From the reviewed the 5 published journal articles, revealed one of the benefits from methadone maintenance therapy services is improving the life quality of heroin addicts.

**Conclusions:** Methadone maintenance therapy services could improve the life quality of heroin addicts.

**Keywords:** Heroin addicts, methadone maintenance therapy, life quality

### INTRODUCTION

In the medical realm, heroin is one kind of narcotics which actually gives a great advantage on the patient's recovery. Problems occur when heroin is abused and excessively used beyond the medical purposes. The impacts of chronic heroin abuse can cause someone to suffer from "narcotic crave" [1] which is a phenomenon that causes the addicts hunt for heroin, aside from many consequences it incurs. The addicts can also be addicted of enjoying the effect of "fly" continuously, and if heroin is used excessively, it can cause an over-dosage that may result in a death. A person who abuses and is addicted to heroin is called a heroin addict. [1].

Generally, the heroin addicts consume heroin by injecting it intravenously after the heroin powder is dissolved into the water or can also through the method of inhaling the smoke after the heroin powder is burnt. Because in general heroin is injected, the heroin addicts are in the category of Injection Drug User

(IDU) or People Who Inject Drugs (PWID). [2]. Generally, the use of the syringe is by turns among the fellow addicts, therefore, it can cause an increase in the transmissions of HIV, Hepatitis B, and Hepatitis C.[3,4]. In addition, heroin abuse by the heroin addicts can have impacts on the physical change, psychological change, and social life change [5]. The physical change may include the changes in neural, skin, heart, reproduction, and other body organs. The psychological change can be in the forms of difficulty concentrating, anxiety and full of suspicion, losing self-confidence, and even committing suicide. In the social life changes, an anti-social behavior, being excommunicated, disturbance in education and job, gloomy future, and becoming the family burden can happen [5].

The National Narcotics Board or BNN stated that, in 2011, there were 37,989.81 grams of abused heroin and it increased by 72.4% into 52,425.54 in 2012 [6]. The data were supported with the data obtained from the Prevention, Eradication, Misuse, and Illicit Narcotics Circulation or P4GN in 2012. It was recorded that approximately 17,734 people obtained medication or rehabilitation in all over Indonesia, and the kind of drugs which was mostly used was heroin by as many as 10,768 people, marijuana by as many as 1,774 people, crystal meth by as many as 984 people [6].

Based on the data obtained, the biggest misuse of drugs is the heroin [6], therefore, until now, the therapeutic method using a medical approach which is the most effective and recognized in overcoming the addiction to heroin is the substitution program of drugs that substitutes to another substance called methadone maintenance therapy [1, 7].

In Hong Kong, methadone as a therapy of opioid substitution has been conducted since 1990 [6]. In Thailand, methadone was approved as a therapy in 2000 and had become a universal coverage in 2008 [8]. In Indonesia, the methadone therapy was introduced in 2003 in RSKO Fatmawati (Fatmawati Hospital for Drug Addiction) and in Sanglah Hospital, Bali [1, 9]. In Malaysia, methadone was introduced in 2006 [10]. In Taiwan, the methadone therapy began in the end of 2006 [3].

Methadone is in the group of synthetic opioid in which the mechanism is similar to that of morphine and heroin. It functions on the similar receptor (action place) and also causes a similar effect as analgesic (painkiller) [9]. Similar to morphine and heroin, methadone is in the category of drugs [11, 12]. Nevertheless, its characteristic which is more stable than heroin and its longer work duration helps the patients survive longer with a sensation of minimum decreased consciousness. Therefore, it enables the patients to consume once a day without disturbing their routine activity. Methadone does not generate a feeling of euphoria, neither does heroin/morphine. It is called maintenance because the addiction to the drugs of opioid group cannot be stopped immediately because it will generate an extraordinary withdrawal symptom (or *sakaw*) and the addicts will feel very painful, therefore, a substitution therapy is needed gradually [1].

Methadone maintenance therapy is one of activities of harm reduction on the HIV transmission among the injecting drugs users [11], by giving the liquid methadone in the form of oral preparation/per orally [13]. Based on the trial results of Methadone Maintenance Therapy Program in Sanglah Hospital and in RSKO Fatmawati Jakarta [1], the improvement in the life quality from the physical aspect, psychological aspect, social relation, and environmental aspect, decrease in criminal number, decrease in depression, and improvement in the activities to return back as a member of society are attained.

The Life quality is defined by WHO as “the individuals’ perception on their position in the life, in the contexts of culture and value system where they live and in relation to the goal, the hope, the standard, and the interest”. [14]. WHO developed two instruments to measure the life quality, they are: WHOQOL-100 and WHOQOL-BREF. WHOQOL-100 is an instrument of measurement on the life quality for all kinds of disease, in all different medical treatments or disease intervention. WHOQOL-BREF is a short version of WHOQOL-100, which is arranged to measure the life quality in detail on a certain population (for example

the patients of cancer of certain diseases such as HIV/AIDS). WHOQOL-BREF consists of 26 questions, measures 4 domains including the physical health, the psychological health, the social relation, and environment health.

Another opinion claimed that life quality is a general view consisting of some components and basic dimensions related to the health, such as physical function, psychological condition, social function, and diseases as well as their treatment [15]. The physical health of an individual can be seen from the role limitation, the physical function, the presence of pain, and the individual's perception on his/her health, meanwhile, the mental health is viewed from the role limitation emotionally and the social function limitation the individual undergoes. Recently, the therapeutic strategy in the medical realm is not only focused on the clinical condition, but also on the patient's life quality which becomes one of important standards of a successful therapy [4].

Talking about the advantages of methadone maintenance therapy as a substitution therapy of injecting heroin misuse is inseparable from the parallel issues such as the HIV/AIDS countermeasure, heroin supply reduction, heroin demand reduction, and improvement in the life quality of the heroin addicts [1]. Nevertheless, this article will only discuss specifically the strategy to improve the life quality of the heroin addicts. Therefore, the purpose of this article writing was to describe the strategy to improve the life quality of the heroin addicts through the advantages of methadone maintenance therapy service.

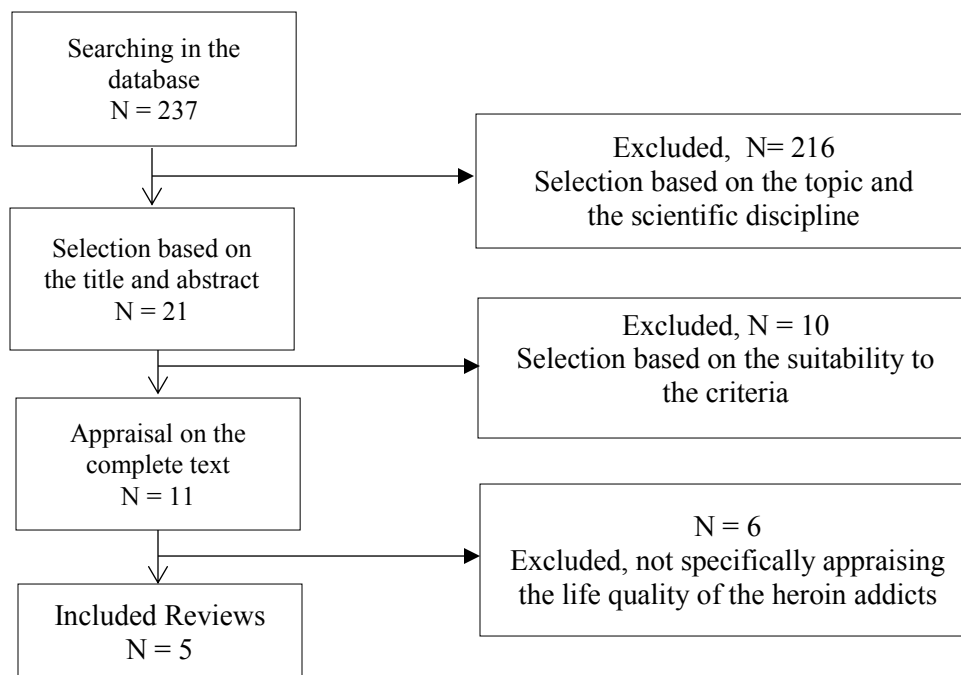
## RESEARCH METHOD

This research used the method of systematic review, so the result is more trustworthy. Literatures were collected through online database of the University of Indonesia namely *PubMed* and *SpringerLink*. The Strategy of tracing was conducted to find articles related to the improvement in the life quality of the heroin addicts through the Methadone Maintenance Therapy service which had been published. The literature tracing was conducted in December 2017. The keywords used are *Heroin addict*, *Methadone Maintenance Therapy*, *Life quality*. Then, the chosen journal articles were selected again using the criterion of inclusion: publication in 2007 – 2017, researches on the improvement in life quality of methadone maintenance therapy in Asia, researches on the effectiveness of methadone maintenance therapy in Asia, researches on the implementation of methadone therapy in Asia. We exclude researches on morphine versus methadone therapy and researches on the relationship of the high dose of methadone in the methadone maintenance therapy

## THE RESULTS OF LITERATURE SEARCH

112 articles were found on the database of *PubMed* and 125 articles from *SpringerLink*. After the titles of the articles were selected based on the criterion of inclusion, they would be excluded if there was discrepancy against the research criteria. From the appraisals, 216 articles were excluded, the remaining 21 articles were to be seen their titles and abstracts, then the remaining 11 articles would be seen their complete texts. From the 11 articles, 5 articles were found suitable for conducting the systematic review.

Chart 1. Flow Chart of Research Search



There are three articles to be reviewed using the design of prospective cohort, one article used the design of Cross Sectional, and another one used the design of longitudinal study. This table consists of the findings of relevant articles including: author, year of publishing, location of research, subject or exposure, research questions, design of research study, sample, and results/conclusion.

Table 2. Critical appraisal on the articles.

Author, Year, location	Title of Research	Design of Study	Sample	Results
Nizam Baharom et al. 2012, Malaysia	Improvement of life quality following 6 months of methadone maintenance therapy in Malaysia	Prospective Cohort	122 male patients aged 18 – 58, from 2 clinics of MMT owned by the government	After 6 months of research, a significant change in the four domains of <i>WHO life quality</i> was obtained. The biggest was in the domain of psychological health, followed by the domain of physical health, the domain of environmental health, and finally was the domain of social relation.



Author, Year, location	Title of Research	Design of Study	Sample	Results
Joni Teoh Bing Fei at al, 2013, Malaysia	Effectiveness of Methadone Maintenance Therapy and Improvement in Life quality Following a Decade of Implementation	Prospective Cohort	23 male patients in the cohort I (2005-2006),  38 male patients in the cohort II (2007-2008)  31 male patients pada in the cohort III (2009 – 2013)  Total of 92 male patients aged 36.7 in average.	There was a significant increase in all domains of WHO Life quality (WHOQOL), they are: physical health, psychological health, social relation, and environmental health. The domain of physical health shows the biggest measure of effect.
Ying-Chun Chou et al, 2013, Taiwan	Improvement of life quality in methadone treatment patients in northern Taiwan: a follow-up study	Prospective Cohort	559 patients in the early admission, 285 patients participated up to 6 months and 155 patients participated in the research up to 12 months of maintenance therapy.	There was a significant increase in all domains of WHOQOL, the highest was in the domain of psychological health and social relation.
Long Hoang Nguyen at al. 2017, Vietnam	Life quality and healthcare service utilization among methadone maintenance patients in a mountainous area of Northern Vietnam	Cross Sectional	241 male patients aged above 18.	There was a good HRQOL (Health Related Life quality), although the use of MMT clinic was still low because the location was difficult (mountainous area)
Sadeghi N et.al, 2017, Teheran Iran	Life quality of adolescents and young people arrive at an addiction treatment centers upon their admission, and 1,4 and 8 months after methadone maintenance therapy	Longitudinal Study	141 adolescents and young people aged 18 – 25 y.o.	There was an improvement in the life quality in the first month after attending MMT. The improvement in QOL after 4 and 8 months after MMT was not as much as the one in the first month.

Based on Table 2, researches show that the methadone maintenance therapy is an important predictor in changing the behaviour, therefore it improves the life quality of the sufferers if they endure the therapy program in a significant period of time [3, 5,10,16]. Nevertheless, after four up to eight months of treatment, the increase in the score of the life quality of the patients was not as much as the one after a month of treatment [5]. There is a result of improvement in the life quality after 12 months of therapy, although the prevalence of the respondent was low because the location was in the mountainous area. It indicated that there was an advantage of improvement in the life quality of the patients through the presence of Methadone Maintenance Therapy although there was a barrier of mountainous location which was difficult to reach out.[2]

## **DISCUSSION**

To the best of researchers' knowledge, this is the first systemic review of methadone's benefits to the improved the life quality of heroin addicts. Based on the results of the literature review in Table 2, the prospect of Methadone Maintenance Therapy (MMT) program was very good at the opioid (heroin) addiction treatment in which such addiction still becomes the big health problem for people [1,10].

Based on chart 2, the methadone maintenance therapy program is a very important Harm Reduction activity. Injecting Drug User will transmit HIV virus and / or Hepatitis B / C virus to others [1, 10]. To prevent addicts from getting heroin, certainly there is a need for another approach such as reducing heroin supply and reducing heroin demand. Where these two approaches deal with is the problem of reducing criminality [1, 3].

Referring to the results of research on methadone maintenance therapy conducted in Asian countries such as Malaysia, Iran, Taiwan and Vietnam, the research shows a positive impact on the life quality of heroin addicts in terms of physical, psychological, social and environmental relations [3,5,10,16]. Increased quality life of heroin addicts caused by wild addicts using illegal heroin [3], modified habit by visiting methadone maintenance therapy clinic every day initially to regulate the use of dosage substitution also to see if symptoms of intoxication occur [1,3,5,10,16]. Heroin addicts can be assessed for their comorbidities by visiting the clinic every day, so they can be treated as early as possible. Substituting heroin to methadone prevents addicts from re-using heroin [17]. This is the basic reason that the methadone maintenance therapy program needs to be maintained.

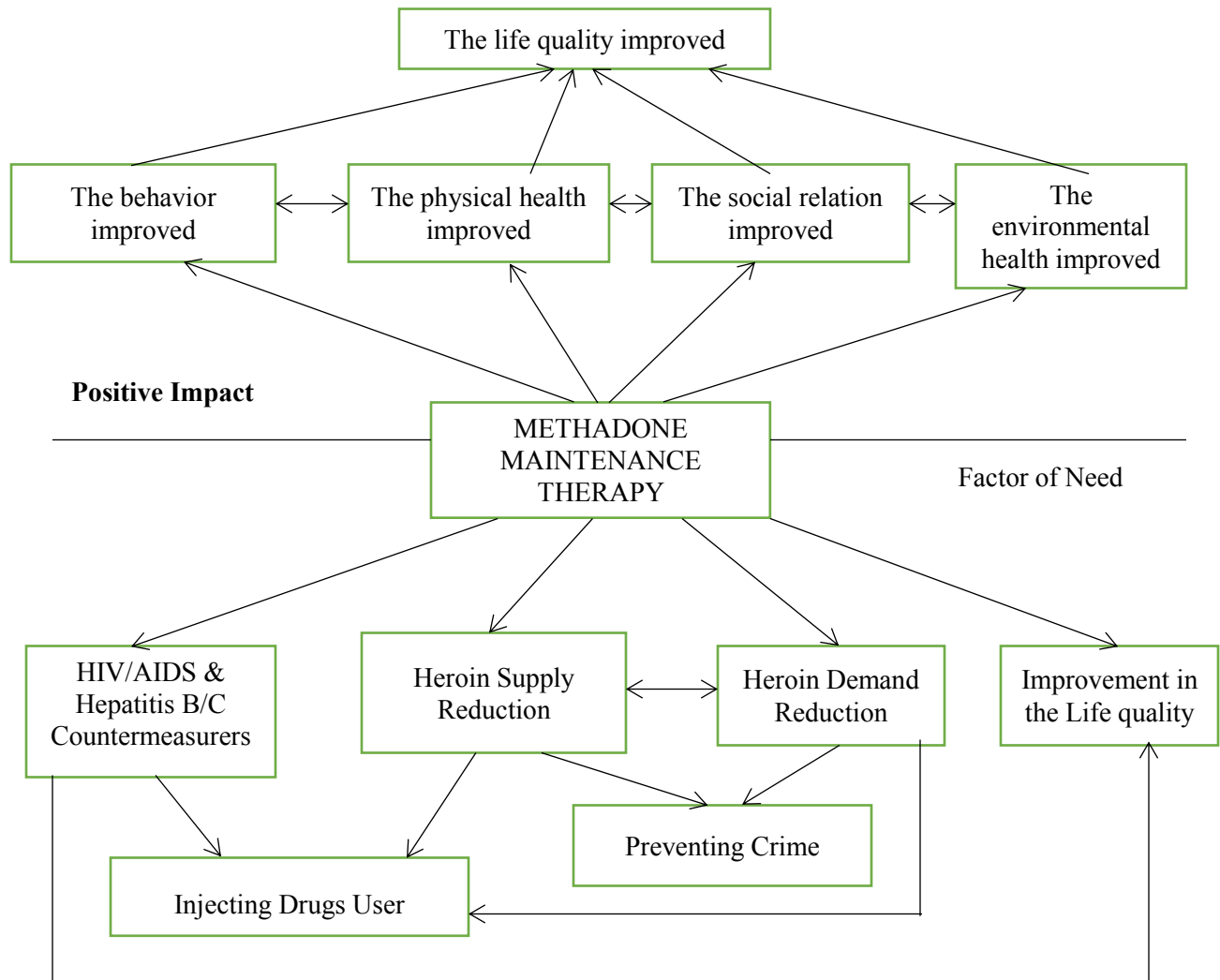


Chart 2. Logical Empirical Tree of Methadone Maintenance Therapy

## CONCLUSION

The review results on all research articles indicate that there was an improvement in the life quality of the heroin addicts by attending the methadone maintenance therapy service. The improvement in the life quality of the addicts was indicated in four domains of life quality, which are: physical health, psychological health, social relation, and environmental health. The strength of the results of this review is the prospect of the program of methadone maintenance therapy is highly promising at the long-term treatment on the heroin addicts where heroin addiction remains a big health problem for people. It is recognized that this literature review has several shortcomings, including the minimum number of publication websites used as data sources. Apart from the two websites that are used as sources of data for this literature review, there are many more websites that provide scientific publications. However, the website cannot be included because of limited access and authors' copyright. In addition, the review period of this literature review only briefly lasts for four years, so further study is needed to obtain more accurate results.

## REFERENCES

1. Kemenkes RI (Kementerian Kesehatan Republik Indonesia). Modul Pelatihan Program Terapi Metadon (PTRM). Edisi Revisi 2017. Jakarta.2007
2. Nguyen L, Nguyen L, Boggiano V, Hoang C, Van Nguyen H, Le H et al. Life quality and healthcare service utilization among methadone maintenance patients in a mountainous area of Northern Vietnam. *Health and Life quality Outcomes*. 2017;15(1).
3. Chou Y, Shih S, Tsai W, Li C, Xu K, Lee T. Improvement of life quality in methadone treatment patients in northern Taiwan: a follow-up study. *BMC Psychiatry*. 2013;13(1).
4. Anggraini K, Diniari,N. Kualitas Hidup Klien Terapi Metadon di Program Terapi Rumatan Metadon (PTRM) Sandat RSUP Sanglah. *E-Jurnal Medika*. 2017; 6 (10); 29-33.
5. Davaridolatabadi E, Sadeghi N, Rahmani A, Ghodousi A, Ziaeirad M. Life quality of adolescents and young people arrive at an addiction treatment centers upon their admission, and 1, 4 and 8 months after methadone maintenance therapy. *Journal of Education and Health Promotion*. 2017;6(1):95.
6. BNN (Badan Narkotika Nasional). Survei Nasional Penyalahgunaan Dan Peredaran Gelap Narkoba Tahun 2003, Puslitbang & Info Lakhar BNN. 2007.
7. Lasmawan G, Valentina. Kualitas Hidup Mantan Pecandu Narkoba Yang Sedang Menjalani Terapi Metadon. *Jurnal Psikologi Udayana*. 2015; 2(2): 113-128
8. Hayasi K, Ti L, Pramoj P, Ayutthaya Na, Suwannawong P, Kaplan K, Small W, Kerr T. Barriers To Retention In Methode Maintenance Therapy Among People Who Inject Drugs In Bangkok, Thailand : A Mixmethode Study. *Harm Reduction Journal*. 2017. 14:63. DOI.1186/s12954-017-0189-3.
9. Pedoman Pelaksanaan Program Terapi Metadon di Lembaga Pemasarakatan Dan Rumah Tahanan Negara. Departemen Hukum dan Hak Azasi Manusia. Republik Indonesia. Direktorat Jenderal Pemasarakatan. 2007.
10. Baharom N, Hassan M, Ali N, Shah S. Improvement of life quality following 6 months of methadone maintenance therapy in Malaysia. *Substance Abuse Treatment, Prevention, and Policy*. 2012;7(1):32.
11. Undang-undang Republik Indonesia Nomor 35 Tahun 2009 tentang Narkotika, lampiran 1. 2009
12. Peraturan Menteri Kesehatan Republik Indonesia Nomor 57 Tahun 2013 Tentang Pedoman Program Terapi Rumatan Metadona. Pasal 1 ayat 1. 2013.
13. Timoer S, Murti B, Soemanto R. Factor Analysis with Health Belief Model on The Adherence To Methadone Maintenance Therapy. *Journal of Epidemiology and Public Health*. 2016; 1(1): 49 -57. <https://doi.org/10.26911/jepublichealth.2016.01.01.06>
14. Skevington S, Lotfy M, O'Connell K. The World Health Organization's WHOQOL-BREF life quality appraisal: Psychometric properties and results of the international field trial. A Report from the WHOQOL Group. *Life quality Research*. 2004;13(2):299-310.
15. Sarafino, E. P. *Health Psychology*. USA: Copyright Clearance Center. inc. 2006
16. Teoh Bing Fei J, Yee A, Habil M, Danaee M. Effectiveness of Methadone Maintenance Therapy and Improvement in Life quality Following a Decade of Implementation. *Journal of Substance Abuse Treatment*. 2016;69:50-56.
17. Dennis MC, Kelse C, Todd Korthuis. Treatment and Prevention of Opioid Use Disorder : Challenges and Opportunities. *Annual Review of Public Health*, 2018; 39:525-41.