Changes in the Quality of Life of Outpatients in Methadone Maintenance Treatment Clinics in Kathmandu Valley

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ABSTRACT

Introduction
Methadone maintenance treatment (MMT) is widely accepted treatment option for the opioid dependent individuals. The evaluation of the quality of life represents the assessment of the effectiveness of the treatment program. The study aimed to explore the impact of MMT program on clients’ quality of life in the first 6 months of treatment.

Methods
A total of 63 patients were recruited from the 5 different methadone clinics of Kathmandu valley. A prospective follow-up design was used. The semi-structured pro forma was filled up. To assess quality of life, WHO Quality of Life questionnaire (WHOQOL-BREF, 26-item version) was used. The tool was used to assess the quality of life at the baseline and after 6 months of enrollment in MMT program.

Results
Following 6 months of methadone maintenance treatment of opioid dependent individuals, significant improvements (P<0.001) were observed in all measured domains of quality of life i.e. physical, psychological, environmental and social. The least improvement was noted in the social domain.

Conclusion
Methadone maintenance treatment is helpful in improving the quality of the life of the opioid dependent individuals in MMT clinics.

Keywords: Kathmandu valley, methadone, methadone maintenance treatment, quality of life

INTRODUCTION

Substance abuse is a global problem that negatively impacts the health, social and economic structure of the individuals, families, communities, and nations. According to the 2018 World Drug Report of the United Nations Office of Drugs and Crime (UNODC), it is estimated that 1 in 18 adults, or a quarter of a billion people between the ages of 15 and 64 years, used at least one drug in 2016.¹ Among them 30.5 million people worldwide suffer from drug use disorder (harmful use or drug dependence). The report also highlighted that 34.3 million misused opioid in 2016, which is 1.3 million more than in 2014. Similarly, Nepal has also recorded the growth of Opioid users from 46,310 in 2006 to 91,534 in 2009.² Opioid dependence is the major public health concern which is associated with high morbidity and mortality. Staphylococcal pneumonitis, endocarditis, meningitis, brain abscess, viral hepatitis particularly B and C, malaria, tetanus, osteomyelitis, syphilis and HIV are frequent complications due to intravenous injection which is the most common means of drug use in opioid dependents.³ To mitigate this problem,
Dole and Nyswander started the Methadone clinics in the 1960s which became models for the Methadone Maintenance Treatment (MMT) program throughout the world. In Nepal, the first MMT clinic was introduced in a psychiatric hospital in Kathmandu in 1994. Since then methadone maintenance clinics has been expanded and in Kathmandu valley alone there are five methadone maintenance clinics where hundreds of opioid dependent individuals receive treatment each day.

Since its introduction, MMT has become the most popular and extensively researched methods for the treatment of opioid dependence worldwide. Studies have consistently found that the enrollment in the MMT program is associated with the reduction in the use of illicit drugs, risky injecting and the sharing of injecting equipment and improvement of the overall heath and reduction of mortality of the opioid dependent individuals. 

Measurement of changes in the quality of life of Opioid dependent individuals has been increasingly used as a yardstick of effectiveness of MMT program. The numerous published studies including a systematic review by Feelemyer et al. (2014) in the field of quality of life have consistently shown that MMT program is associated with the improvement of quality of life of opioid users within the short period of time (3-6 months). However, despite MMT clinics are being operated in Nepal for more than a decade, study regarding the effectiveness of this program is sparse. Study of effectiveness of MMT Program in Nepalese context may help to know whether this MMT program is benefiting the clients receiving the service from the Methadone clinics or not. So, this study was carried to find out the changes in quality of life of outpatients in MMT program in Kathmandu valley in the first 6 months of treatment.

METHODS
This prospective follow up study was conducted in three districts of Kathmandu valley. A total of 63 patients were selected by purposive sampling method from the clients visiting in the five MMT clinics of Kathmandu valley. The study period was from May 2016 to October 2016 (6 months). The inclusion criteria were all opioid dependent persons (aged 18-65) who were newly enrolled in the outpatient methadone maintenance program and were willing to undergo follow-up assessment at 6 months. Those with co-morbid psychiatric disorders such as schizophrenia, delusional disorder, other anxiety disorders and mood disorders were excluded. Ethical approval was taken from Institutional Review Committee of Institute of Medicine, Maharajgunj, Kathmandu.

The written informed consent was taken from each of the participants and the semi-structured pro-forma was filled by the clients themselves. The World Health Organization Quality of Life Assessment Brief Version (WHOQOL-BREF) was administered to the clients at baseline i.e. before taking the methadone. It was assisted by trained health personnel like nurses, and doctors present at MMT clinics to ensure that clients fully understood the questionnaire. Subsequent assessments were completed by the participants themselves who were still taking the methadone at the end of 6 months. During the period of study among 84 clients, 21 clients dropped out. In methadone program clients are supposed to go to MMT clinics everyday to take their methadone dose. The clients, who missed their doses for 7 consecutive days were considered as dropouts. Then available data was analyzed for change in quality of life at the end of 6 months.

Self designed semi-structured pro forma was used to collect information about socio-demographic profile and details of substance taking history and associated factors of the clients.

We used the WHOQOL-BREF, which was developed to measure overall quality of life and general health status. The WHOQOL-BREF has been translated into the Nepali language, and the translated version showed good internal reliability (Cronbach's alpha 0.85) in a study of QOL among people living with HIV/AIDS. WHOQOL-BREF has 26 items grouped under four domains: (i) physical health, (ii) psychological well-being, (iii) social relations, and (iv) environment. There are two other items that are measured separately: (1) patient's overall perception of QOL, and (2) overall perception on his/her health. The WHOQOL-BREF questionnaire uses a five-point Likert scale (1–5). Participants responded to questions according to their experience in the previous two weeks. Reverse items (items 3, 4 and 26) were scored reversely. Domain scores for the WHOQOL-BREF were calculated by taking the mean of all items included in each domain and multiplying by a factor of four. The original domain scores were transformed to a scale of 0–100 according to the equation in the published guidelines. A high score represents good quality of life.

Data were analyzed using SPSS Statistics version 17. Dependent t-test was used to determine the significance of the difference between the quality of life scoring at 0 and 6 months.

RESULTS
Among 63 patients who were taking methadone regularly till the end of study period of 6 months,
61 of them were male and 2 were female. The age of the subjects joining the MMT program was variable and majority was from age group 25 to 30. Thirty three percent of them were married and most of them (68.2%) had full time employment. Maximum number of the subjects was educated up to higher secondary level and mostly they were from nuclear family. Socio demographic characteristics of the subjects are listed in Table 1.

Table 2 shows the changes of quality of life subscale scores of outpatients receiving MMT at baseline (before the clients started taking methadone after enrolment in MMT program) and after 6 months. Paired t-test was done on WHOQOL score at baseline and after 6 months (applied for 63 patients who remained in the treatment) for all four domains.

Physical health- The physical health subscale score increased from 28.62 at baseline to 59.62 after 6 months of MMT (p<0.001), indicating that the physical health of outpatients improves after enrolment in the MMT program.

Psychological health- The score of psychological health increased significantly at the end of 6 months, from 27.84 at the beginning of treatment to 58.33 after 6 months of treatment (p<0.001).

Social Relationships- The subscale score for social relationships showed the least improvement, with mean increment of 26.85 from baseline to at the end of 6 months.

Environmental health- The score for Environment domain showed mean improvement of 28.63±11.77 within the 6 months of MMT.

**DISCUSSION**

This study examined the change in quality of life of the opioid dependent individuals after six months of enrolment in the MMT program in Kathmandu valley.

Our study has shown marked improvement of quality of life in all four measured domains of WHOQOL-BREF: physical health, psychological health, social relationships and environment, within 6 months of enrolment in MMT program. The findings are similar to other studies which measured the quality of life. Nordin et al. and Baharom et al. found the notable improvement of quality of life of opioid users of Malaysia in all four domains within six months of therapy.11,12 Torrens et al. had also shown significant positive change in the quality of life of the heroin addict in the first year of MMT, which continued to increase slowly but steadily in next 3 years.13 The research of Padaiga et al. concluded that enrolment in MMT program remarkably improved physical, psychological and environment health of the clients at 6 months but

**Table 1. Socio demographic characteristics of clients**

| Variables          | Frequency (%) |
|--------------------|---------------|
| Sex                |               |
| Male               | 61 (96.8)     |
| Female             | 2 (3.2)       |
| Marital Status     |               |
| Single             | 37 (58.7)     |
| Married            | 21 (33.3)     |
| Separated          | 4 (6.4)       |
| Widowed            | 1 (1.6)       |
| Education          |               |
| University         | 10 (15.9)     |
| H.Secondary        | 24 (38.1)     |
| Secondary          | 15 (23.8)     |
| Primary           | 7 (11.1)      |
| Read and write     | 5 (7.9)       |
| Illiterate         | 2 (3.2)       |
| Occupation         |               |
| Employed           | 43 (68.2)     |
| Unemployed         | 20 (31.8)     |
| Family type        |               |
| Nuclear            | 36 (57.2)     |
| Joint              | 26 (41.2)     |
| Broken             | 1 (1.6)       |
| Past Illness       |               |
| Yes                | 12 (19.1)     |
| No                 | 51 (80.9)     |
| Past drug treatment|               |
| Yes                | 32 (50.8)     |
| No                 | 31 (49.2)     |
| Type of drugs      |               |
| Heroin only        | 5 (7.9)       |
| Polysubstance      | 56 (89.1)     |

**Table 2. Paired t-test quality of life scores by domain at baseline and at 6 month**

| Domain       | Baseline score (mean±SD) | 6 month score (mean±SD) | Difference (mean±SD) | t-value | p-value |
|--------------|--------------------------|-------------------------|----------------------|---------|---------|
| Physical     | 28.62±11.24              | 59.62±10.40             | -31.00±12.74         | -19.31  | <0.001  |
| Psychological| 27.84±11.29              | 58.33±11.30             | -30.29±13.09         | -18.49  | <0.001  |
| Social       | 33.86±14.96              | 60.71±14.31             | -26.85±18.48         | -11.53  | <0.001  |
| Environment  | 30.55±10.53              | 59.18±10.40             | -28.63±11.77         | -19.31  | <0.001  |
not the social relationships. In China, Xiao et al. found that one month of therapy can cause positive impact in quality of life among MMT clients. Research of Ha in Vietnam also demonstrated that MMT brings considerable improvement of the quality of life of drug users after 6 months of treatment. Similarly, Ponizovsky and Grinspoon’s work found that quality of life improved within 1 month and then remained stable until the end of the program.

From the numerous studies done earlier, including ours, has concluded that enrollment in MMT program is associated with significant improvement in quality of life of opioid dependent individuals within few months of treatment. Opioid dependents often have a very chaotic lifestyle and are often marginalized in the society, and they are often fearful to reveal their treatment status to their friends, family members and potential employers. So, it is difficult for them to regain the trust of their acquaintances which makes it hard to enhance the quality of their social relationships in relatively short period of opioid substitution therapy. This issue can be addressed if the MMT program also focused in enhancing the social and relationship skills of the clients. On a greater scale, the general people should be made aware that addiction is a disease like cancer, diabetes, heart disease and should be encouraged to integrate the opioid dependent individuals into the community like they do for the people with other illnesses.

This study has provided the small but vital evidence of effectiveness of the MMT program in the Kathmandu Valley. Nonetheless, this study is limited by the fact that it did not try to find out the factors associated with the changes in the quality of life from the baseline and the six months of the treatment. Evaluation and amendment of some modifiable factors related to poor outcome may be helpful to improve the quality of life of certain subgroups of clients in MMT program who did not show significant improvement in WHOQOL scores.

Another major limitation is that, though 21 clients dropped out from our study, we did not try to find out the factors associated with the dropout of the clients from the MMT program as knowledge of these factors would help to promote the better retention of the service users in the program.

Although our study has consolidated the conclusions of several studies that MMT program plays crucial rule in short term positive impact on service user’s quality of life, some studies have found that long term effect is inconsistent. Habrat et al. found an unexpected reduction in quality of life after 6 months in MMT program though it was not to the prior level, while Maeyer et al. argued that longer duration impact is still unclear. So, further analyses are needed to examine the long term, sustained changes in quality of life of clients in MMT.

CONCLUSION

MMT clients who completed 6 months of treatment in the outpatient clinics of the Kathmandu Valley exhibited remarkable improvement in their quality of life. In other words, Methadone maintenance treatment is significantly benefiting the opioid users in Nepal, and they should be encouraged to stay in the MMT program.

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CONFLICT OF INTEREST
None declared.

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