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DECODING THE PSYCHOSOCIAL FUNCTIONING IN SUBJECTS ON NON-INJECTABLE OPIOID USE

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ABSTRACT

Background: Subjects having the OUD (opioid use disorder) present with an appreciable disturbance in psychosocial functioning and the associated domains. The study of these problems in the psychosocial functioning in opioid use disorder is being studied less in the Indian scenario.

Aim: The present study aimed to assess the psychosocial functioning in subjects on non-injectable opioid use on treatment as usual (Buprenorphine, Tapentadol, Tramadol, Trazodone, Zolpidem, Chlordiazepoxide) to MMT (methadone maintenance treatment).

Methods: The present cross-sectional study assessed 134 non-injecting opioid use disorder subjects on either treatment as usual (n=60) or MMT (n=74) for a minimum of the past 1 month. World Health Organization-The Alcohol, Smoking, and Substance Involvement Screening Test 3.0 and World Health Organization-The Alcohol, Smoking, and Substance Involvement Screening Test 3.0 were used to assess the illness severity and comorbidities in participants. Client satisfaction, QoL, and socio-occupational functioning were assessed with the Client Satisfaction Questionnaire (CSQ-8), WHO Quality of Life (WHOQoL-BREF), and Social and occupational functioning assessment scale (SOFAS) respectively.

Results: The mean SOFAS scores for MMT and TaU were 78.93±8.03 and 73.31±6.75 which was statistically significant with p=0.003. The WHO QoL-BREF scores were significantly higher in the MMT group compared to the TaU group for all the parameters including physical health, psychological health, social relations, and the environment with respective p-values of <0.0001, 0.0003, 0.003, and <0.001. The mean CSQ-8 scores were 21.45±1.45 and 20.58±1.54 respectively which were higher for MMT with p=0.01. The WHO assist scores were comparable between MMT and TaU with 21.66±10.76 and 26.08±9.31 respectively with p=0.09

Conclusion: It was concluded from the study that QoL, client satisfaction, and socio-occupational functioning are better in subjects on MMT for non-injectable opioid use compared to the subjects on TaU.

Keywords: Methadone maintenance treatment, quality of life, non-injectable opioid use, opioid use disorder, treatment as usual

INTRODUCTION

In the category of illegal substances available, opioids form a complicated class of substances. Globally, as of 2018, there are 57.8 million subjects on opioid use following the 2020 World drug reports, and more than half of these opioid users were on opiates. Nearly 20% of the subjects using opioids are from South Asia. An increase of nearly 71% in deaths and an increase of 28% is seen in disability-adjusted life years in subjects on opioids as per the global estimates. In India, opioid abuse is seen in nearly 0.7% of the population which corresponds to 177,000 injectable opioid users, 0.5 million opioid dependents, and 2 million opioid users currently.[1] The primary route of opioid use in Indians is through the non-injectable route. However, subjects using injectable opioids constitute the majority of injectable drug abuse subjects. Among PWID (people who inject drugs), non-injectable drug use constitutes the early phase following the illness onset. The transition from non-injecting drug use to injecting drug use is usually seen after 2-10 years. Non-injectable forms of opioids are usually heroin, buprenorphine, codeine, dextropropoxyphene, and tramadol. Opioids having a high potential for dependency such as heroin usually need substitution therapy.[2]

Previous studies have reported a compromised QoL (quality of life) in subjects with opioid use disorder. OUD is also associated with psychiatric comorbidities, medical disease, HIV status,

literacy levels, gender, familial condition, residence, and socioeconomic status.[3] Also, with the long-term OST (opioid substitution therapy) for 6 months to 3 years and short-term OST for <6 months, an improvement is seen in the quality of life of opioid users. Among the available OSTs, methadone has been associated with cost-effectiveness, improved health-related outcomes, and earlier reported outcomes.[4]

Opioid use disorder is a highly addictive type of disorder affecting social functioning considerably. Social functioning is considered the capacity to attain expectations, needs, and obligations, and manage interpersonal relationships.[5] Functional impairment is associated with relation problems, unemployment, and compromised quality of life in the initial phase, especially in young psychiatric subjects. Poor psychosocial support and stigma are seen in opioid use disorder and are known to considerably affect psychosocial functioning.[6]

The pre-existing programs and protocols for opioid use disorder present varying client satisfaction. Client satisfaction is an assessment of the opinion of the subject concerning the patient-clinician interaction and the program that can help in evaluating the treatment-related requirements and experiences. Previous literature studies showed that treatment retention is largely governed by client satisfaction related to methadone treatment. It is also reported that client satisfaction is positively correlated with treatment retention duration and completion of treatment.[7]

In India, MMT (methadone maintenance treatment) is being introduced recently and is spreading gradually in different parts of the country. However, it is less studied in India. MMT is considered an effective treatment modality for opioid use disorders. The application of OST is skeptical by medical professionals, the media, the government, and society in India. Tramadol, methadone and buprenorphine are used for short-term therapy and during the maintenance phase. Also, it is challenging for the subjects to daily visit the hospital/institution to get the doses of methadone under the supervision of the treating personnel.[8] The present study aimed to assess the clinical picture and psychosocial functioning in terms of client satisfaction, socio-occupational functioning, and quality of life in subjects who are currently noninjecting opioid users and are on TaU (treatment as usual) or MMT and compared the association of different clinical variables and sociodemographic profile in the two groups of opioid users.

MATERIALS AND METHODS

The present cross-sectional comparative clinical study was aimed to assess the psychosocial functioning in subjects on non-injectable opioid use on treatment as usual (Buprenorphine, Tapentadol, Tramadol, Trazodone, Zolpidem, Chlordiazepoxide) to MMT (methadone maintenance treatment). The study assessed the clinical picture and psychosocial functioning concerning client satisfaction, psycho-social functioning, and quality of life in current noninjecting subjects with opioid use disorder taking methadone maintenance treatment and Tau.

Treatment, as usual, was used for treatment taken conventionally and comprised of agents like Clonidine, Benzodiazepines, Tapentadol, Tramadol, and Buprenorphine) given in the OPD (outpatient Department) compared to subjects with opioid use disorders and were managed for the prevention of relapse and withdrawal symptoms. These medications are also given during the maintenance phase owing to the methadone non-availability in Indian pharma sectors. Methadone was considered in a separate group as methadone has non-availability as an over-the-counter drug in India.

The inclusion criteria in the study were subjects of age 18 years or more, having confirmed diagnosis of an opioid use disorder, on non-injecting opioid currently, on maintenance of Tau and MMT for a minimum past 1 month, attending the de-addiction center of the Institute, and had clinical opiate withdrawal scale scores of <5. Following the Liao DL et al[9] in 2014 the minimum duration considered for subjects to remain in stable medication dose with appropriate control on the withdrawal symptoms was taken as 1 month. Current noninjecting opioid users were subjects not using any injectable psychoactive substance for reasons other than medical within the past 3 months following the National AIDS TAU GROUP Programme Guidelines of 2019.[10] The case group for the study was comprised of subjects on MMT and TaU subjects were from the control group. For opioid use disorder, both groups were on maintenance therapy after appropriate control of the withdrawal symptoms.

The exclusion criteria for the study were subjects in morbid conditions needing medical management and compromised the assessment, injectable substance or drug use were on other substance use within the past year, and non-compliant subjects. In the case group, the subjects were given methadone daily directly under the supervision of the treating personnel, whereas, the subjects on TaU were recruited from the de-addiction center. To both groups, inpatient care was

given. To maintain the homogeneity, subjects of both groups were taken from OPD where management was done for withdrawal symptoms or the subjects were on maintenance therapy.

After inclusion, informed consent was taken from all the participants in verbal and written form. This was followed by recording the clinical data and sociodemographic characteristics of the subjects. Substance use disorder and comorbid psychiatric illness were assessed with the Mini-International Neuropsychiatric interview 7.0.2.[11] Severity and risk of the non-injecting opioid use were assessed using the WHO- The Alcohol, Smoking, and Substance Involvement Screening Test (WHO-ASSIST 3.0).[12] The clinical variables assessed were psychiatric or medical comorbidities, duration of TaU or MMT, duration of illness since not treated, illness duration, and age of illness onset. Psychosocial functioning was evaluated concerning QoL, client satisfaction, and socio-occupational functioning. The socio-occupational functioning was assessed with SOFAS (social and occupational functioning assessment scale).[13] Client satisfaction was evaluated with CSQ-8 (Client Satisfaction Questionnaire)[14] and QoL with the WHO QoL-BREF scale.[15] All questionnaires were given in both Hindi and English to the study participants.

The collected data were assessed statistically using the student's t-test and Chi-square test, and correlation was assessed using Statistical analysis software SPSS (version 22) & Graph Pad (version 5). P value ≤ 0.05 was considered significant. The data were expressed in mean and standard deviation.

RESULTS

The present cross-sectional comparative clinical study was aimed to assess the psychosocial functioning in subjects on non-injectable opioid use on treatment as usual (Buprenorphine, Tapentadol, Tramadol, Trazodone, Zolpidem, Chlordiazepoxide) to MMT (methadone maintenance treatment). The present study assessed 134 non-injecting opioid use disorder subjects on either treatment as usual (n=60) or MMT (n=74) for a minimum of the past 1 month. The demographic data of the study participants are summarized in Table 1. The mean age of the study participants was 34.66±12.33 and 32.21±9.55 years for MMT and TaU groups respectively which were comparable with p=0.477. The age range was also comparable between the two groups with p=0.353. The occupational status was also statistically comparable between MMT and TaU groups with p=0.156. There were comparable numbers of married, unmarried, divorced,

and others in the two groups with p=0.724. There were 100% (n=74) males in the MMT group and 93.3% (n=56) males and 6.66% (n=4) females in the TaU group. The residence was rural in 18.91% (n=14) subjects from MMT and 30% (n=18) subjects from TaU, 81.08% (n=60) from MMT were from an urban area and 70% (n=42) subjects of TaU were from an urban area with p=0.27. The income distribution in MMT and TaU groups was statistically comparable with p-0.451. The educational background was also comparable between the two study groups with p=0.129.

On assessing the clinical parameters in the two groups of study subjects, the results are described in Table 2. It was seen that the age of onset for OUD was 25.95±7.97 years in the MMT group and 28.53±8.43 years in the TaU group. This was statistically non-significant with p=0.22. The duration of illness was 10.57±10.53 years for the MMT group and 4.81±4.47 years for the TaU group which was significantly higher for the MMT group with p=0.005. The duration of untreated illness for the MMT group was significantly higher at 9.11±9.83 years compared to 4.63±4.42 years for the TaU group which was significantly lower with p=0.02. The duration of therapy for the MMT group was 2.83±1.93 months which was higher than the TaU group where it was 2.06±1.47 months. However, the difference was statistically non-significant with p=0.08.

Concerning the psychosocial functioning in the two groups, for SOFAS scores of 61-70 were seen in 13.51% (n=10) subjects of MMT and 43.3% (n=26) subjects of TaU which was higher, and scores of 71-80 were reported in 45.94% (n=34) subjects of MMT which was higher compared to 33.3% (n=20) subjects from TaU, and the scores of 81-90 were seen in more subject from MMT with 40.54% (n=30) subjects and 20% (n=12) subjects from TaU. This difference was statistically significant with p=0.02. The mean SOFAS scores for MMT and TaU were 78.93±8.03 and 73.31±6.75 which was statistically significant with p=0.003. The WHO QoL-BREF scores were significantly higher in the MMT group compared to the TaU group for all the parameters including physical health, psychological health, social relations, and the environment with respective p-values of <0.0001, 0.0003, 0.003, and <0.001. The mean CSQ-8 scores were 21.45±1.45 and 20.58±1.54 respectively which were higher for MMT with p=0.01. The WHO assist scores were comparable between MMT and TaU with 21.66±10.76 and 26.08±9.31 respectively with p=0.09 as shown in Table 3.

DISCUSSION

The present cross-sectional comparative clinical study was aimed to assess the psychosocial functioning in subjects on non-injectable opioid use on treatment as usual (Buprenorphine, Tapentadol, Tramadol, Trazodone, Zolpidem, Chlordiazepoxide) to MMT (methadone maintenance treatment). The present study assessed 134 non-injecting opioid use disorder subjects on either treatment as usual (n=60) or MMT (n=74) for a minimum of the past 1 month. The mean age of the study participants was 34.66±12.33 and 32.21±9.55 years for MMT and TaU groups respectively which were comparable with p=0.477. The age range was also comparable between the two groups with p=0.353. The occupational status was also statistically comparable between MMT and TaU groups with p=0.156. There were comparable numbers of married, unmarried, divorced, and others in the two groups with p=0.724. There were 100% (n=74) males in the MMT group and 93.3% (n=56) males and 6.66% (n=4) females in the TaU group. The residence was rural in 18.91% (n=14) subjects from MMT and 30% (n=18) subjects from TaU, 81.08% (n=60) from MMT were from an urban area and 70% (n=42) subjects of TaU were from an urban area with p=0.27. The income distribution in MMT and TaU groups was statistically comparable with p-0.451. The educational background was also comparable between the two study groups with p=0.129. These characteristics were comparable to the previous studies of Gupta S et al[16] in 2020 and Jhanjee S et al[17] in 2016 where authors assessed subjects having demographic data comparable to the present study.

For the assessment of the clinical parameters in the two groups of study subjects, it was seen that the age of onset for OUD was 25.95±7.97 years in the MMT group and 28.53±8.43 years in the TaU group. This was statistically non-significant with p=0.22. The duration of illness was 10.57±10.53 years for the MMT group and 4.81±4.47 years for the TaU group which was significantly higher for the MMT group with p=0.005. The duration of untreated illness for the MMT group was significantly higher at 9.11±9.83 years compared to 4.63±4.42 years for the TaU group which was significantly lower with p=0.02. The duration of therapy for the MMT group was 2.83±1.93 months which was higher than the TaU group where it was 2.06±1.47 months. However, the difference was statistically non-significant with p=0.08. These results were consistent with the previous studies of Mattick RP[18] in 2009 and Solomon SS[19] in 2010 where authors reported a higher duration of illness, a higher duration for non-treated illness, and higher duration therapy with methadone treatment for opioid use disorder compared to other treatments as in the present study.

The study results showed that for the psychosocial functioning in the two groups, SOFAS scores of 61-70 were seen in 13.51% (n=10) subjects of MMT and 43.3% (n=26) subjects of TaU which was higher, a score of 71-80 were reported in 45.94% (n=34) subjects of MMT which was higher compared to 33.3% (n=20) subjects from TaU, and the scores of 81-90 were seen in more subject from MMT with 40.54% (n=30) subjects and 20% (n=12) subjects from TaU. This difference was statistically significant with p=0.02. The mean SOFAS scores for MMT and TaU were 78.93±8.03 and 73.31±6.75 which was statistically significant with p=0.003. The WHO QoL-BREF scores were significantly higher in the MMT group compared to the TaU group for all the parameters including physical health, psychological health, social relations, and the environment with respective p-values of <0.0001, 0.0003, 0.003, and <0.001. The mean CSQ-8 scores were 21.45±1.45 and 20.58±1.54 respectively which were higher for MMT with p=0.01. The WHO assist scores were comparable between MMT and TaU with 21.66±10.76 and 26.08±9.31 respectively with p=0.09. These results were in agreement with the previous studies of Yen CY[20] in 2011 and Maremmani I[21] in 2007 where a significantly better quality of life is reported in opioid use disorder subjects on methadone therapy.

CONCLUSION

Considering its limitations, the present study concludes that quality of life, client satisfaction, and socio-occupational functioning is significantly better in subjects on MMT compared to subjects on TaU. However, more studies and research work from a multi-institutional setup and with a larger sample size are needed to better understand the replication of the findings from the present study. Large-scale implementation and compliance to avoid any associated bias.

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TABLES

Characteristics	**MMT**	**TaU**	**p-value**		
	%	**N=74**	**%**	**N=60**	
Mean age (years)	34.66±12.33	32.21±9.55	0.477		
Age range (years)					
18-30	21.62	16	23.3	14	0.353
31-40	35.13	26	33.3	20	
41-50	18.91	14	33.3	20	
51-60	13.51	10	6.66	4	
>60	10.81	8	3.33	2	
Occupation					
Unemployed	2.70	2	13.3	8	0.156
Employed	102.85	72	86.6	52	
Marital status					
Married	59.45	44	63.3	38	0.724
Others	40.54	30	36.6	22	
Gender					

Males	100	74	93.3	56	
Females	0	0	6.66	4	
Residence					
Rural	18.91	14	30	18	0.27
Urban	81.08	60	70	42	
Income					
<10,000	45.94	34	46.6	28	0.451
10,000-20,000	37.83	28	26.6	16	
>20,000	16.21	12	26.6	16	
Educational status					
Primary	24.32	18	6.66	4	0.129
Intermediate	43.24	32	46.6	28	
Graduate or higher	32.43	24	46.6	28	

Table 1: Demographic data of the two groups of study subjects

Clinical parameters	**MMT (Mean ± S. D)**	**TaU (Mean ± S. D)**	**p-value**
Onset age (years)	25.95±7.97	28.53±8.43	0.22
Illness duration (years)	10.57±10.53	4.81±4.47	0.005
Untreated illness duration (years)	9.11±9.83	4.63±4.42	0.02
Therapy duration for MMT/TaU (months)	2.83±1.93	2.06±1.47	0.08

Table 2: Comparison of the clinical parameters in the two study groups

Psychosocial functioning	**MMT**		**TaU**		**p-value**
	Percentage (%)	**Number (n=74)**	**Percentage (%)**	**Number (n=60)**	
SOFAS score					
61-70	13.51	10	43.3	26	0.02
71-80	45.94	34	33.3	20	
81-90	40.54	30	20	12	
Mean ± S. D	78.93±8.03		73.31±6.75		0.003
WHO QoL-BREF					
Physical health	70.06±12.05		49.99±20.06		<0.0001
Psychological health	72.66±12.67		56.72±20.76		0.0003
Social relations	65.17±20.19		48.09±23.58		0.003
Environment	74.36±12.87		58.39±14.65		<0.001
CSQ-8 score	21.45±1.45		20.58±1.54		0.01
WHO assist score	21.66±10.76		26.08±9.31		0.09

Table 3: Psychosocial functioning in the two groups of study subjects