



Studying the Prevalence of Dissociative Experiences Among Methadone Maintenance Treatment Patients at Different Dosages and its Effect on Addiction Severity Index Subscales

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Received 2018 June 05; Revised 2018 December 27; Accepted 2019 January 24.

Abstract

Background: In “chemical dissociation” hypothesis, it is suggested that substance use disorder patients may not feel a high level of dissociation because as a consequence of substance use, they may experience some level of dissociative-like states. There are less and albeit contradictory reports of prevalence of dissociative experiences among patients with substance use disorder.

Objectives: The aim of this study was to determine the prevalence of dissociative experiences among patients referred to Addiction Treatment Clinic of Baharan Hospital.

Methods: In this descriptive cross-sectional study, 231 patients, referred to MMT Clinic of Baharan Psychiatric Hospital in Zahedan, were studied. Sampling was convenient and patients were divided to two groups, including those receiving less than 60 mg of methadone per day (group A) and those receiving equal or more than 60 mg of methadone per day (group B). Dissociative experiences scale (DES) and addiction severity index (ASI) were completed. Finally, data were analyzed using SPSS version 19 and independent samples *t*-test.

Results: A total of 231 patients participated in this study. Mean age of patients was 33.9 ± 8.0 ($P = 0.053$). They included 204 males (88.3%) and 27 females (11.7%) ($P = 0.328$). Total mean DES scores were 15.3 ± 11.7 . Mean DES scores was 15.6 ± 11.2 in group A and 16.1 ± 11.7 in group B ($t(1) = -0.1, P = 0.827$). Addiction severity index was 0.74 ± 1.69 in patients with DES scores more than 30 and 0.43 ± 1.51 in patients with DES scores less than 30 ($t(1) = 1.1, P \text{ value} = 0.204$).

Conclusions: Based on the current study, it can be concluded that different doses of methadone induce the same chemical dissociation and this has no significant effect on different areas of ASI.

Keywords: Dissociative Experiences, Methadone, Dissociative Experiences Scale, Addiction Severity Index

1. Background

Substance use disorder is a major public health problem. A number of cognitive, behavioral, and physiological symptoms show that patients keep misusing substances while they experience side effects, which is a fundamental part of substance use disorder (1, 2).

Today, substance use disorder has turned to a complicated global problem, particularly in third world countries. Iran is one of the greatest victims of substance abuse due to its geographical location as well as its historical and social background. Despite enormous financial and human resource expenses on drug trafficking over the past two decades, attempts have failed to fulfill people's expectations, as most of the fight was against supply rather than

demand (3).

The DSM-5 explains dissociation as “a disruption of and/or discontinuity in the normal integration of consciousness, memory, identity, emotion, perception, body representation, motor control, and behavior”. Dissociation symptoms can potentially disrupt every area of psychological functioning (1).

A dissociative experience is a defense mechanism in crises and/or coping with stress (4, 5). During a traumatic experience, dissociation enables a person to see the event as an observer, stop feelings of pain or distress, and protects against awareness of the full impact of what has occurred (6).

Dissociative experiences are more prevalent among

specific populations, such as patients with substance use disorder and criminal offenders. It has been said that trauma in the early years is a risk factor for dissociation and substance use disorder yet, there is no clear report about the association between substance use disorder and dissociation. Chemical dissociation hypothesis may explain this inconsistency. In this hypothesis, some patients with substance use disorder experience dissociative-like states because of chemical consumption thus they may not show high levels of dissociation (7). This means that some affected individuals with opioid use disorder are encouraged to chemically induce a dissociative state to oppose the memories of childhood abuse and related pain experiences, and take care of themselves. There is a positive correlation between severity of substance use disorder and severity of childhood abuse. In addition, recovering opioid use disorder patients report higher levels of traumatization compared to outpatients with non-opioid use disorders. Somer et al. claimed that opioid use disorder might be a coping strategy to deal with unfavorable experiences and memories, especially when psychologic coping does not work and the traumatized individual is desperate to find a rapid and effective relief in posttraumatic pain, and when substances are available. When psychologic dissociation is ineffective, traumatized individuals obtain access to consciousness altering substances with rapid chemical dissociation effects and their immediate impact on the mind and body; they may prefer not to rely on their own mental resources for relief. At this stage, the traumatized individual may choose chemical dissociation as a self-medicating alternative. Chemical dissociation can be used as a protection against painful memories and experiences as long as the addicted patient misuses drugs or is on methadone maintenance treatment as a replacement for illegal drugs (2). Methadone is a synthetic substance filling heroin and other opiates' brain receptor sites, and during the treatment period, patients consumptions are monitored and the illicit drugs are avoided (2, 8). It seems that methadone is the most effective researched substance for the treatment of opiate-dependent patients (9).

Although the least effective dose of methadone is 60 mg per day, it seems that a dose of 40 to 50 mg per day and even lower has satisfactory results as well. Increasing the dose of methadone (especially equal and more than 60 mg per day) in patients with substance use disorder may improve long-term outcome, yet it may increase side effects, such as long QT syndrome, cardiac conducting disorders, infertility, osteoporosis, and chronic gastroenterology (constipation) (8).

Although data on the association between substance use disorder and dissociation are not defiantly demonstrative, there are indications that the two phenomena are related (2).

2. Objectives

No study has measured dissociative experience of patients receiving different doses of methadone (< 60 mg per day and \geq 60 mg per day) and the effects of these experiences on Addiction Severity Index subscales. As a result the current study was conducted to investigate the prevalence of dissociative disorders among patients with substance use disorder referred to the Addiction Treatment Clinic of Baharan Hospital.

3. Methods

This descriptive cross-sectional study was conducted on patients referred to MMT Clinic of Baharan Psychiatric Hospital in 2015. Based on Cochran's sample size formula, 231 patients were selected. Sampling was convenient.

Individuals younger than 18 and older than 50 years, having a history of physical illness, psychosis or mania, homeless people, those cancelling the treatment during study, imprisoned or detainees' imminent people, and those with serious medical conditions were excluded.

Patients were compared in two groups of less than 60 mg of methadone (group A) and those, who received equal or more than 60 mg of methadone per day (group B). The prevalence of dissociative experiences was investigated in all subjects. Dissociative experiences scale (DES) was used for assessing the dissociative experiences of patients. The DES was developed in 1986 by Bernstein and Putnam. This scale has been published and used in 400 studies and different societies. More than 35 studies have evaluated this scale (10).

This questionnaire consists of 28 questions and must be completed by patients. Item scores range from 0 (never) to 100 percent (always). This questionnaire has three factor structures, including amnesic dissociation, experiences of depersonalization, de-realization, and absorption and imaginative involvement (11). The total score for the whole scale is achieved by calculating the average score for all items, by adding all item scores and dividing the total by 28; the cut-off point was 30 (12). The internal consistency of DES among items was high at $\alpha = 0.70$; test-retest reliability is good at $r = 0.84$ (Bernstein and Putnam, 1986) and coefficient alpha for the current sample was 0.94 (13). In Sajadi et al.'s study, Cronbach's α was 0.92 (14).

The addiction severity of patients was also evaluated using the addiction severity index (ASI). The ASI is a semi-structured interview and can be conducted for individuals trained by clinicians and researchers. The ASI investigates seven aspects of a patient's life, including medical, employment/support, drug and alcohol use, legal, family/social, and psychiatric. The ASI obtains lifetime information about problem behaviors as well as problems within the past 30 days.

The ASI-Lite contains 22 less questions than the ASI, and omits items relating to severity ratings and a family history grid. Predictive validity was around 0.76 to 0.91 and sensitivity and specificity was 0.85 and 0.8, respectively. The reliability of the test was 0.91. Internal consistency with Cronbach's α was 0.65 to 0.89 (15-18).

Informed consents were signed by all participants. All patients, who referred to MMT Clinic of Baharan Psychiatric Hospital during the study period, were asked to express their conscious satisfaction after providing necessary explanations about the method of implementation and objective of the project as well as completing the DES-predefined survey patiently and accurately. According to the answers to DES, the prevalence of their dissociative experiences was studied. The relationship between addiction severity and dissociative disorders of patients were also examined. Finally, results of all surveys were analyzed by SPSS version 19 and independent samples *t*-test.

4. Results

A total of 231 patients participated in this study. The mean age of patients was around 33.9 ± 8.0 . Two hundred and four (88.3%) patients were male and 27 were female. A χ^2 test showed no differences between the two groups according to gender (females were 11.3% and 12%, respectively). The mean age of patients in each group of A and B was 33.1 ± 8.6 and 34.3 ± 7.8 , respectively ($t(1) = -0.93$, $P = 0.455$). Mean DES score was 15.6 ± 11.2 in group (A) and 16.1 ± 11.7 in group (B) ($t(1) = -0.1$, $P = 0.827$) (Table 1).

Table 1. Mean Age and DES in Each Group

	A	B	t	P Value
Age	33.1 ± 8.6	34.3 ± 7.8	-0.93	0.455
DES scores	15.6 ± 11.2	16.1 ± 11.7	-0.1	0.827

Fifty patients in group A (13%) and 14 patients in group B (12.1%) had DES scores more than 30 (Table 2).

The ASI was 0.74 ± 1.69 in patients with DES scores more than 30 and 0.43 ± 1.51 in patients with DES scores less

Table 2. DES Cut-Off Point in Each Group^a

Methadone	DES More Than 30	DES Less Than 30	Total
Group A	15 (13)	100 (87)	115 (100)
Group B	14 (12.1)	102 (87.9)	116 (100)
Total	29 (12.6)	202 (87.4)	231 (100)

^a Values are expressed as No. (%).

than 30 ($t(1) = 1.1$, P value = 0.204); therefore, general index and its areas were not statistically significant among both groups (Table 3).

5. Discussion

In Somer et al.'s study, the detoxified and the MMT patients were compared, which demonstrated that the prevalence of dissociative disorders were higher in detoxified group around three times. Trauma history or addiction severity were similar between the two groups as a result of the higher incidence of dissociative disorder among detoxified patients and may be related to the nature of the two treatment methods. This theory is in agreement with chemical dissociation. Chemical dissociation can be used as a protection against painful memories and experiences as long as the addicted patient misuses drugs or is on methadone maintenance treatment as a replacement for illegal drugs (2). However, the recovered opioid use disorder patients may feel pain, distress, and unfavorable emotions, which may force them to seek an alternative psychologic coping mechanism because they lost the protective blunting cover made by the drug (19, 20). Although pathologic dissociation is destructive in many ways, it can be offered as a powerful mechanism to suppress traumatic experiences and memories (21).

In the current study, the prevalence of dissociative disorders among patients treated by different doses of MMT showed no significant difference. Also, ASI was the same in patients with and without dissociative disorders.

Considering a cut-off point of 30 on the DES, 15.3% of the participants had dissociative disorders. This rate was lower than Tamar-Gurof et al. (24.3%) and higher than Tutkun et al. (10.2%) and Ghafarinezhad et al. (9.9%) (22-24).

Kianpoor et al. calculated the mean DES scores of prisoners as 45.8% and indicated that 74% of their study subjects scored higher than 30. However, imprisonment may justify these high rates (25). In general, it seems that the rate of dissociative disorders is higher among individuals with history of addiction in Iran than in other countries

Table 3. Comparing the Areas of Addiction Severity in Patients Based on DES

N	DES Scores	Mean \pm SD	t	P Value
Medical				
29	More than 30	0.87 \pm 1.25	-0.35	0.805
202	Less than 30	0.94 \pm 0.99		
Drug use				
29	More than 30	2.47 \pm 0.91	2.4	0.107
202	Less than 30	2.11 \pm 0.75		
Legal				
29	More than 30	0.87 \pm 1.19	2.21	0.180
202	Less than 30	0.56 \pm 0.71		
Employment				
29	More than 30	1.40 \pm 0.74	-0.23	0.891
202	Less than 30	1.43 \pm 0.63		
Family-social functioning				
29	More than 30	2.67 \pm 1.05	2.43	0.111
202	Less than 30	2.32 \pm 0.69		
Psychological status				
29	More than 30	1.87 \pm 1.05	0.42	0.613
202	Less than 30	1.71 \pm 0.98		
Mean ASI				
29	More than 30	1.69 \pm 0.74	1.1	0.204
202	Less than 30	1.51 \pm 0.43		

(24). Nevertheless, further studies should be done to examine this hypothesis. On the other hand, some researchers including Schafer et al. refused to accept the relationship between dissociative disorders and drug abuse (26).

According to Ghafarinezhad et al.'s study in 2013, who studied patients treated with methadone and healthy non-addicted people as the control group, it was indicated that the prevalence of dissociative disorders was significantly higher in the case group than the healthy group (24).

In another study by Karadag et al. in 2005, conducted on 215 patients with substance use disorder, who were included voluntarily in the study, it was concluded that according to DES, 36.7% of subjects were affected by dissociative disorders. Prevalence of such disorders was higher among young people than elderly and patients with this disorder had greater willingness to use a number of drugs simultaneously. According to secondary results of this study, it could be mentioned that suicide, illicit sex, and child abuse is significantly higher in the group with dissociative disorders than the other group (27).

In the mentioned studies, dissociative disorders were

investigated between the two groups of addicted and non-addicted patients, which were significantly different. In the current study both studied groups consisted of addicted patients, who used methadone with different doses and in spite of higher prevalence of dissociative disorders in patients, who received an equal or more than 60 mg methadone per day compared to those, who received less than 60 mg per day, there was no statistically significant difference between the two groups. Also, addiction severity index (ASI) had no correlation with dissociative disorders.

5.1. Conclusions

Based on the current study, it can be concluded that different doses of methadone induces the same chemical dissociation, and this has no significant effect on different areas of ASI. According to the higher incidence of side effects with equal or more than 60 mg methadone per day, the sensible reason to increase the dose of methadone may be the patient's unwillingness to take the drug and to keep the patient at the MMT. Despite studies done in this area,

further studies are required to be conducted to obtain definite results.

This study had several limitations. The first was the use of convenience sampling. Another one was that the data gathered was self-reported. Furthermore, this study was cross sectional and the sample was relatively small.

Footnotes

Conflict of Interests: It is not declared by the author.

Ethical Approval: It is not declared by the author.

Funding/Support: It is not declared by the author.

Patient Consent: Informed consents were signed by all participants.

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