

Comparing the Efficacy of Methadone and Buprenorphine on Public Health of Addicts under Maintenance Treatment in Isfahan City

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ABSTRACT

Objective: The purpose of this study was to compare the efficacy of methadone and buprenorphine maintenance therapy was addicted to public health. **Methodology:** Study is quasi-experimental with pre-test and post-test two groups. The population of the city in the 2014 study was drug addicts. Sample survey of 36 people who were addicted to the drug rehabilitation center in four of the five was referred. Methadone or buprenorphine were treated with the doctor. The instruments used in the questionnaire of 28 questions (GHQ28), respectively. It completed at the beginning of the pre-test. After three months of treatment, the two groups were assessed. The reliability of the questionnaire was 0.97. In order to perform data analysis and multivariate analysis of variance (MANOVA) and covariance was used. **Results:** The results showed that there was no significant difference between the effectiveness of methadone and buprenorphine. **Conclusion:** In other words, the effect of the drug is on the same drug ($P \geq 0.05$). The duration of treatment had significant effects on general health ($P \leq 0.01$).

1. Introduction

Addiction is a chronic, relapsing disorder is a severe form of treatment for drug dependence is defined. Recurrences are common problems seen in addiction treatment (Marlatt, 1985). The pharmaceutical composition of opioid maintenance treatment (methadone and buprenorphine) as one of the most common treatments used to reduce the harm caused by drugs. In 28 European countries at least 530,000 heroin dependent patients treated with opioid agonists. Approximately 80% of patients receiving methadone maintenance treatment (MMT) and 20 per cent of the buprenorphine maintenance treatment (BMT) are (Joseph et al., 2000; Dwivedi & Pandey, 2013). United States of America with over 150,000 drug-dependent patients are treated with methadone. (Mattick et al., 2009). Methadone is synthetic opioid agonist of the mu (μ) is used in maintenance treatment for opioid-dependent patients. The long half-life of the drug, with an average of 24 to 72 hours, with respect to consumption and metabolism of individuals, is likely to continue. Monitored on a daily basis is in the form of syrup or tablet taken orally once. After taking induce euphoria, analgesia and other morphine-like effects of the drug. The key is in line with the goals of reducing the damage done and allowing the use of illegal drugs is severely reduced. The regular use and long-term methadone and drug help prevent recurrence. Drug treatment of mental and physical, and social performance is improved patient and the possibility of his return to the community and further work (Beyrami et al., 2014). The effectiveness of methadone maintenance treatment in opiate dependent individuals in research Moqtadaee et al (2013), Abidi zadegan et al (2008) has been approved. However, research on the effectiveness of buprenorphine is less. Sohrabi et al (2010) the effect of methadone treatment on quality of life was assessed opiate addicts. Indicate that methadone maintenance therapy may be effective in improving the quality of life of patients. Health and increase their social competence. Most researches and studies show the effectiveness of methadone and buprenorphine in opiate addicts' health.

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2. Materials and methods

2.1. Research History

The use of methadone in terms of physical symptoms of drug enhances physical health, improved energy, power, mobility and reduces pain (Giacomuzzi et al., 2003). Best et al (2000), the number of 11,000 addicts who were referred to leave in three ways MMT, hospitalization for detoxification and outpatient treatment were investigated with the help of medication and counseling. The most successful method of MMT in reducing heroin use was reported. Also, after six months of methadone addicts are significantly increased levels of public health. And the improvement in the areas of leisure is financial status, married, physical health, and satisfaction with their overall well-visible (Giacomuzzi et al., 2003).

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Kharadmand et al., (2010), who studied the physical effects of methadone client's perspective, the study was conducted on 32 sources in Kerman. The results showed MMT on public health, sleep, appetite, weight, libido, and apparently has been effective. The 6 categories of experience and physical effects of MMT showed. Also referring to the view of the experiences and emotions of the role, but in general MMT clients have positive effects on the physical. The average survival in maintenance therapy in the treatment of addicts and methadone roughly 95% of 71 to 90 weeks and 80 weeks respectively, the duration of survival to age, type of material used and the method of direct use of genotypic (Hosseini Kesnavieh, 2008). Methadone treatment can reduce risk behaviors are also affected. Methadone risk behaviors (sharing of contaminated needles, criminal activities and prostitution to finance a drug) is minimized, the euphoria brought them down, their appearance and ordered them to give that instead of criminal activities and prostitution to help businesses move (Teiri, 2008).

To respond to the main research hypotheses, the following hypotheses will be studied:

- There is a significant difference between the effectiveness of methadone and buprenorphine maintenance treatment of addicts on public health component of the Isfahan city.
- There is a significant difference between the duration of maintenance therapy, addiction and public health component in Isfahan city in the pre-test and post-test.

2.2. Research methodology

2.2.1. statistical population, sample and sampling

This research is a quasi-experimental pre-test and post-test to compare the two groups. The population of the study drug maintenance therapy in addiction treatment centers in the city was in 2014. The first of five randomly selected. Then four refugee centers, Ariana, growth, Sama, who had refused to cooperate were selected. Research beginning from March to the Persian date Khordad 2014. Includes a person addicted to maintenance therapy with one of the four centers in the city were referred. After examination and diagnosis addiction specialist or buprenorphine maintenance treatment of methadone and were done. Of the 36 patients of the sample group ($n = 18$ methadone maintenance treatment, buprenorphine maintenance treatment = 18) were selected. The initial interview and motivational interviewing was conducted with participants. After the General Health Questionnaire (GHQ28) and Goldberg (1972) is as pre-test questionnaires. Questions and Answers notes were questionnaires were read. Then were treated during the process and the subjects were prescribed the drug for three months. After three months from July to September, the General Health Questionnaire (GHQ28) and Goldberg (1972) as the post answered. Pre-test and post-test data obtained through descriptive statistics mean, standard deviation, frequency, inferential statistics and multivariate analysis of variance (MANOVA), analysis of covariance (ANCOA) and was dependent T-test analysis. Data analysis was performed using the software Spss20.

2.2.2. General Health Questionnaire (GHQ28)

General Health Questionnaire 28 items by Goldberg & Hiller (1979) and has 4 physical symptoms scale (how people feel about the state of health), scale of anxiety and sleep disorders (reviewed anxiety, tension, insomnia people), Social Functioning Scale (ability to cope with the demands of professional and daily life), depression scale (check the status of mood and suicidal tendencies) measures. The questionnaire consists of 28 items 1 to 7 on the scale of physical symptoms. All questions are multiple choices and were scored from zero to three. Each subscale scores range from zero to 21 and total scores range from zero to 84 scales. At every scale from grade 6 and above the sum of the scores above 22 indicate signs of disease. So, the lower the score is more general health (Attorney, 1998). Three-retest reliability coefficient public health students split half and Cronbach's alpha, respectively 0.70, 0.96 and 0.90 have been reported (Naqvi, 2001). In this study, the Cronbach's alpha reliability coefficient was calculated 0.97.

Table 1. Average age segregated group

Age	methadone group		Bopronorfin group		Total	
	Number	Percent	Number	Percent	Number	Percent

Between 20-25 years	3	16.7	3	16.7	6	16.7
Between 26-30 years	4	22.2	8	44.4	12	33.3
Between 31- 35 years	2	11.1	3	16.7	5	13.9
Between 36-40 years	2	11.1	1	5.6	3	8.3
Between 41- 45 years	2	11.1	0	0	2	5.6
Between 46 -50 years	3	16.7	2	11.1	5	13.9
Between 51 -55 years and more	2	11.1	1	5.6	3	8.3
Total	18	100.0	18	100.0	36	100.0

Table 2. Used Materials segregated group

Group Materials	methadone group		Bopronorfin group		Total	
	Number	Percent	Number	Percent	Number	Percent
Opium	2	11.1	4	22.2	6	16.7
Juice	0	0	2	11.1	2	5.6
Heroin	7	38.9	0	0	7	19.4
Opium and Juice	6	33.3	11	61.1	17	47.2
Opium and Heroin	1	5.6	1	5.6	2	5.6
Heroin and creak	2	11.1	0	0	2	5.6
Total	18	100.0	18	100.0	36	100.0

3. Results and Discussion

3.1. Descriptive Results

Table 3 Mean and standard deviation component of public health in the pre-test and post-test in both groups treated with methadone and buprenorphine are shown. The results in Figure 1 - is shown Comparison of mean pre-test and post-test scores of public health groups methadone and buprenorphine

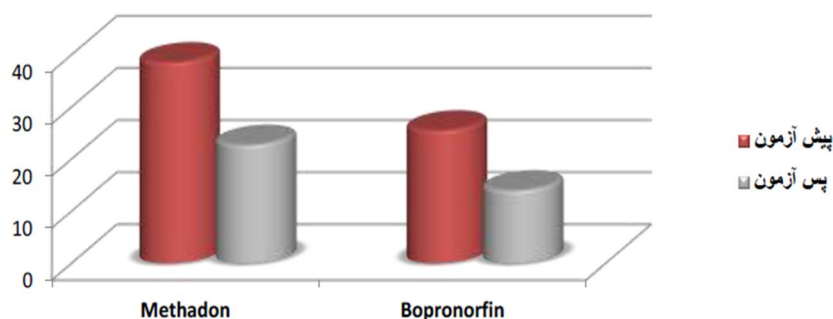


Figure 1. Comparison of mean pre-test and post-test scores of public health groups methadone and buprenorphine

Table 3: Median and Std. Deviation scores of general health in step pre and post test

Variable	group	pretest			post test	
		Number	Median	Std. Deviation	Median	Std. Deviation
Somatic symptoms	methadone	18	11.00	5.68	6.33	4.79
	Bopronorfin	18	7.28	4.21	3.67	2.54
anxiety and sleep disorder	methadone	18	9.17	5.79	5.39	4.25
	Bopronorfin	18	6.39	4.91	2.83	2.89
Social Faction	methadone	18	10.17	4.29	7.06	4.70
	Bopronorfin	18	7.61	3.380	5.56	2.87
depression symptoms	methadone	18	8.17	7.16	3.89	3.91
	Bopronorfin	18	4.17	5.04	1.89	3.25
Total General health	methadone	18	38.50	20.32	22.67	14.89

	Bopronorfin	18	25.44	14.94	13.94	9.39
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Table 4: Median and Std. Deviation, Minimum, Maximum scores of general health segregated Used time.

Variable		Number	Median	Std. Deviation	Minimum	Maximum
0-5 years	pretest	5	13.20	5.89	7.00	20.00
	post test	5	7.20	3.70	2.00	11.00
6-10 years	pretest	14	32.36	21.54	7.00	73.00
	post test	14	21.14	14.54	3.00	44.00
11-15 years	pretest	8	33.38	16.69	15.00	58.00
	post test	8	17.87	12.08	9.00	42.00
16-20 years	pretest	7	39.86	17.17	23.00	73.00
	post test	7	20.57	14.12	8.00	51.00
30-35 years	pretest	2	43.00	4.24	40.00	46.00
	post test	2	20.00	12.73	11.00	29.00

Table 4: The mean, standard deviation, minimum and maximum scores for general health component of the pre-test and post-test according to the average duration is shown. As seen by the person who is for consumer products. The general health of the person affected. So, the larger the average duration of the disorder increases in public health. Refer to the table suggests that, compared with between 5 and 35 years of use, the average public health problems more than tripled.

3.2. Inferential results

Hypothesis 1: The effectiveness of methadone and buprenorphine maintenance treatment of addicts on public health component of the city there is a significant difference

Table 5: Results of covariance effect of group membership on the public health component scores in the control group pretest.

Variable	Source	Sum of Squares	df	Mean Square	F	Sig. (p)	Eta Squared	Observed Power
Somatic symptoms	Pretest	204.342	1	204.342	22.808	.000	.409	.996
	group	5.554	1	5.554	.620	.437	.018	.119
	Error	295.658	33	8.959				
anxiety and sleep disorder	Pretest	178.512	1	178.512	21.797	.000	.398	.995
	group	15.756	1	15.756	1.924	.175	.055	.270
	Error	270.265	33	8.190				
Social Faction	Pretest	200.450	1	200.450	21.004	.000	.389	.994
	group	.093	1	.093	.010	.922	.000	.051
	Error	314.938	33	9.544				
depression symptoms	Pretest	242.110	1	242.110	40.465	.000	.551	1.000
	group	.616	1	.616	.103	.750	.003	.061

As observed in Table 5, covariance analysis of the overall hypothesis of the study showed that after removing the effect of synchronization variables on the dependent variable The F ratio was calculated according to the posttest ($F = 0.446$ and $P = 0.509$) in the adjusted mean scores for general health of participants in both groups there was no significant difference between methadone and buprenorphine. The hypothesis of the efficacy of buprenorphine and methadone maintenance therapy drug on public health component of the city there is a significant difference was not confirmed. Methadone and buprenorphine in terms of public health and addiction are leaving the same effect.

Hypothesis 2: the duration of maintenance therapy, addiction and public health component city in the pre-test and post-test, there is a significant difference.

Table 6: Results of MANOVA on the components of the study period, the mean posttest control group pretest

Test name	Value	Hypothesis DF	Error DF	F	Sig. (p)	Partial Eta Squared	Observed Power
Pillai's Trace	2.289	64.000	60.000	1.254	.189	.572	.954
Wilks' Lambda	.023	64.000	49.254	1.247	.211	.610	.918

Hoteling's Trace	7.606	64.000	42.000	1.248	.224	.655	.904
Roy's Largest Root	4.605	16.000	15.000	4.318c	.004	.822	.981

As can be seen in Table 6, the control test was significant only at Roy's largest root test. To indicate that the difference between groups in terms of duration of at least one of the variables (components of public health) there is a significant difference ($P=0.004$, $F=4.318$) the effect or difference equals is 0.822. I.e 0.822% of individual differences in general health component scores of the time are consumed. Statistical power is equal to 981, the possibility of a Type II error is 0.019. The difference in scale physical symptoms is social functioning and depression disorders. In other words, depending on how long the person has done drugs, in rates of physical symptoms, social functioning and depression had an impact.

4. Conclusion

The study aimed to compare the effectiveness of methadone and buprenorphine maintenance treatment of addicts on public health component of Isfahan. The results of the analysis showed that the efficacy of methadone and buprenorphine maintenance treatment of drug addiction on the public health component of significant differences was found. The hypothesis was not confirmed ($P \geq 0.05$). In other words, both drug-treated patients had a similar effect. The research findings Afshari & Yavari Bar Hagh (2014), Hamzeh Louian (2008) are consistent. Afshari & Yavari Bar Hagh (2014), cognitive disorders in patients treated with methadone and buprenorphine were compared with control group. Cognitive disorders including mental disorders are the number one concern of memory, implies perception, learning, and problem solving. The results showed that the efficacy of buprenorphine and methadone maintenance treatment has been effective in identifying patients alike. And no significant differences were found. But both control groups were significantly different. Also, Hamzeh Louian (2008) to evaluate symptoms of depression and anxiety before and after treatment with methadone and buprenorphine showed symptoms of anxiety and depression over time in both treatment groups was significantly reduced. And the difference between the two treatment groups was found to reduce symptoms. The first hypothesis of this study, the results of the analysis showed that the efficacy of methadone and buprenorphine maintenance treatment of drug addiction on the public health component of significant differences was found. The hypothesis was not confirmed ($P \geq 0.05$). In other words, both drug-treated patients had a similar effect. The research findings Afshari & Yavari Bar Hagh (2014), Hamzeh Louian (2008) are consistent. The second hypothesis of the study, the pre-test and post-test scores of public health component in both treatment groups, compared to methadone and buprenorphine. Thus, the hypothesis ($P \leq 0.01$) was confirmed. The second hypothesis of this study examines the relationship between public health and addiction duration of maintenance therapy in the pre-test and post-test study of the city. The results of the analysis showed that the duration of maintenance therapy, addiction and public health there are significant differences in Isfahan. Thus, the hypothesis ($P \leq 0.01$) was confirmed. In other words, how much time is spent material impact on the general health of the individual. The more a person consumes more time and mood disorders, anxiety, depression, experiencing more physical complications. The results of research Dastjerdi et al (2010) are consistent. Dastjerdi et al., (2010), there is a relationship between duration of use and risky behavior. The highest rates of risky behaviors in all sorts of people were seen between 10-6 years past their addiction.

The second research hypothesis examines the relationship between public health and addiction duration of maintenance therapy in the pre-test and post-test study of the city. Thus, the hypothesis ($P \leq 0.01$) was confirmed. In other words, how much time is spent material impact on the general health of the individual. The more a person consumes more time and mood disorders, anxiety, depression, experiencing more physical complications. The results of research Dastjerdi et al (2010) are consistent.

Lack of follow-up results are not homogeneous groups, small sample size limits number study. Recommended to researchers and scholars repeat the study with a larger number and also in terms of duration, the test track used to be a homogeneous material. Also with regard to the efficacy of buprenorphine and methadone maintenance treatment centers addiction treatment is recommended and encouraged.

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