Original Article

The Effect of Group Motivational Interview on Impulsivity among Drug Users under Methadone Treatment

Hamideh Zare Mangabady¹, Sadrellah Khosravi², Ali Jafari Nodoushan³, Abolfazl Azadnia⁴, Reza Jafari Nodoushan⁵

¹. M.Sc. in Guidance and consulting, Shahid Sadoughi University of Medical Sciences, Yazd, Iran
². Assistant Professor of Psychology (Department of Psychology), Islamic Azad University of Firooz Abad
³. PhD student in educational psychology, International Imam Reza University, Mashhad, Iran.
⁴. M.Sc. in General Psychology, Shahid Sadoughi University of Medical Sciences, Yazd, Iran
⁵. Department of Occupational Health, Shahid Beheshti University of Medical Sciences, Tehran, Iran

Received: 10/12/2013 Accepted: 2/25/2014

Abstract

Introduction: Motivational interviewing techniques can be used to manipulate and boost patients' good behavior in order to achieve better health behavior changes.

Materials and Methods: This quasi-experimental research, compares pre-test and post-test by a control group. The statistics obtained from the population include all individuals associated with drug addiction treatment centers in the city of Yazd, using purposive sampling methods. Therefore, 40 patients in methadone treatment were randomly assigned to two experimental and control groups, and then, Barratt Impulsiveness Scale was used. Six 90-minute sessions of motivational interviewing program were administered to the experimental group. At the end of the training period, both groups were assessed again. Data were analyzed using SPSS statistical software.

Results: T-test results showed that impulsivity of the experimental and control groups have a significant difference.

Conclusion: It concluded that group motivational interviewing on drug addiction reduction and impulsivity is highly effective on drug-dependent individuals.

Keywords: motivational interviewing, impulsivity, methadone treatment

* Corresponding author: Tel: +98-351-6240691, Email: jafarinodoushan@gmail.com
Introduction

Drug addiction is one of the most unfortunate social damages. Numerous studies indicate that most of the patients with substance abuse are often infected simultaneously by multiple physical illnesses and are more likely confronted to death \[16\].

The addiction is named as drug dependence by American Psychiatrists Association \[1\]. The addiction is a complicated disease, which is specified with features such as uncontrollable temptation and continuous consumption \[13\]. This disease begins with an intake of a substance and over time changes the behavioral, psychological, social and physiological functions \[21\].

Conducted studies on addiction reveal that one of the main factors in substance abuse is the impulsivity, which is accounted as a predisposing and continuing factor of drug consumption \[8\].

Impulsive behaviors include an extensive range of actions, to which less consideration has been given \[17\]. It seems that drug abuse relapse occurs by severe and uncontrolled cravings and poor impulse control (West, 2006).

Specialists have utilized various methods to treat the addiction. One of the methods of non-pharmacological intervention is motivational interviewing \[4, 11\]. The motivational interviewing has been formed to work with alcohol consumers, and it not only avoids being restricted in this area, but also is generalized to different health domains \[15, 3\]. Preliminary investigations indicate that motivational interviewing can have successful effects on the addiction to substances such as heroin \[2\], cocaine, and marijuana \[15\].

Several meta-analyses indicate the application of motivational interviewing in different areas including smoking, alcohol, and drug abuse \[4, 11\]. Certain areas like health care are also examined systematically by motivational interviewing \[24\].

Leech, Richardson and Goldschmidt \[14\] revealed that drug abuse during pregnancy is directly related to the impulsivity trait in children aged 6.

Miller and et al \[15\] in a study conducted on the effects of impulsivity on cocaine consumption came to the conclusion that there is a bilateral relationship (interactive) between impulsivity and drug abuse. Results of a research conducted by Dom, Hulstijn and Sabb \[6\] demonstrated that the impulsivity in alcohol consumers is more severe in younger people.

The studies also show that constant usage of psychoactive substances creates apparent defects in administrative control functions \[23\]. In ecstasy consumers, behavioral impulsivity also increases and causes an impaired decision making \[5\]. We propose two hypotheses based on the aforementioned literature.

First hypothesis: The motivational interviewing is effective on the impulsivity
reduction in addicts under methadone treatment.

Second hypothesis: The motivational interviewing is effective on reducing the dimensions of impulsivity in the addicts under methadone treatment.

**Materials and Methods**

This is a semi-experimental study using pre-test and post-test control group. (Pre-test and post-test control group and random assigned format)

**The population’s statistics**

The study sample included all drug-dependent people who referred to the an addiction treatment center in Yazd in June and July 2013.

**Sample and sampling**

First a list of all addiction centers was prepared from medical university of Yazd and one of these centers has been chosen randomly. From 80 individuals, the impulsive Baratt test was taken and 40 of them with highest score randomly were divided in two groups of 20 people as test and control groups.

**Research Tools**

To collect the data of this research, Baratt Impulsivity Scale was used.

**Scale observation’s Baratt**

Barratt impulsivity scale is one of the most widely used instruments to measure impulsivity construct. Ekhtiari [9] reported a factor of 0.90 to 0.70 for the reliability of this instrument. The reliability of the findings reported by Britt et al. [3], is about 0.81 in the English version. Ekhtiar [9] has shown that the Cronbach's alpha coefficient for addicts and healthy subjects is 0.84 and 0.83, respectively.

**A group motivational interviewing technique**

A total of 6 meetings including two sessions of measurements and running questionnaire and 4- intervention session were conducted. Motivational interviewing was performed according to Miller and Rowlink [15] were performed.

**Results**

First hypothesis: Motivational interviewing for addicts on methadone treatment is effective in reducing impulsivity

<table>
<thead>
<tr>
<th>Group</th>
<th>Average</th>
<th>Standard deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experimental</td>
<td>10.05</td>
<td>2.20</td>
</tr>
<tr>
<td>Control</td>
<td>12.90</td>
<td>0.57</td>
</tr>
</tbody>
</table>
Hamideh Zare Mangabady and others

Table 1 shows the results of impulsivity scores between control and experimental groups. As it can be seen in Table 1, the average score of the experimental group (10/5) is significantly lower than the control group (12/90). In other words, the difference between the two groups (experimental and control) is statistically significant (p <0/05)

Second hypothesis: the motivational interviewing is effective in reducing impulsivity dimensions (cognitive impulsivity, motor and improvident) addicts’ methadone treatment. (Test covariance - was used for this purpose) that explained in the tables of below

<table>
<thead>
<tr>
<th>Source of charge</th>
<th>Addition square</th>
<th>Degree of freedom</th>
<th>Mean square</th>
<th>Amount F</th>
<th>Significant amount</th>
<th>Eta coefficient</th>
<th>Statistic power</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pretest</td>
<td>81.18</td>
<td>1</td>
<td>81.18</td>
<td>20.79</td>
<td>0.001</td>
<td>0.36</td>
<td>0.99</td>
</tr>
<tr>
<td>Group</td>
<td>221.99</td>
<td>1</td>
<td>221.99</td>
<td>56.87</td>
<td>0.001</td>
<td>0.60</td>
<td>1</td>
</tr>
<tr>
<td>Error</td>
<td>144.41</td>
<td>37</td>
<td>3.90</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Total</td>
<td>35266</td>
<td>40</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Table 2 shows the mean scores for cognitive impulsivity, there are significant differences between the two groups (P<0/001). So, we can conclude that a change in motivational interviewing will cause changes in cognitive impulsivity.

<table>
<thead>
<tr>
<th>Source of charge</th>
<th>Addition square</th>
<th>Degree of freedom</th>
<th>Mean square</th>
<th>F</th>
<th>P-Value</th>
<th>Eta coefficient</th>
<th>Statistic power</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pretest</td>
<td>24.79</td>
<td>1</td>
<td>24.79</td>
<td>5.64</td>
<td>0.001</td>
<td>0.13</td>
<td>0.661</td>
</tr>
<tr>
<td>Group</td>
<td>142.75</td>
<td>1</td>
<td>142.75</td>
<td>34.45</td>
<td>0.001</td>
<td>0.48</td>
<td>1</td>
</tr>
<tr>
<td>Error</td>
<td>154.20</td>
<td>37</td>
<td>4.16</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Total</td>
<td>27864</td>
<td>40</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>
Table 3 shows the average motor impulsivity scores of the two groups are significantly different (P < 0.001). Hence, it can be concluded that motivational interviewing is a change in motor impulsivity.

Table 4: Results of covariance analysis in improvident subscale scores in both control and experimental groups

<table>
<thead>
<tr>
<th>Source of charge</th>
<th>Addition square</th>
<th>Degree of freedom</th>
<th>Mean square</th>
<th>F</th>
<th>P-Value</th>
<th>Eta coefficient</th>
<th>Statistic power</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pretest</td>
<td>16.16</td>
<td>1</td>
<td>16.16</td>
<td>44.56</td>
<td>0.001</td>
<td>0.54</td>
<td>1</td>
</tr>
<tr>
<td>Group</td>
<td>118.14</td>
<td>1</td>
<td>118.14</td>
<td>86.08</td>
<td>0.001</td>
<td>0.69</td>
<td>1</td>
</tr>
<tr>
<td>Error</td>
<td>50.78</td>
<td>37</td>
<td>1.37</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Total</td>
<td>21313</td>
<td>40</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Results show that the mean subscale scores of improvident were significantly different between the two groups (P < 0.001). Hence, it can be concluded that change in the motivational interviewing group will cause changes in improvident. The results also show that the sample size has sufficient statistical power to examine this hypothesis. Thus, the effectiveness of motivational interviewing in three dimensions of cognitive impulsivity groups, mobility, and extremely improvident is significant between the two groups. The second hypothesis is therefore confirmed.

**Discussion**

Substance abuse and dependency is a disorder with different aspects of psychological, social and psychological influences. Nowadays, medication by methadone is considered an important component of treatment of drug dependency. Along with this treatment, conducting motivational interviews with drug users is also important. In addition, the research is in good agreement with previous researches.

The first hypothesis is based on the efficacy of group motivational interviewing in reducing impulsivity in addicts treated with methadone, the results showed that there are significant differences between the two groups in overall impulsivity (P < 0.05).

These findings are also consistent with the results of the studies conducted by Hids et al. [16] and Soroudi et al. [20].

The second hypothesis of this study is based on the role of motivational interviewing and group effectiveness in reducing impulsivity dimensions (cognitive, motor and improvident) of addicts on methadone treatment and the results showed a significant level of difference between the two groups in impulsivity dimensions (cognitive, motor and improvident) (p < 0.001). The results of the survey are
consistent with those of Edalatee et al.\textsuperscript{[10]} and Taylor\textsuperscript{[20]}. Therefore the results of the study suggest that a decrease in impulsivity is possible with a combination of medication (methadone) and motivational interviewing approach, which have also been used by Buchler and Rolynek\textsuperscript{[10]}.

**References**


