Research Paper:
The Effects of Group Schema Therapy on Psychological Wellbeing and Resilience in the Clients Under Substance Dependence Treatment

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ABSTRACT

Background: Low psychological resilience is an essential component in substance abuse relapse in individuals with substance use disorder. The present study aimed to investigate the effects of group schema therapy on psychological wellbeing and resilience in individuals under treatment with methadone and buprenorphine.

Methods: This was a quasi-experimental study with a pre-test, post-test design and a control group. The statistical population comprised 248 subjects with substance dependence under treatment in Samaa Addiction Treatment Clinic in Isfahan Province, Iran, in 2019. A sample of 40 patients was selected by convenience sampling method; accordingly, they were randomly allocated to the experimental and control groups. The experimental group underwent ten 90-minute weekly sessions of group schema therapy. The research instruments included the 75-item Early Maladaptive Schema Questionnaire-Short Form, the Connor-Davidson Resilience Scale, and the Ryff’s Scale of Psychological Wellbeing. Data analysis was conducted by Multivariate Analysis of Covariance (MANCOVA) using SPSS.

Results: The obtained results revealed that group schema therapy was effective in promoting psychological wellbeing and resilience in individuals under treatment with methadone and buprenorphine (P<0.01).

Conclusion: This study provided evidence for the effectiveness of group schema therapy in enhancing psychological wellbeing and resilience among individuals with substance dependence. This intervention program can thus be implemented by substance dependence therapists and psychiatric nurses.
1. Introduction

Substance Dependence (SD) is a problem majorly affecting one’s life (Laudet, 2011). Statistics from Iran suggest that the use of addictive substances is on the rise, while its age of use is declining (Sohrabi, Aazami & Doštian 2014). More than 90% of individuals with SD experience relapse after abstinence periods (Menon & Kandasamy 2018). SD presents destructive effects on individuals’ physical and Psychological Wellbeing (PWB). Research indicates that subjects with SD experience a poor level of PWB (Moghadam, Makvandi & Naderi 2021; Bano et al. 2019). Substance Use Disorders (SUDs) have been studied concerning comorbidity with other psychological disorders (Solati & Hasnapour-Dehkordi, 2017). Roncero et al. (2016) documented that the level of PWB is low in this group. They also reported a high degree of comorbid anxiety, as well as sleep and mood disorders in clients with SD.

A major point that merits attention concerning SD is the affected individual’s mutual and familial relationships, i.e., among the most important mutual social relations. Poor relations with parents and inefficient and unsuitable parenting styles can lead to the formation of Early Maladaptive Schema (EMS) during one’s childhood and adolescence (Atadokht et al. 2015). The basic assumption in Schema Therapy (ST), which results from the creative integration of several other views, is that EMSs lead to psychological harm and personality disorders (Mohammadi et al. 2020). Young, Klosk and Weishaar (2006) emphasize the role of EMS in the formation and persistence of these harms; they believe that the process of treatment should focus on the identification and adjustment of these EMSs. These EMSs are gradually formed in the individual’s mind and inefficiently influence their life. As a cognitive infrastructure, these schemas contain inefficient central beliefs with cognitive, emotional, and behavioral dimensions that, when activated, can lead to psychological distress, substance abuse, and other dysfunctions. Studies reported that the intensity and frequency of EMSs are higher in individuals with SD than in the general population (Shorey, Anderson & Stuart 2012; Shorey, Anderson & Stuart 2013; Zamirinejad et al. 2018). Shorey, Anderson and Stuart (2013) signified that EMSs can be altered during the short-term treatment of SD. Moreover, Amaro et al. (2010) regard ST as effective in treating SUDs.

Individuals with SD have lower psychological resilience and life satisfaction, compared to non-abusers. Such a decreased PWB increases one’s vulnerability to substance abuse (Roustaeei et al. 2017; Marmet et al. 2018). An essential component in substance abuse relapse is low psychological resilience in subjects with SUDs (Badie et al. 2020). Cognitive-Behavioral Therapy (CBT) interventions effectively prevent substance abuse relapse by enhancing the level of resilience (Suhir 2018).
A common treatment for controlling narcotic dependence is pharmacotherapy; such interventions are aimed to prevent withdrawal symptoms, reduce cravings, prevent relapse, and return the physiological functions that have been disrupted by substance abuse to the normal state. Methadone and buprenorphine are widely prescribed medications for controlling narcotic dependence (Blanco-Gandía & Rodríguez-Arias 2018). Pharmacotherapy is the first stage of treatment for SD, which should be followed by rehabilitation, as the most important treatment stage. Rehabilitation indicates the empowerment of different domains of life and mental health, which requires psychotherapy (Wendt & Gone 2017; Wu, 2010).

Schemata are fundamental variables with strong explanatory power. This is because cognitive processing, coping strategies, and lifestyle are affected by this fundamental construct. Schemata are the overall prominent pattern and model of the cognitive-emotional experience of an event; their formation can date back even to the infant’s pre-linguistic communication phase (Kamalian, Mirzahosseini & Monirpoor 2021). Individuals with SD present a low level of PWB and resilience; such conditions are associated with relapse and SD. Thus, the present study aimed to investigate the effects of group ST on PWB and resilience in individuals under treatment with methadone and buprenorphine.

2. Materials and Methods

This was a quasi-experimental study with a pre-test, post-test and a control group design. The statistical population comprised 248 subjects with narcotics dependence receiving maintenance treatment with methadone and detoxification with buprenorphine in Samaa Addiction Treatment Clinic in Isfahan Province, Iran, in 2019. The required sample was chosen by the convenience sampling method. In total, 40 subjects were randomly allocated to the experimental and control groups (n=20/group) by G-power statistical software. All study participants had undergone short-term detoxification (4-7 days) and were under treatment with methadone. The inclusion criteria were having a medical record in the SD treatment clinic and providing informed consent forms to participate in the research. The exclusion criteria were absence from >2 treatment sessions and reluctance to continue the treatment process. A pre-test was performed in the experimental and control groups before the onset of treatment sessions and no significant difference was observed between them. In the pre-test and post-test phases, PWB and resilience were examined in the study subjects. After administering the pre-test, the experimental group underwent ten 90-minute weekly sessions of group ST by the researcher in the SD treatment clinic; however, the control group received no treatment. Then, the post-test was administered to the study groups. Table 1 presents a summary of the intervention sessions.

The following instruments were used to collect the necessary data in this study.

- The 75-item Early Maladaptive Schema Questionnaire-Short Form (YSQ-SF): The YSQ-SF was developed by Yang in 1990. The YSQ-SF is a 75-item self-report instrument for assessing EMSs, scored on a 5-point Likert-type scale from 1 (completely untrue of me) to 6 (describes me perfectly). The total score for this scale ranges from 75 to 450, and a higher score indicates a more pronounced presence of inefficient schemas. Every 5 questions belong to one schema. Moreover, to obtain the score of each schema, the mean score of 5 questions is computed (Welburn et al. 2002). This questionnaire has no cut-off point and is only an auxiliary tool for diagnosis, i.e., completed by conducting an interview. For the initial diagnosis, it is enough to have two scores of 5 and above in the special questions group of each schema. This instrument has been normed in Iran by Divandari et al. (2009), reporting an internal consistency (Cronbach’s alpha coefficient) of 0.97 and 0.98 in female and male populations, respectively. The content validity of the scale was obtained as desirable and the total test reliability equaled 0.87 according to Glaser et al. (2002). In the present study, Cronbach’s alpha coefficient was measured as 0.91 for the questionnaire. Acquired scores from this questionnaire were not the inclusion criteria of this study.

- Ryff’s Psychological Well-Being Scale (PWB): This scale includes 84-items (14 items per subscale) and measures 6 components of self-acceptance; positive communication with others; self-determination; environmental mastery; personal growth, and purposefulness in life. The scale is a self-assessing instrument, i.e., responded on a 6-point Likert-type scale, ranging from strongly agree to strongly disagree (1-6) (Ryff 1989). The total score for this scale ranges from 84 to 504. A higher score indicates greater PWB. In the present study, the total score of the questionnaire was considered. Luştrea, Al Ghazi and Predescu (2018) reported the reliability of the scale as 0.87 using Cronbach’s alpha coefficient. Bayani, Koochekya and Bayani (2008) reported Cronbach’s alpha coefficient of 0.82 for the Persian version of this scale. The relevant Cronbach’s alpha coefficient was computed as 0.88 in the present study.
The Connor-Davidson Resilience Scale (CD-RISC-25): This scale was developed by Connor and Davidson (2003). It is a 25-item scale, scored on a 5-point Likert-type scale, ranging from 0 to 4 (0 = not true at all, 1 = rarely true, 2 = sometimes true, 3 = often true, 4 = true nearly all the time), with minimum and maximum scores of 0 and 100, respectively. The cut-off point of the CD-RISC equals 80.4 and 47.8 for healthy individuals and those with Post-Traumatic Stress Disorder (PTSD), respectively. The higher the obtained total score, the higher the respondent’s resilience level. Badie et al. (2020) reported Cronbach’s alpha coefficient of 0.85 for this scale. In the present study, a Cronbach’s alpha coefficient of 0.89 was calculated for the scale.

The obtained data were analyzed by descriptive and inferential statistics, such as mean, standard deviation, and Multivariate Analysis of Covariance (MANCOVA). Shapiro-Wilk test was used to test the normality of the distribution of the data. SPSS 21.0 was used to analyze the collected data.

3. Results

The study participants included 40 male clients under treatment with methadone and buprenorphine, aged 25-45 years. The demographic data of the research participants are indicated in Table 2. Table 3 presents the pre-test, post-test mean and standard deviation values of the research variables in the experimental and control groups. The Mean±SD post-test values of resilience in the ST and control groups were 87.64±11.93 and 68.20±15.36, respectively. Moreover, the Mean±SD post-test scores of PWB in the experimental and control groups were 332.37±52.06 and 277.33±43.76, respectively.

Table 1. A summary of the group schema therapy sessions (Young, Klosko & Weishaar 2006)

| Session | Content |
|---------|---------|
| 1       | After the introduction and establishing rapport with the participants, the importance and goal of schema therapy were explained; the clients’ problems were formulated based on schema therapy, and their maladaptive schemata were identified. |
| 2       | Objective evidence confirming/rejecting the schemata was examined based on current and past life evidence, and the current and healthy schemata were discussed. |
| 3       | Cognitive techniques, such as schema validity test, new definitions for the evidence confirming the existing schema, and the use and evaluation of the advantages and disadvantages of coping styles were instructed. |
| 4       | The concept of a healthy adult was reinforced in the study participants’ minds. Their unmet emotional needs were extracted by mental imagery. The early memories were identified. Strategies for expressing blocked emotions were taught by practicing the technique. |
| 5       | Healthy communication and imaginary talks with the subjects forming the schema were established. |
| 6       | Experimental techniques such as mental imagery of problematic situations and coping with the most problematic ones were taught. |
| 7       | By using the empty chair technique, communication with significant others in one’s life was instructed. Role-Playing was used to teach adaptive coping responses. |
| 8       | By practicing healthy behaviors through role-playing and performing the exercises, new behavioral patterns were taught. |
| 9       | The advantages and disadvantages of healthy and unhealthy behaviors were examined, and strategies for overcoming the barriers to behavior change were instructed. |
| 10      | The materials presented in the previous sessions were briefly reviewed, and the instructed strategies were practiced. |

Table 2. The demographic characteristics of the research participants

| Group       | Mean±SD Age, y | Educational Level | Marital Status |
|-------------|----------------|-------------------|----------------|
|             |                | Middle School Degree | High School Education | College Education | Married | Single |
| Experimental | 36.74±9.61     | 9                  | 6              | 5              | 9       | 11     |
| Control     | 37.22±8.42     | 8                  | 8              | 4              | 8       | 12     |
| P           | 0.580          | 0.862             | 0.675          |
The distribution of the dependent variables in pre-test and post-test phases is demonstrated in Table 3.

The Shapiro-Wilk test was used to test the normality of the scores’ distribution. The null hypothesis of the normality of distribution of the two groups’ scores was established (Table 4). In other words, the assumption of the normality of distribution of pre-test scores was confirmed for the experimental and control groups. Moreover, the homogeneity of the covariance matrix was confirmed by Box’s M test.

Levene’s test was performed to examine the assumption of the equality of variances of the study groups’ scores. The null hypothesis of the equality of variances of the two groups’ post-test scores was established (Table 5). In other words, the assumption of the equality of variances of the post-test scores was confirmed for the experimental and control groups. As the normality of distribution assumption was established, and based on the random selection of the sample and the equality of variances, ANCOVA was performed to obtain inferential results.

The pre-test effect on the post-test values was controlled by ANCOVA. The other confounding variables were controlled via random allocation. Based on Table 6 and the significance levels, group ST significantly increased the mean post-test scores of the experimental group, compared to the control group in PWB and resilience (P=0.001). Therefore, the main research hypothesis was approved. The MANCOVA data indicated that the effect size of PWB and resilience equaled 70.9% and 49.7%, respectively. Thus, 70.9% and 49.7% of the individual differences of the scores of PWB and resilience were explained by group membership effects.

4. Discussion

The present study investigated the effects of group ST on PWB and resilience among clients under treatment with methadone and buprenorphine. The obtained results indicated that group ST was effective in enhancing PWB and resilience in individuals with SD under maintenance treatment with methadone and short-term detoxification with buprenorphine. This finding was consistent with those of Dadomo et al. (2018) concerning the effectiveness of ST on emotion regulation and resilience in individuals with SD. Moreover, these data were in line with those of Shorey, Anderson and Stuart (2012) on the effectiveness of ST on PWB in clients with SD.

In individuals with SD, other comorbid psychological and personality disorders, such as borderline personality disorder, antisocial personality disorder, as well as

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Table 3. The mean and standard deviation values of dependent variables in the experimental and control groups

| Characteristic       | Phase          | Mean±SD | Experimental Group | Control Group | P  |
|----------------------|----------------|---------|--------------------|---------------|----|
|                      |                |         |                    |               |    |
| Resilience           | Pre-test       | 69.52±15.03 | 66.70±15.60       | 0.684         |    |
|                      | Post-test      | 87.64±11.93 | 68.20±15.36       | 0.001         |    |
| Psychological wellbeing | Pre-test     | 280.00±44.54 | 276.05±43.04     | 0.839         |    |
|                      | Post-test      | 332.37±52.06 | 277.33±43.76     | 0.001         |    |

Table 4. The results of the Shapiro-Wilks test on the normality of the scores’ distribution

| Characteristic       | Group          | Shapiro-Wilks Test |     |     |    |
|----------------------|----------------|--------------------|-----|-----|----|
|                      |                | Statistics        | df  | P   |    |
| Resilience           | Experimental   | 0.96               | 19  | 0.65|    |
|                      | Control        | 0.88               | 19  | 0.52|    |
| Psychological wellbeing | Experimental | 0.93               | 19  | 0.19|    |
|                      | Control        | 0.97               | 19  | 0.71|    |
mood, sexual, and anxiety disorders are often observed. Thus, individuals with SD present a lower level of mental health, compared to the general population. Due to dysfunctions in different domains of life, including social and familial relationships, job, and education, their life is associated with extensive stress. The lack of effective coping skills for managing these stressors prone the subject to use maladaptive styles to cope with pressure. These maladaptive styles include experiencing a pleasant feeling by consuming drugs and feeling relieved from these pressures and problems for a short time. However, with this method, the problems, pressures, negative feelings, and distressing thoughts are not effectively eliminated from one’s life (Solati & Hasanpour-Dehkordi 2017). Therefore, when problems remain unsolved, a lack of control over one’s life and a sense of being dependent drive one to hopelessness. According to ST, these complications are originated in early maladaptive schemata that lead to chronic personality and psychological disorders. Schemata are our mental eyes for looking at ourselves, our relationships, and the world. They determine how we view ourselves, what expectations we have, and how we make sense of events. Early maladaptive schemata refer to a subject’s deepest cognitive aspect and a set of negative and unrealistic beliefs, mental images, memories, and physical sensations about a topic in oneself and others (Bakhshi Bojed & Nikmanesh 2013).

Damaging experiences (e.g. the death of a parent or experiencing a trauma) and inefficient parenting styles (lenience and neglect) during childhood and adolescence are critical factors, leading to the formation of these early maladaptive schemata (Shorey, Anderson & Stuart 2013). When these schemata are formed in one’s mind, they will be activated in future situations related to the schema and cause intense negative emotions. In this situation, the subject has to foster a coping response to control these intense and negative emotions; they usually confirm those EMSs, because they are self-continuing. Inefficient fundamental beliefs (i.e., I’m not lovable) and cognitive distortions (e.g. all-or-nothing thinking) are the second aspects of cognition. Negative automatic thoughts are the most accessible aspect of cognition originating from inefficient fundamental beliefs. Inefficient fundamental beliefs and negative automatic thoughts are the targets of classical CBT (Zamirinejad et al. 2018).

ST targets the deepest level, i.e., inefficient schemas, to modify them. As a result of this modification, the subject views oneself, others, and the world more(3,13),(994,996)

| Characteristic          | Source | SS      | df | MS    | F      | P      | η² | Statistical Power |
|-------------------------|--------|---------|----|-------|--------|--------|----|------------------|
| Resilience              | Group  | 2215.67 | 1  | 2215.67 | 27.65  | 0.001  | 0.497 | 0.99             |
|                         | Error  | 2243.96 | 38 | 59.05 |        |        |      |                  |
| Psychological wellbeing | Group  | 22996.48| 1  | 22996.48 | 118.55 | 0.001  | 0.709 | 0.99             |
|                         | Error  | 5431.46 | 38 | 142.93|        |        |      |                  |

SS: Sum of Squares; df: degree of freedom; MS: Mean Squares.

5. Conclusion

The obtained data revealed that ST was effective in alleviating pathological signs, promoting the quality of life, and enhancing a healthy mentality. Besides, ST im-

Table 5. The results of Levene’s test to examine the assumption of the equality of variances

| Characteristic | F     | df₁ | df₂ | P   |
|----------------|-------|-----|-----|-----|
| Resilience     | 881.10| 1   | 38  | 0.109|
| Psychological wellbeing | 0.41  | 1   | 38  | 0.526|
proved all components of PWB and resilience. The positive effects of ST on emotional self-regulation, effective relationships, autonomy, healthy mentality, accepting oneself, self-efficacy, competency, and the acceptance of change were associated with an increase in resilience against stressful life events and PWB. Cognitively, by challenging inefficient schemata and modifying them as directed by the therapist, the subject is equipped with a more powerful and healthy mentality and views oneself, others, and events more flexibly and rationally. Therefore, these cognitive, emotional, and behavioral changes resulting from ST enhance one's PWB.

Thus, employing ST also improves hopefulness and self-efficacy. These positive changes promote one's adjustment in the face of threatening situations. They result from the dominance of a healthy mentality over other mentalities (in terms of schema therapy) or the dominance of the cerebral cortex over the amygdala (in terms of neurology).

Ethical Considerations

Compliance with ethical guidelines

The study was approved by the Ethical Committee of Payame Noor University (Code: 2612023). All ethical principles are considered in this article. The participants were informed about the purpose of the research and its implementation stages and participated in the study with informed written consent. They were also assured about the confidentiality of their information and were free to leave the study whenever they wished, and if desired, the research results would be available to them.

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Authors' contributions

Conceptualization, supervision, methodology, investigation, writing–review & editing, writing –original draft: Both author; Funding acquisition, resources: Majid Pourpashang.

Conflict of interest

The authors declared no conflicts of interest.

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