Effectiveness of Community Reinforcement and Family Training (CRAFT) on Quality of Life and Depression in Families with Drug Abuse

Hossein Assadbeigi[1], Abbas Pourshahbaz[2], Parvaneh Mohamadkhani[2] & Ali Farhoudian[3]

[1] Phd Student, University of Social Welfare and Rehabilitation Sciences, Tehran, Iran

[2] University of Social Welfare and Rehabilitation Sciences, Tehran, Iran

[3] Substance Abuse and Dependence Research Center, University of Social Welfare and Rehabilitation Sciences, Tehran, Iran

Correspondence: Dr. Abbas Pourshahbaz, University of Social Welfare and Rehabilitation Sciences. Tehran, Iran. Tel: 98-21-2218-0045. E-mail: apourshahbaz@yahoo.com

Abstract

Drug abuse as a biological, psychological, and social problem affect all life aspects including quality of life and cause socio-psychological problems. This study aimed to evaluate the effectiveness of community reinforcement and family training (CRAFT) Method on quality of life and depression in family members of substance abusers. This was a quasi-experimental study with control group in which the pre-test and post-test were used. In the present study, two experimental groups (CRAFT and Nar-Anon) and a control group were used using the purposive sampling selected from the family members of substance abusers who referred to the methadone treatment clinic in Tehran. Each of groups consisted of 25 people. CRAFT groups were trained in 12 sessions of intervention techniques. Nar-Anon groups participated in self-help sessions and control did not receive any training. All three groups completed the BDI-II Test and WHO Quality of Life-BREF questionnaire and the results were analyzed using SPSS-16. The results of two intervention methods compared with the control group showed no significant effect in reducing depression. CRAFT and Nar-Anon interventions were not effective in reducing the depression of family members of drug abuse patients but both were effective in promoted the quality of their life compared with control group.

Keywords: Community Reinforcement And Family Training (CRAFT), nar-anon, drug abuse, Quality of Life, depression

1. Introduction

Substance abuse is one of the most important problems in the world that is prevalent in the modern world. The annual prevalence of use of any illicit drug is 5% of the world population (age 15–64) – some 200 million people (Ghodse et al., 2011). This has important effects such as psychological disorders, physical, familial, cultural, social, and economic, and threatens human being`s health (Arcidiacono et al., 2009). Substance abuse as a common disorder can have a profound impact on the family members of the users. It is characterized by stress with mental and physical symptoms such as worry about the imposed burden of addiction, concerns on the physical and mental health of the addicts, reduction of social relationships, negative effects on the relationship between family members or emotional or mood symptoms including anxiety, depression, insolvency, anger and guilt (Butler & Bauld, 2005). Kaufman (1985), based on family systems approach, believes that the drug abuse, created a maintained system in the family. It means that drug abuse and addiction of one of the family members, especially father, can change the roles, duties, and functions of all family members. Quality of life is notably considered in the family health assessment (Černe et al., 2012). It includes physical health, psychological status, social relationships, personal and spiritual beliefs and it is assessed based on the subjective experiences of the people (Skevington et al., 2004). An inappropriate life style is one of the reasons of the drug abuse (Bizzarri et al., 2005). Addiction is considered as a bio-psycho-social problem, affecting all aspects of life and quality of life (De Maeyer et al., 2004).

On the other hand, psychiatric disorders associated with addiction, cause detrimental effects on physical health,

psychological, social, familial and social relationships and its consequences imposes very heavy costs on the governments (Roberts & Xing, 2007). Addiction can cause mental illness. The prevalence of the psychiatric disorders among drug users has been reported between 25 to 80%; this as a stress factor can cause mental disorders of other family members (Ross et al., 1988). Drug dependence affects the whole family and has adverse consequences so that families with an addicted member suffer from depression, high anxiety and chronic fatigue resulting from their concerns and frustration (Barnard, 2007). Concerned family members and significant others (CSOs) experience a range of financial and psychosocial costs as a result of their relationship with a substance using individual (SUI). The psychosocial problems experienced by Concerned significant others CSOs are well recognized and include a wide range of emotional and relationship difficulties. Spouses of SUIs report high levels of psychological distress, relationship dissatisfaction, and interpersonal conflict. A preliminary study found that 100% of the CSOs who sought help dealing with an SUI reported emotional and relationship difficulties in the prior month. There is also a heightened risk for domestic violence in these relationships, with more than 50% of the reported domestic violence cases involving the use of alcohol or other drugs (Benishek et al., 2011).

Different approaches are used for the family members of substance abusers. They mostly refer to Al-Anon and Nar-Anon groups; a strategy that most family interventions allocated in the field of addiction (Manuel et al., 2011; Galanter & Kleber, 2005). Al-Anon and Nar-Anon are 12 Steps programs. These programs advocate abandoning the patient and accepting of disability of CSOs in control of drug and alcohol of loved ones (Meyers, Miller et al., 2012). Such programs may provide support for family members and dependents in the family that are willing to change and effective treatment, but not beneficial in engaging and motivating those who are not interested in healing and therapy (Fisher & Roget, 2009).

CRAFT (Community reinforcement and family training) program is based on principles and techniques of behavioral therapy and cognitive-behavioral therapy. This approach is based on the belief that the family members to persuade a loved one that is resistant to treatment, can play a powerful role (Smith & Meyers, 2004). CRAFT approach teaches Concerned Significant Others (CSO) to increase motivation and participation of drug-dependent individuals for treatment (Roozen et al., 2009).

Evidence shows that after intervention by CRAFT approach, Concerned Significant Others attracted the participation of about 55 to 86 percent of the abusers' motivation, the process of their treatment (Manuel et al., 2011). Another goal CRAFT is to help the CSO make other positive life changes so that her or his own psychological functioning improves, regardless of whether or not the resistant substance abusing loved one (Identified Patient; IP) enters treatment (Smith & Meyers, 2004).

But this is a new approach and it needs more research in this area in the various groups. This study aimed to evaluate the effectiveness of community reinforcement and family training (CRAFT) on quality of life and depression in drug abusers families' comparison with 12 steps Nar-anon self help group.

2. Method

This was a quasi-experimental study with the control group in which the pre-test and post-test were used. Two groups of Nar-Anan and CRAFT and a control group were used. The statistical population includes the family members of substance abusers. The statistical sample includes all treatment refused family members of substance abusers who referred to the Methadone Clinic in Tehran through contact with the National Addiction Helpline. Purposive sampling method was used, too. According to Cohen table, and according to the test power of 80% and taking into account the loss of some participants, the number of samples for each group was 25 people and the total number was 75.

Inclusion criteria for participants were as follow: Being Female, Having a family member who have criteria for drug abuse disorders for substances such as narcotics, stimulants (amphetamine, methamphetamine, cocaine), cannabis (Marijuana and Hashish) and alcohol, the IP refusing treatment, participant has an effective role in the life of the I patient, residency in Tehran or suburbs, contact with the patient at least 3 days a week, the age of at least 18 years old for both participating person and the patient.

Exclusion criteria included as follow: abusing drugs by participating person herself, having the criteria for schizophrenia or any other psychotic disorder diagnosis, educational level of less than a fifth-grade in primary school, receiving substance abuse treatment in the past 3 months (apart from detoxification), Unavailability of the drug-dependent patients for various reasons (including the arrest by the police).

CRAFT is a 12 sessions training program for families to encourage the patients for the treatment and improve their quality of life. This is based on the principles of behavioral and cognitive-behavioral techniques that have

been invented by Robert Myers.

Families Association of Narcotics Anonymous (Nar-Anon): A self-help group consisting of family members of substance abusers with the porpuse of supporting the group members. In this study, Nar-Anan group formed by other people before the starting the study in Methadone clinic without the presence of the professionals and based on the common method in these groups, 10-30 subjects with one session per week and group members exchange their information and feelings in the sessions.

2.1 Research Instruments

2.1.1 Beck Depression Inventory (BDI-II)

Beck Depression Inventory II (BDI-II) is a modified self-report questionnaire for depression and an index to measure depression symptoms in clinical and non-clinical populations. Beck Depression Inventory. It includes 21 symptoms of depression and range of scores is theoretically from 0 to 63. Respondents are asked to rate the severity of these symptoms on a scale from 0 to 3. For full understanding the meaning of items, the fifth grade educational level is required. Completing the questionnaire takes 5 to 10 minutes. No or minimal depression is defined with a score less than 10. The mild to moderate depression index is scored from 10 to 18. The moderate to severe depression index is scored 19 to 29 and severe depression is scored from 30 to 63 (Groth-Marnat, 2006).

2.1.2 WHO Quality of Life-BREF Questionnaire

This is the short form of the WHO Quality of Life questionnaire with 100 items (WHOQOL-100). It has 26 questions; the first question determines the quality of life in general and the second question, the overall health status. Next 24 questions assess the quality of life domains: physical, psychological, level of independence, social relationships, environment and spirituality/religion/personal beliefs.. Competing the questionnaire takes 40 to 90 minutes using the Grebin interview. This questionnaire has been used in several research activities. It is highly great popularity reliable, it was translated into 40 languages including Persian, and it has been normalized in many countries. In 2009, it has been standardized by Karimloo et al. (2010).

2.2 Research Hypothesis

1. CRAFT is effective in the reducing depression in family members of substance abusers.

2. Nar-Anon-based intervention is effective in reducing depression in family members of substance abusers.

3. CRAFT is effective in improving the quality of life of family members of substance abusers.

4. Nar-Anon intervention is effective in improving the quality of life of family members of substance abusers.

3. Results

To test the research hypotheses (1 and 2) and analysis of the significance of the differences in reducing depression in pretest and posttest, univariate analysis of covariance was used. Since the analysis of covariance is sensitive to the identical factors of the slope of the regression, covariance homogeneity, and normality of variables, Kolmogorov-Smirnov test was used to determine the normality of variables and Levine's test.

Results of the equal test of the slope of the regression of the depression scores have been reported in Table 1.

Table 1. Equal test of the slope of the regression of the depression

Interaction of the groups and the covariate	Sum of squares	df	Mean Square	F	Sig
	47.38	2	23.69	0.617	0.543

Table 1 shows the interaction between the test condition and covariate is not significant. In other words, the slope of the regression line for each of the three test conditions is equal.

To determine the normality of the scores of the depression the pre-test and post-test, Kolmogorov-Smirnov test and Shapiro Wilk were used and the results are reported in Table 2.

Table 2. Test results

	Pretest	Kolmogorov-Smirnov test			Shapiro Wilk		
		statistics	df	sig	Statistics	df	sig
CRAFT	posttest	0.191	18	0.08	0.919	18	0.122
	Pretest	0.106	18	0.20	0.952	18	0.455
Nar-Anon	posttest	0.180	15	0.20	0.931	15	0.286
	Pretest	0.101	15	0.20	0.948	15	0.487
Control	posttest	0.177	16	0.195	0.914	16	0.133
	Pretest	0.145	16	0.20	0.950	16	0.484

Table 2 shows that the statistics related to each group and stage is above the level of 0.05, therefore, the normality of data hypothesis is confirmed in pre-test and post-test. Results of the Levine test shows that homogeneity of the variance error has been confirmed in pretest and posttest. Analysis of the hypotheses of covariance indicates that ANCOVA can be used for the investigating the effect of treatment on the depression. The results of the Aunivariate NCOVA were reported in Table 3 for investigating the pretest and posttest effect.

Table 3. Results of univariate analysis of covariance to assess the effect of pre-test and post-test on the scores of depression

Change resources	sum of squares	df	Mean squares	F	Sig	Eta
pretest	3543.6	1	3543.6	99.95	0.000	0.96
Main effect (treatment)	95.01	2	47.5	1.34	0.272	0.056
Remaining error	1595.4	45	35.45			

The above table shows that by removing the effect of the pretest scores of depression, the main effect (treatment) is not significant on the scores of the depression post-test ($F_{(2, 45)}$ =1.34, P<0.272, partialη^2, =0.056). According to this analysis, the mean scores of the posttest of the CRAFT and Nar-Anon group are not significantly higher than the control group. Since the F (1.34) with df (2.45) is significantly higher than 0.05, therefore, there is no significant difference between the mean of these groups at the end of sessions.

Eta square shows the low severity of this effect. Since the main effect is not significant. Posttest means are not compared. Therefore, according to Table 3, it can be concluded that:

1. CRAFT method is not effective in reducing the depression level of family members of substance abusers who have participated in the sessions. So hypothesis 1 that CRAFT is effective in the treatment of depression of the family members of drug abusers not confirmed.

2. Nar-Anon-based interventions is not effective in reducing the depression level of family members of substance abusers who have participated in the treatment sessions,. So hypothesis 2 that states Nar-Anon intervention is effective in reducing depression of family members of substance abusers is not confirmed.

3. There is no significant relationship between the effect of CRAFT-based intervention and Nar-Anon on reducing the depression of the participants in the meetings. In other words, the most effective intervention in reducing depression of the participants in the treatment sessions was not determined. The difference was not significant. Results showed that comparing the results of two intervention and control groups has no significant effect on reducing the depression symptoms.

Adjusted mean difference of the pre-test and post-test scores of the depression and standard deviation were reported in Table 4.

Table 4. Results of post hoc Bonferroni test to compare the posttest scores of the quality of life

Groups		Adjusted mean difference	SD	sig
CRAFT	Nar-Anon	1.79	2.08	1.00
	Control	-2.09	2.24	1.00
Nar-Anon	CRAFT	-1.79	2.08	1.00
	Control	-3.88	2.37	0.326
Control	CRAFT	2.09	2.24	1.00
	Nar-Anon	3.88	2.37	0.326

To test the research hypotheses (3 and 4) and research question 2, analysis of the significance of the differences in improving the quality of life in pretest and posttest, univariate analysis of covariance was used. Since the analysis of covariance is sensitive to the identical factors of the slope of the regression, covariance homogeneity, and normality of variables, Kolmogorov-Smirnov test was used to determine the normality of variables and Levine's test.

Table 5. Equal test of the slope of the regression of the qualirt of life

Interaction of the groups and the covariate	Sum of squares	df	Mean Square	F	Sig
	408.67	2	204.34	0.136	0.874

Table 5 shows the interaction between the test condition and covariate is not significant. In other words, the slope of the regression line for each of the three test conditions is equal. To determine the normality of the scores of the depression the pre-test and post-test, Kolmogorov-Smirnov test and Shapiro Wilk were used that the results are reported in Table 6.

Table 6. Test results

		Kolmogorov-Smirnov test			Shapiro Wilk		
	Pretest	statistics	df	sig	statistics	df	sig
CRAFT	posttest	0.159	18	0.20	0.931	18	0.204
	Pretest	0.130	18	0.20	0.960	18	0.719
Nar-Anon	posttest	0.117	15	0.20	0.938	15	0.985
	Pretest	0.192	15	0.142	0.904	15	0.108
Control	posttest	0.125	16	0.20	0.963	16	0.719
	Pretest	0.144	16	0.20	0.958	16	0.633

Table 6 shows that the statistics related to each group and stage is above the level of 0.05, therefore, the normality of data hypothesis   is confirmed in pre-test and post-test.

Results of the Levine test shows that homogeneity of the variance error has been confirmed in pretest and posttest. Analysis of the hypotheses of covariance indicates that ANCOVA can be used for the investigating the effect of treatment on the quality of life.

The results of the univariate NCOVA were reported in Table 7 for investigating the pretest and posttest effect.

Table 7. Results of univariate analysis of covariance to assess the effect of pre-test and post-test on the scores of quality of life

Change resources	sum of squares	df	Mean squares	F	Sig	Eta
pretest	47840.4	1	47840.4	33.02	0.000	0.423
Main effect (treatment)	20895.5	2	10447.7	7.21	0.002	0.243
Remaining error	65190.4	45	1448.7			

The above table shows that by removing the effect of the pretest scores of the quality of life , the main effect (treatment) is not significant on the scores of the quality of life post-test ($F_{(2,45)}$=7.21, P<0.002, partialη^2, =0.243). According to this analysis, the mean scores of the posttest of the CRAFT and Nar-Anon group are not significantly higher than the control group. Since the F (7.21) with df (2.45) is significantly higher than 0.05, therefore, there is no significant difference between the mean of these groups after the quality of life test.

Eta square shows the low severity of this effect (0.243). Since the main effect is not significant. Posttest means are not compared.

For comparing the differences between two groups and understanding the effectiveness of the CRAFT-based treatment and Nar-Anon, post hoc Bonferroni test was used. Results are summarized in Table 8.

Table 8. Results of post hoc Bonferroni test to compare the posttest scores of the quality of life

Groups		Adjusted mean difference	SD	sig
CRAFT	Nar-Anon	12.87	13.36	1.00
	Control	51.89	13.84	0.002
Nar-Anon	CRAFT	-12.87	13.36	1.00
	Control	39.02	14.83	0.035
Control	CRAFT	-51.89	13.84	0.002
	Nar-Anon	-39.02	14.83	0.035

Table 8 shows that there is a significant between the mean score of the posttest of the quality of life in treatment group and control group after posttest. Therefore, there is a significant difference between the mean score of the posttest of the quality of life of the Nar-Anon and control group in posttest. However, there is no significant difference between the mean score of the posttest of the quality of life in two groups of CRAFT and Nar-Anon in posttest. Therefore based on the Table 4-27, it can be said that:

1- CRAFT is effective on promoting the quality of life of the family members of drug abusers who have participated in the sessions. So hypothesis 3 that CRAFT is effective in the improving the quality of life of the family members of drug abusers is confirmed.

2- Nar-Anon-based interventions are effective in improving the quality of life of the family members of drug abusers who have participated in the the group sessions. So hypothesis 4 that Nar-Anon intervention is effective in improving the quality of life of the family members of the drug abusers is confirmed.

3- There is no significant deference between the effect of CRAFT-based intervention   and Nar-Anon on improving the quality of life of the participants in the meetings. In other words, the most effective intervention in improving quality of life of the participants in the treatment sessions was not determined. Therefore, concerning the effective methods in improving the quality of life by CRAFT and Nar-Anon, there was no significant difference between two interventions.

4. Discussion and Conclusion

This study aimed to investigate the effectiveness of the CRAFT on the quality of life and depression of the families with drug abusers. The Results showed that the hypothesis 1 that CRAFT is effective in reducing the depression of the family members not confirmed. Moreover, hypothesis 2 that Nar-Anon intervention is effective in reducing the depression of the family members of drug abusers not confirmed. Therefore, it can be concluded that CRAFT and Nar-Anon methods can not reduce the depression level of participant. On the other hand,

hypothesis 3 that CRAFT is effective in improving the quality of life of family members of substance abusers confirmed. Also Hypothesis 4 that Nar-Anon intervention is effective in improving the quality of life of family members of substance abusers confirmed. Therefore, it can be concluded that concerning the effective methods in improving the quality of life by CRAFT and Nar-Anon, there was no significant difference between the two interventions.

Results showed the effectiveness of the two methods in improving the quality of life but both CRAFT and Nar-Anon were not effective in reducing the depression of family members of substance abusers This is consistent with the results of the improving the quality of life and inconsistent with the studies by Christo and Sutton (1994), Meyers et al. (1998), Miller et al. (1999), Richter et al. (2000), Gilachen (2006) and Kanz (2009). They showed that people who participated in CRAFT and Nar-Anon showed higher interest in life and decreased depression, anxiety, hostility, improved physical and mental health compared to those who did not participate. This has confirmed in the studies by Keitner et al. (1990) that compared the normal families with dysfunctional families including drug abuser families and found significant differences in their functions. In addition, Waller and Mahoney study the changes in family role and mental status of the family members of substance abusers, too. Miller et al. (1999) showed that attending in the treatment sessions has useful effects on the performance and quality of life of the relatives of the drug abusers. For inconsistent results, it can be said that this study investigated the decreasing the depression of family members of substance abusers from different aspects.

One of the reasons these methods not be effective in reducing the depression of concerned significant others (CSO) is the severity of depression the participants have. The mean score of depression in BDI test for CRAFT, Nar-Anon and as usual groups were 27, 21 and 30 respectively which is in moderate to severe depression level. Another reason is that not all the participants have completed the sessions need for taking good results especially in Nar-anon group. Another reason was that the therapist has not seen a training course and supervision on CRAFT intervention and only used CRAFT manuals.

Controlling the time factor, lack of access to male sample and lack of follow-up study were some limitations of this study. Future research should is needed to evaluate CRAFT and Nar-anon self help interventions and consider the ethnic and cultural diversity n IRAN.

Competing Interests Statement

The authors declare that there is no conflict of interests regarding the publication of this paper.

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