

How Effective are Psychosocial Group Workings in Improving Treatment Compliance and Self-Efficacy? An Experimental Study with Substance Users

Tuğba GÖRGÜLÜ^{1,2} 

¹Department of Psychiatry, University of Rochester Medical Center, Rochester, NY, USA

²İstinye Üniversitesi, Sağlık Bilimleri Fakültesi, Sosyal Hizmet Bölümü, İstanbul, Türkiye

ABSTRACT

Introduction: Group work is one of the most effective treatment methods in rehabilitation of substance use behavior. In addition, the individual's motivation to quit substance and self-efficacy perceptions of quitting are important factors for the course of the treatment. Therefore, the aim of this study was to investigate the effect of group work process on motivational processes (intrinsic and extrinsic motivation, interpersonal help seeking and confidence-in-treatment subscales) and self-efficacy perception of substance users.

Method: This is an experimental study with 43 substance users. The Treatment Motivation Questionnaire subscales were used to measure the effect of the group work on the dimensions of treatment motivation (intrinsic motivation, extrinsic motivation, confidence-in-treatment, interpersonal help seeking), and the General Self-Efficacy Scale was used

to measure the effect of group work on the self-efficacy perceptions.

Results: The group work resulted in a significant increase in participants' intrinsic motivation and confidence-in-treatment. However, group work did not result in any significant change in extrinsic motivation, interpersonal help seeking and the perception of self-efficacy. In the follow-up process, a significant decrease was observed in the participants' self-efficacy perceptions.

Conclusions: Group work with substance users increases the intrinsic motivation and confidence-in-treatment. Therefore, group work practices will increase the effectiveness of substance use treatment.

Keywords: Substance use, group work, treatment motivation, intrinsic motivation, confidence-in-treatment, self-efficacy

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INTRODUCTION

Substance use behavior has been shown to increase in recent years. This is a public health problem that forms the basis of many biopsychosocial problems while being associated with other psychosocial issues, therefore an immediate action is needed (1, 2). Substance use behavior is higher in some high-risk groups. In general population 9% of adults meet the criteria for the substance use disorder while this number is 60% for adults in prisons, and 30% for adults in probation or pre-trial judicial system (3). The high numbers of substance use behavior observed among prison populations, have focused the recent discussions to be on the most effective treatment methods. The general consensus among the researchers in the area is that the group intervention programs are some of the most effective methods (4). The Wagoner and Piazza's (1993) study with 220 alcohol and substance users have shown that the group studies are an effective treatment option for alcohol users in the probation system (5). Some studies claim that group therapy can be as effective as individual therapy; in fact group therapies have been shown to be more effective in treatment of long-term substance use. Moreover, substance users who attended the group therapy showed better success at avoiding substance than those who did not. (6, 7). According to Gamble and O'Lawrence's longitudinal study with 6204 heroin users, 27% of heroin

users who participated in group work were able to stay away from heroin for five years whereas 34% of the users who did not participate started using heroin again in 12 months (8).

On the topic of the effective of treatment methods, other studies emphasize the individual's desire and readiness for treatment and self-efficacy to quitting the substance (9, 10). The desire of substance users to quitting the substance, compliance, motivation to treatment, and cooperation with the professionals are key factors for the effectiveness of the treatment (11). While some studies address the difficulties in raising the motivation of individuals especially those involved in the prison system, others point out that even short term motivational studies are effective in compliance with the treatment and desire for quitting the substance (12, 13). It is emphasized that motivational group works or use of motivational elements in group works play an important role in compliance of drug users with the therapy and their commitment to the treatment (14). For example, according to the results of the study conducted by Blondell et al. (2011), the substance users participated in motivation-focused group work had higher rates of staying and continuing the treatment (15). The substance user's cognitive structure and self-

efficacy to quit the substance play as much of an important role as his/her beliefs and motivation towards quitting when it comes to maintenance and completion of the treatment. Self-efficacy, a cognitive process, is the first step of changing the individual's behavior; therefore, weak self-efficacy puts an important obstacle to compliance and maintenance of the treatment (16, 17). In addition, strong self-efficacy perception is a protective mechanism for prevention of a relapse (18). Dolan et al. (2008) found that individuals with high self-efficacy are able to stay away from substances, they also have a lower risk at using drugs again and they can protect themselves against similar risky behavior (19). For this reason, group intervention works aimed towards strengthening the individual's self-efficacy to quit the substance are accepted as an important treatment methodology. Sheykhnezhad and Seyedfatem (2019) studied the effect of group intervention work on substance avoidance, relapse prevention and self-efficacy with 100 substance users. It was found that group work was an effective treatment method for the development of self-efficacy for the substance avoidance.

In recent years, there have been promising efforts on prevention and intervention studies regarding the substance use in Turkey. However, the number of studies are still limited (21, 22). In order to develop appropriate prevention, intervention and treatment methods, and to ensure that the substance users benefit from these treatments effectively, we need to evaluate the results and assess the effectiveness of the studies conducted with the substance users. Therefore, the aim of this study is to examine the effectiveness of group intervention therapies with substance users on their motivation to quit the substance. The study also aims to investigate whether group studies are effective in developing intrinsic motivation, extrinsic motivation, interpersonal help seeking, confidence-in-treatment and self-efficacy. Based on the previous studies in literature (9, 21, 22), I hypothesize that the motivation- and behavior-focused group therapies with substance users in the prison system will positively affect their intrinsic motivation, confidence-in-treatment, interpersonal help-seeking behavior and self-efficacy but these therapies may not cause a significant change in their extrinsic motivation.

METHOD

Research Model

This study is an experimental study which has been done pretest, posttest and follow-up studies. In pretest-posttest studies, a measurement obtains from the participants then intervention study implement. After the intervention study complete, a second measurement obtain using the same measurements to understand whether there are any changes in the participants (23). In this study, the third measurement was also taken one month later for follow-up study after completing the group work. Thus, if there is a change before and after the intervention, it is tested whether this change is permanent or not.

Sample

This study was conducted with 43 male substance users who were directed to the probation services due to the illegal substance use behavior. While recruiting participants in the study, the condition that an illegal substance was detected in urine tests by Amatem was sought. Individuals who had cognitive impairment that obstacle for the continuation of group work, who had active psychotic symptoms and who could not read and write in Turkish were not involved in the group work. Four groups were constituted with at least 10 participants per group from 43 participants .

Measures

Socio-demographic Information Form: Socio-demographic information form consist of 24 questions which was prepared by the researcher. In addition to demographic questions such as age, marital

status, education level, the form included some psychosocial questions related to substance use treatment, substance use risk factors, duration of substance use or type of substance use.

Treatment Motivation Questionnaire: The Treatment Motivation Questionnaire (TMQ) is a 5-point Likert-type scale consisting of 26 items. It was developed by Ryan et al. (1995) and has 4 subscales name as Extrinsic Motivation (EM), Intrinsic Motivation (IM), Confidence-in-Treatment (CT) and Interpersonal Help Seeking (IHS) (9). According to the psychometric study results of the scale, Ryan et al. (1995) found that the internal consistency for the subscales ranged from 0.70 to 0.98 and the construct validity of the scale was acceptable (9). The Turkish adaptation study of the scale was conducted by Evren et al. (2006) and it was found that the internal consistency for TMQ was 0.84, and the internal consistency for the subscales ranged from 0.42 to 0.91. It was found that the item total correlation of the scale was significant (24). In the current study, the internal consistency for the TMQ scale was good ($\alpha=0.90$).

Intrinsic Motivation: Intrinsic Motivation was measured by the Intrinsic Motivation (IM) subscale of TMQ. It has 11 items. This scale measures the motivation of the individual regarding the participation to the treatment and treatment compliance. In addition, it evaluates intrinsic motivational factors such as guilt and shame which may prevent continuing treatment (9). In this study, the internal consistency for the IM was good ($\alpha=0.92$).

Extrinsic Motivation: Extrinsic Motivation was measured with the Extrinsic Motivation (EM) subscale of TMQ. The scale is measured by four items. EM evaluates potential external factors such as the individual's demand for continuing the treatment and participation in treatment (9). In this study, the internal consistency for the EM was good ($\alpha=0.65$).

Confidence-in-Treatment: Confidence in treatment was measured by the Confidence-in-Treatment (CT) subscale of TMQ. The scale consists of 5 items. The scale measures the expectation and confidence of the individual regarding the course and outcomes of treatment (9). In this study, the internal consistency for the scale was acceptable ($\alpha=0.52$).

Interpersonal Help Seeking: The interpersonal help seeing was measured by the Interpersonal Help Seeking (IHS) scale which is one of the subscale of TMQ. The scale consists of 6 items. The scale measures the individual's motivation to share with others and to receive support from others regarding the compliance, expectation and continuing treatment (9). In this study, the internal consistency of the scale was good ($\alpha=0.84$).

The General Self-Efficacy Scale (GSF): The General Self-Efficacy Scale was developed by Sherer et al. (1982). It is a self-assessment scale with 23 items (25). The scale, originally developed as 14-point Likert type, then it was changed to 5-point Likert type. The scale has two subscales, which are named as General Self-Efficacy and Social Self-Efficacy. The first psychometric study of the scale was performed by Sherer et al. (1982) (25). Accordingly, the internal consistency for the GSF is 0.86, and the explained variance ratio was 16%. Internal consistency of Social Self-Efficacy Scale was 0.71 and its explained variance ratio was 8.5%. The construct validity study of the scale was conducted with 6 different personality scales and it was stated that the construct validity correlation coefficients were acceptable. The Turkish adaptation study of the scale was performed by Yıldırım and İlhan (2010), accordingly the internal consistency for the scale was 0.80 and the test-retest reliability was calculated as 0.69 (26). The validity study of the scale was conducted with Self-esteem Scale, Learned Resourcefulness Measure, Beck Depression Scale, and correlation coefficients were calculated as 0.48, 0.57, -0.30, -0.49. In current study, the internal consistency for the GSF was good ($\alpha=0.87$).

Procedure

First of all, social workers and psychologists who were working in Ankara Probation Services (APS) did 3 deeply individual interviews with substance users who were directed to the probation services due to illegal substance use. Individuals who were found to be eligible to participate in the substance addiction treatment program by psychologist and social workers and the substance users who were found to have drug metabolite in their urine test were recruited in the group works. The group work process was conducted by a psychologist (Ph.D.) and a social worker (Msc.) who trained of the Cigarette, Alcohol and Drug Dependence Treatment Program (SAMBA). Participants who did not participate in the study for 2 consecutive sessions were excluded from the group study. Therefore, group work started with 43 participants and ended with 35 participants in five months.

SAMBA group work was used for psychosocial intervention program. SAMBA was developed by Ögel et al. (2011), the purpose of the SAMBA is to inform substance users about alcohol and substance use, to provide motivation for change and to increase the compliance of substance users with treatment in quitting the substance (27). The program is mainly focused on Cognitive Behavioral Therapy. At the same time, Dialectical Behavior Therapy and Motivational Interview techniques were used to development of the program. SAMBA consists of 15 sessions. It is mandatory to implement the first ten sessions. The implementation of the last five sessions is the practitioner's choice, depending on the dynamics of group participants. In this study, the first 10 mandatory sessions of the program were implemented. Before starting the study, the purpose of the group intervention study was explained to the participants and the informed consent form was given to the participants who agreed to participate in the study. Before starting the study, the permissions were obtained from the authors who conducted the Turkish validity and reliability study of the scales. The permission for implementations was obtained from Ministry of Justice and the study was approved by the Hacettepe University Research Ethics Committee.

The study was carried out in three stages. The scales were implemented to the participants before starting the group work (pretest). Two weeks later, group work begun and 10 sessions were held for 90 minutes in every 15 days. The group intervention process was completed in five months. After five months, the scales were redistributed to the participants and a second measurement was obtained (posttest). One month later the second implementation, the scales were implemented for the third time in the sixth month (follow up). Group intervention process is detailed in Figure 1.

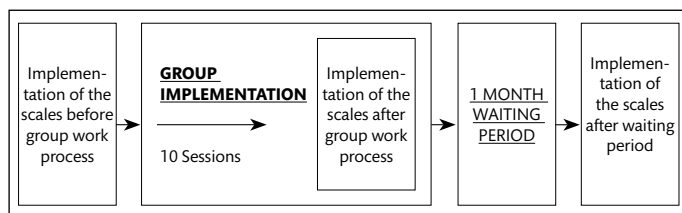


Figure 1. Group Implementation Process

Statistical Analysis

In this study, the total scores of the scales were converted into "z" score to determine whether the data show normal distribution and it was understood that the data showed a normal distribution. The mean and standard deviation scores of the total scores of the scales were calculated which obtained from the pretest-posttest and follow-up implementations. The Pearson Product Moment-Correlations were conducted to examine the relationship between the total score of scales. Wilcoxon Signed Ranks

Tests were conducted to determine whether the change between the pretest-posttest and follow-up study total scores were significant. All statistical analyses were performed using SPSS version 20.

RESULTS

Socio-Demographic and Psychosocial Features of Participants

The average age of the participants was 34.44. Majority of the participants (41.9%) were primary school graduates, 55.8% of them had a job and 44.2% of the participants' monthly income was 1001-2000 TL. 58.1% of the participants involved in a criminal behavior, 30.2% of their family members had a criminal record. 39.5% of the participants had self-harm behavior and 27.9% of them attempted suicide at least once in a lifetime.

The average age of the participants to start the substance was 19, and the duration of using the substance was 125.55 months (approximately 5 years). 20% of the participants used at least one substance in the last month and 21.7% of them used at least one substance in 2-5 months. 58% of the participants use more than one substance regularly. In addition, 39.5% of them were alcohol user, 97.7% cannabis, 32.6% ecstasy, 20.9% cocaine, 14% crack cocaine and 18.6% heroin users. 25.6% of the participants' family members had substance use behavior and 76.7% of them had substance user friends.

Univariate and Bivariate Correlations

According to the results, extrinsic motivation was associated with intrinsic motivation ($r=0.70$, $p<0.01$) and interpersonal help seeking behavior ($r=0.70$, $p<0.01$). There was a significant but moderate correlation between intrinsic motivation and self-efficacy ($r=0.39$, $p<0.05$). It was not found a significant relationship between intrinsic motivation, confidence in treatment and interpersonal help seeking. In addition, a moderately positive correlation was found between self-efficacy and extrinsic motivation ($r=0.34$, $p<0.05$) and confidence in treatment ($r=0.36$, $p<0.05$) (Table 1).

Table 1. Bivariate Correlation and Descriptive Results

	1	2	3	4	5
1. Intrinsic Motivation	1				
2. Extrinsic Motivation	0.70**	1			
3. Interpersonal Help Seeking	0.70**	0.50**	1		
4. Confidence In Treatment	0.09	-0.13	-0.29	1	
5. General Self Efficacy	0.39*	0.34*	-0.47	0.36*	1
M	33.67	12.42	15.93	17.41	53.02
SD	12.47	4.25	6.12	3.87	7.77
Min.	11	4	6	9	38
Max.	55	20	3	25	78

Not. M = Mean, SD = Standard deviation, Min = Minimum value, Max = Maximum value. * $p<0.05$; ** $p<0.01$; *** $p<0.001$

Descriptive Results for Pretest-Posttest and Follow-up Study

Descriptive results of the participants' scores from the pretest, posttest and follow-up studies are shown in Figure 2. The total score averages of IM changed before and after implementation. Accordingly, the IM score of participants' ($M=33.67$; $SD=12.14$) before the group work increased in the posttest study ($M=39.4$; $SD=13.13$). In addition, according to the results of the follow-up study conducted 1 month later, it was observed that the participants maintained this increase ($M=39.25$; $SD=8.87$). This

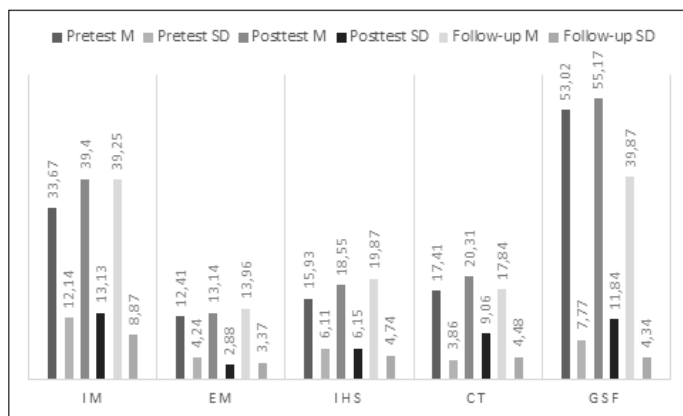


Figure 2. Change in the Pretest, Posttest and Follow-up Study
Note: IM = Intrinsic Motivation, DM = Extrinsic Motivation, IHS = Interpersonal Help Search, CT = Confidence in Treatment, GSF = General Self-Efficacy Scale, M = Mean, SD = Standard Deviation.

result indicates that group intervention study with substance users increases substance user's intrinsic motivation. Posttest scores from EM (M=13.14; SD=2.88) were higher than pretest scores (M=12.41; SD=4.24). There was no significant increase in follow-up study. There was an increase in total posttest score of IHS (M=18.55; SD=6.15), and a one-point increase was observed in the follow-up study (M=19.87; SD=4.74). Group intervention study increased the participants' confidence in treatment. The mean scores of the participants from CT in the pretest (M=17.41; SD=3.86) increased in the posttest study (M=20.31; SD=9.06). However, it was observed that the scores obtained from CT decreased in the follow-up study (M=17.84; SD=4.48). Finally, it was observed that the average of total score of participants received from the GSF increased in the posttest study (M=55.17; SD=11.84) compared to the pretest study (M=53.02; SD=7.77), but one month later self-efficacy score decreased dramatically (M=39.87; SD=4.34).

Results on the Effect of Group Work on Treatment Motivation

Firstly, the total scores of IM pretest-posttest, posttest-follow up study

were examined (Table 2). Accordingly, it was observed that there was a significant increase in favor of the posttest in terms of the IM scores of the pretest-posttest of participants (z=-2.52; p=0.01). Accordingly, the intrinsic motivation of the participants increased significantly after the group intervention study. In addition, it was observed that there was no significant difference between the posttest and follow-up study of IM (z=-0.66; p=0.59). This result indicates that the participants keep their intrinsic motivation even after the group work study completed.

There was no significant change in the pretest and posttest score of EM (z=-0.98; p=0.32). In the follow-up study performed one month later, there was no significant change in the extrinsic motivation of the participants (z=-1.194; p=0.23). This result indicates that the group intervention study do not result a significant change in the extrinsic motivation of the participants (Table 3).

As a result of the analysis to understand whether there was a significant change in the interpersonal help seeking behavior of the participants, it was understood that there was no significant increase between the participants' IHS pretest and posttest scores (z=-1.81; p=0.07). There was no significant change in score of IHS posttest and follow-up study (z=1.53; p=0.12).

It was found that the group intervention work significantly increased participants' confidence in treatment (Table 5). According to this result, there was a significant increase between the participants' pretest and posttest scores of CT (z=-2.16; p=0.03), but in the follow-up study conducted after 1 month, the confidence in treatment of the participants decreased (z=-2.02; p=0.04).

As seen in the Table 6, the participants' General Self-Efficacy Scale posttest scores increased (M=55.17; SD=11.84) but this increase was not statistically significant (z=-1.01; p=0.30). However, there was a significant difference between the General Self-Efficacy Scale posttest and follow-up study scores in favor of the follow-up study (z=-4.65; p<0.001). According to this result, the self-efficacy perceptions of the participants decreased after the posttest study (M=39.87; SD=4.34).

Table 2. Results of Pretest-Posttest and Posttest-Follow up Study of Intrinsic Motivation

	Pretest - Posttest					Posttest - Follow up				
	N	Mean Rank	Sum of Rank	z	p	N	Mean Rank	Sum of Rank	z	p
Negative Rank	7	17.07	119.50	-2.52	0.01**	18	13.78	248.00	-0.66	0.5
Positive Rank	24	15.69	376.70			11	172.30	187.00		
Equal	4					3				
Total	35					32				

*p<0.05; **p<0.01; ***p<0.001

Table 3. Results of Pretest-Posttest and Posttest-Follow up Study of Extrinsic Motivation

	Pretest - Posttest					Posttest - Follow up				
	N	Mean Rank	Sum of Rank	z	p	N	Mean Rank	Sum of Rank	z	p
Negative Rank	14	240.0	17.14	-0.98	0.32	9	139.5	15.5	-1.94	0.23
Positive Rank	10	355.0	17.35			18	238.5	13.25		
Equal	1					5				
Total	35					32				

*p<0.05; **p<0.01; ***p<0.001

Table 4. Results of Pretest-Posttest and Posttest-Follow up Study of Interpersonal Help Seeking

	Pretest - Posttest					Posttest - Follow up				
	N	Mean Rank	Sum of Rank	z	p	N	Mean Rank	Sum of Rank	z	p
Negative Rank	11	144.50	13.14	-1.81	0.07	9	145.50	16.28	-1.53	0.12
Positive Rank	19	320.50	16.87			20	288.50	14.43		
Equal	4					1				
Total	34					30				

* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$ **Table 5.** Results of Pretest-Posttest and Posttest-Follow up Study of Confidence in Treatment

	Pretest - Posttest					Posttest - Follow up				
	N	Mean Rank	Sum of Rank	z	p	N	Mean Rank	Sum of Rank	z	p
Negative Rank	11	160.0	14.55	-2.16	0.03*	17	281.5	17.15	-2.02	0.04*
Positive Rank	22	401.0	18.23			11	114.5	10.41		
Equal	2					3				
Total	35					31				

* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$ **Table 6.** Results of Pretest-Posttest and Posttest-Follow up Study of General Self-Efficacy Scale

	Pretest - Posttest					Posttest - Follow up				
	N	Mean Rank	Sum of Rank	z	p	N	Mean Rank	Sum of Rank	z	p
Negative Rank	13	16.04	208.50	-1.01	0.30	29	15.50	434.0	-4.65	0.000***
Positive Rank	19	16.82	319.50			1	1.0	1.0		
Equal	3					3				
Total	35					33				

* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$

DISCUSSION

In this study, it is examined the effect of group intervention works on motivation of substance users towards treatment (intrinsic motivation, extrinsic motivation, interpersonal help seeking, confidence in treatment) and their self-efficacy. The most basic requirements of the treatment are the individual's motivation and his/her beliefs in his/her ability to quit the substance. In particular, intrinsic motivational dynamics have critical role for positive outcome of the treatment. Low motivation is an important obstacle for the substance user to comply and continue the treatment (9). Studies on the subject point out that as the individual's motivation increases, the effect of treatment increases (28). According to the results of the SAMBA group work with 214 substance users, Ögel et al. (2016) found that the individual's motivation to quit the substance was important for completing the group work. It was also found that the participants' motivation for quitting increased even after the group work had ended (21). In this study, I found that group intervention work increased the intrinsic motivation of the substance users, and this motivational process continued in the one-month follow-up period after the completion of the group work. In the light of these findings, it can be claimed that group works effectively guide addiction treatments to the right path while helping substance users increase their intrinsic motivation and autonomy (29).

Although the intrinsic motivational process is more effective than the extrinsic motivational process in individual's desire to quit the substance, some external factors such as pressure from social environment like family and friends, and experience of penal problems due to substance use can have similar protective outcomes (11). Even though it has been

shown in this study that there is a relatively high correlation between intrinsic and extrinsic motivation, but group intervention work did not affect individuals' extrinsic motivational processes. Aldemir et al. (2018) revealed similar results in their study with substance users of the probation system. Accordingly, they observed no significant change in the extrinsic motivational processes of the substance users who were part of either the substance addiction group work or the motivation-oriented group work (22). According to Miller and Rollnick (1995), the judicial process presents an important external motivational factor for quitting the substance (30). Although group participants in this study were on probation and involved in psychosocial works as part of the judicial punishment, there was not enough motivational drive for them. This may be because SAMBA group work mostly focuses on intrinsic motivational processes rather than the extrinsic ones. Intrinsic motivation represents the autonomy of the individual and it stems from preferences, values and aspirations. On the contrary, external motivation stems from external pressures such as individual's family, friends and other extrinsic factors. Being involved in the judicial system may have damaged the participants' sense of autonomy causing some psychological resistance.

Group works are one of the most effective methods in substance use treatment. With this method, participants are encouraged to share their experiences and to support each other. In group works involving substance users, the goal is to discover alternative behavior patterns of the participants and to stimulate their inner focus (29). Studies focused on this subject reveal that as the intrinsic motivation increases, help seeking behavior increases (9). In this study, a significant relationship was found

between intrinsic motivation and interpersonal help-seeking behavior. However, this group intervention work did not result in a significant change in interpersonal help-seeking behavior of the participants. This indicates that participants are reluctant to share their experiences, concerns or feelings with other participants or in general with other people. On the other hand, it was found that intrinsic motivation and confidence in treatment increased after the group work but there was no significant change in participants' help seeking behavior. This is an indication of group work being beneficial and serving as a motivational support for the participants. This motivational support may have eliminated the need for participants to seek help from others. In the follow up period, there was no significant change in the help seeking behavior of the substance users. This may be due to the social dynamics of participants. When the social environment of the participants was examined, the criminal behavior (30.2%) and substance use behavior (76.7%) were high. This negative factors may have affected the participants' trust in people and in their social environment holding them away from seeking help.

Trust in treatment and continued participation are the motivational factors for the maintenance or the abandonment of the treatment. As confidence in treatment increases, motivation to quit the substance also increases resulting in a successful treatment process (31). Studies have shown that group works increase the motivation and compliance with treatment among substance users (32, 33). The results of this study are in agreement with the literature. Accordingly, the group work positively influenced the participants' confidence in treatment. However, once the group work is completed, the confidence in treatment tends to decrease. This result suggests that the need for treatment continues even after its completion. Therefore, it is important that the substance use treatment studies are continuous. It is also recommended that the treatment should not be terminated or paused without making sure that the substance user has quit the substance entirely.

Self-efficacy is the belief that individual can change his/her behavior or power in dealing with the problems. Self-efficacy, which is a cognitive process, is also expressed as the belief in individual's capacity to stay away from substances especially in risky situations (16). In substance use treatment process, coping skills and self-efficacy are important for the right course of the treatment. Self-efficacy is also an important mediator variable in predicting the substance use (17). In addition, one of the basic psychological needs that helps with the emergence of motivation is autonomy and competence. Intervention programs are effective in the development of not only the inner focus such as autonomy, but also the self-efficacy, as they offer optimal support in competence, learning new behaviors and coping styles (34). Studies emphasize the positive effect of group work on substance users' perceptions of self-efficacy even in the long-term period (35). However, in this study, it was found that the group work did not cause a significant change in self-efficacy of the substance users, in fact there was a significant decrease in self-efficacy during the follow up process. It is thought that this is due to the individual and social dynamics of the participants. It has been observed that 25.6% of the participants have substance use behavior among their family members and 76.7% among their friends. Living in an environment that enables substance use behavior and interacting with their social environment after the completion of the group work can negatively affect their belief and self-efficacy when it comes to staying away from substance.

This study has some limitations. First, substance use behavior differs by gender. Prior studies emphasize the differences in reasons for substance use between men and women (36, 37). However, this particular study was conducted with male participants and the potential results of the group intervention study in terms of genders were not evaluated. For this reason, it is recommended a study with female participants so we can report

on the results of group work with women. Also in this study, the follow up period was limited to one month. Due to this limitation in time, long-term behavioral changes could not be examined. However, substance use behavior is a complicated behavior and there are many factors that may affect the motivation of the individual to quit. In addition, the risk of relapse is at the highest level in the first three months, and it declines thereafter (38). For this reason, it is recommended that the follow-up study period is kept more than one month and the changes observed in time are measured.

This study is one of the first studies conducted to evaluate the effectiveness of group works with substance users in Turkey. The number of studies assessing the effectiveness of group works with substance users, especially in the prison system, is very limited. Although group therapies have been a frequently used treatment method for substance users in the US since 1980s, the number of prospective studies in the last twenty years have been very limited even in the US (29). Motivational techniques have been studied only very recently in Turkey, therefore, the depth of findings obtained regarding motivational techniques in substance use treatment have been limited. For this reason, it is thought that this study will significantly contribute to the prevention and intervention of substance use literature in our country. It will also generate data for the intervention programs which aim to prevent recidivism and help those involved in prison system stay away from substance use.

As a result, group work with substance users increased their compliance with treatment. Especially, motivation and cognitive-behavior-based group works designed to decrease their desire to substance use, increase their motivation to quit, and strengthen their ability to cope with stress have increased participants' autonomy, intrinsic motivation and confidence in treatment. In summary, the group work positively influences the participants' feelings of autonomy and raises their intrinsic motivation, but fails to increase their extrinsic motivation. In addition, there is not a significant change in self-efficacy and interpersonal help-seeking behaviors.

Ethics Committee Approval: Before starting the application, the application permission from the General Directorate of Criminal and Detention Houses and the ethical committee decision was obtained from the Hacettepe University Non-Interventional Clinical Research Ethics Committee.

Informed Consent: Before starting the study, the purpose of the group intervention study was briefly explained to the participants and the informed consent form was given to the participants who agreed to participate in the study.

Peer-review: Externally peer-reviewed.

Conflict of Interest: There is no conflict of interest.

Financial Disclosure: There is no financial support.

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