

**Family and Cognitive Integrative Treatment to Prevent Relapse of Substance Abuse among Adolescents in Indonesia**

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**Abstract**

Substance-dependent adolescents tend to experience relapses despite the psychological and medical treatment they received. Factors associated with the relapses include ineffective therapy, lack of post-treatment family support, and inability to prevent future relapses. This study investigates the effectiveness of the Family-Cognitive Integrative Therapy (F-CIT) model in preventing relapses of substance abuse among adolescents. There were ten participants randomly allocated into two groups. The experimental group received F-CIT, and the control group received no treatment. The Adolescent Relapse Coping Questionnaire used to measure the effectiveness of F-CIT model. The results showed that F-CIT model improves the adolescent ability to prevent relapses and remain abstinence after treatment. Thus, the additional of F-CIT model is sufficient to prevent relapses and improve abstinence against substance abuse among adolescents.

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**1. Introduction**

Substance abusers have become a problem in various countries, including in Indonesia. The prevalence of substance abuse tends to increase in various groups. Substance-dependent people originated from diverse economic classes and age groups with adolescents as the largest substance users compared to other age. The National Narcotics Agency of Indonesia (Badan Narkotika Nasional, 2016a) showed an increase in the prevalence of adolescent substance abuse from year to year. Comparing to an estimate of 5 million people or 2.76% of the total population in Indonesia identified as substance abusers.

Furthermore, the trade and distribution of the substance illegally in the community led to a high incidence rate of a substance abuser and difficulties in reducing the prevalence. There are some factors associated with substance abusers, namely legal and security problems, economic problems, and physical and mental health problems. In addition, this issue reflects in the child prisons in Indonesia where most inhabitants are adolescents involved in a substance abuse case.

The complexity of treatment substance abusers due to social and personal factor. Substance abusers are mono substance abuse and multiple substances abuse (Antonio et al., 2017). Even among them have comorbidity with other psychological problems such as sexual addiction (Elisabeth, Inga, & Claudia, 2014), problematic internet use (Biolcati, Mancini, & Trombini, 2017; Golpe, Gomes, Brana, Varela, & Rial, 2017), and psychiatric disorder (Weaver, 2018). The comorbidity and the level of the substance abuse intensity request the specifics of the treatment strategy.

Many government and private institutions provided treatment for adolescents through prevention programs, therapies, and rehabilitation programs. For 2015, as many as 38 thousand addicts and victims of substance abuse in all regions of Indonesia received treatment where 70% of those who received treatments experience relapses (Badan Narkotika Nasional, 2016a; 2016b).

The primary cause associated with the relapses among abusers is the inadequacy of the treatment offered (Muttaqin, 2007). Moreover, low family support (Habibi, Basri, & Rahmadhani, 2016) and both the inability and unwillingness of individuals to stop using substances are related to the relapse rate among abusers. A lot of recovering abusers unable to overcome the trigger factors and they use the recurrent substance as a means to fill their spare time. Individuals with high levels of boredom tend to be substance abuse due to their weak mental condition (Weybright, Caldwell, Ram, Smith, & Wegner, 2015)

Substance abuse adolescents can receive treatment through inpatient therapy or outpatient therapy. Inpatient therapy is a treatment for patients with severe addiction, psychiatric or medical problems, and addictive behaviors that require a structured environment. The Therapeutic Community (TC) is an inpatient therapy model that widely accepted in America (National Institute on Drug Abuse, 2014). While the outpatient therapy often recommended for adolescent suffered from substance-dependency in recreational and situational usage patterns with mild to moderate levels of addiction, without any additional mental health problems and has a supportive environment for the recovery process (Shah et al., 2015).

Substance abusers among adolescents prefer to take therapy with outpatient settings for its flexibility and efficiency in terms of time and budget. Through outpatient therapy, clients remain in work or school and keep their daily routines as usual. Winters, Stinchfield, Opland, Weller, and Latimer (2000) stated that there was no difference in effectiveness between inpatient therapy and outpatient therapy. Both of the therapeutic settings provide the same results of the recovery process from substance-dependency among adolescents.

Furthermore, cognitive-behavioral is an approach widely used in treating substance abuse. The treatment models developed based on cognitive-behavioral approaches to treat substance abuse are cognitive coping skills training (Monti, Kadden, Rohsenow, Cooney, & Abrams, 2002) and relapse prevention (Marlatt & Donovan, 2005). Cognitive coping skills training is a model of care individuals improve self-control to not use the addictive substances in uncertain situations (Marlatt & Donovan, 2005). While relapse prevention is a model of care for individuals, who achieve and maintain the abstinence towards the addictive substances, both models shared conventional techniques and focused on the individual.

However, the individual approach is inadequate to prevent relapse and attain abstinence among the substance abuser. Many professionals recommended social control as a possible way to strengthen the individual treatment since substance abuse is a problem beyond the individual, but more of shared the difficulties in the family too (Smith & Estefan, 2014). Therefore, family involvement is necessary to help adolescents overcome resistance to addictive substances, notably to help reduce relapses (McKiernan, Shamblen, Collins, Strader, & Kokoski, 2013). In Indonesia, parents often unknown about their adolescent kids suffered from addiction. They have pivotal roles in strengthening their kids' endurance, developing appropriate coping strategies, and helping them to overcome their kids' life problems. Family involvement is known to reduce relapse rates later in adolescent suffered from substance abuse who undergo outpatient therapy (Fiorentine & Anglin, 1996).

The family involvement is expected to develop healthy and open interactions between family members and facilitate the control of children in maintaining the abstinent. From various techniques of treatment for substance abuse, those involving family showed higher effectiveness compared to other therapeutic methods (Tanner-Smith, Jo-Wilson, & Lipsey, 2013). The family involvement is essential across the recovery process, including during the process and post-therapy for adolescents to recover from their substance abuse (Habibi et al., 2016).

In line with the culture in Indonesia, the family is an essential supportive element contributes to the success of therapy. Therefore, the involvement of the family in the therapy process can increase adolescent responsibility in solving problems and provide a supportive network for adolescents. The Family and Cognitive Integrative Treatment (F-CIT) is a treatment model to prevent relapse for an adolescent who suffered from substance abuse. The F-CIT model developed based on cognitive behavior therapy (CBT) approach consist of individual sessions and family sessions. The key indicator in this model is the improvement of openness and togetherness between the adolescents and their parents in solving problems about substance abuse. Based on the rationale above, this study investigates the effectiveness of the F-CIT in

increasing the ability of adolescents suffered from substance abuse to prevent relapses and attain abstinence after treatment.

## **2. Methods and materials**

### **2.1 Study design**

A between-group design involving two groups, namely the treatment group and the control group. Participants were randomly allocated to each group before the treatment was carried out. The pre-test was held a week before treatment and for the post-test taken two weeks after the treatment.

### **2.2 Participants**

The participants of this study were people age 16-21 years old with recreational and situational usage patterns of an illegal substance and mild to moderate addiction levels based on the Addiction Severity Index (ASI) assessment (McLellan, Luborsky, O'Brien, & Woody, 1980). They have never received any therapy or treatment related to substance abuse. There were ten adolescents consent to participate in this study. They randomly divided into two groups, with five participants in the experimental group and the other five allocating into the control group who obtain no treatment. The participants are involved in groups as users of addictive substances. We recruited the participants through an addictive user gangster group in the Malang City of Indonesia. Before their participation, each participant expressed their willingness and provided informed consent to participate in this research. In addition, all participants were physically fit and had no history or comorbidity of psychotic disorders.

### **2.3 Measurements**

The Addiction Severity Index (ASI; McLellan, Luborsky, O'Brien, & Woody, 1980) used to detect the severity of the participant's addiction level. ASI is a semi-structured interview guide that measures seven individual aspects, such as medical status, employment and support, drug use, alcohol use, legal status, family status, and psychiatric status. The interview was conducted for 1 hour to gather information mentioned before for the past a month.

The Adolescent Relapse Coping Questionnaire (ARCQ; Myers & Brown, 1996) used to measure the effectiveness of treatment provided for the participants. ARCQ is an instrument for measuring the participant's ability to solve cognitive and behavioral problems, implement critical thinking and coping with abstinent-focused behavior. ARCQ is a self-report questionnaire consisting of 34 items in a 7 point Likert scale with reliability from 0.78 to 0.82 (Myers & Brown, 1996).

## 2.4 The F-CIT Procedure

The F-CIT is a treatment model for an adolescent who involved in substance abuse, both for those with single substance and multiple-substance users. The F-CIT is an eight-session therapy structured as individual brief therapy combined with a meeting session with parents.

Furthermore, some cognitive-behavioral therapy (CBT) techniques must be given to gain insights, change behavior, and regain control of themselves (Mannix et al., 2006). CBT also to replacing beliefs that contribute to self-defeating behaviors with beliefs associated with self-acceptance and problem solving constructive (McLeod, 2009). The techniques used in the F-CIT are (1) cognitive restructuring, (2) self-management, (3) self-monitoring, (4) self-talk, and (5) coping training skills.

The F-CIT was developed with the Research and Development procedure (Borg & Gall, 2003), which formulated with the evidence-based treatment and bestowed to the context and treatment time requirements, and carried out trials on limited cases. A psychologist and a caregiver of substance abuse reviewed the model of F-CIT.

The inter-rater review of the model indicates that there was consistency between the two reviewers ( $Kappa = .62, p = .000$ ). The F-CIT model includes eight sessions; each session carried out within 90 minutes once a week as follows:

Session 1. Therapy begins with formulating targets and goals of therapy, affirming the commitment of the participants, and introducing self-reports that must be filled by participants every day.

Session 2. Identify the habits and mindset of the participants regarding substance use. In this session, a reconstruction of the participants' mindset related to substance abuse. During the reconstruction process, the participants learned to control himself over substance abuse. The participants began to learn self-management by making a target during the time between therapies.

Session 3. The family is involved in the therapy sessions to encourage them to fully involved in the participants' recovery process where they can receive, help, and become a control for the participants.

Session 4. The participants applied self-talk, which aims to improve self-motivation or as a reminder to avoid specific situations. Positive jargon can be a simple sentence or word phrase made by participants used when they faced a specific stimulus to use the substance.

Session 5. The therapist and participants evaluate the change of mind and set targets for achievement that must be done by the participants both long and short term. The participants

made a plan about their future, the purpose of their life, starting from a span of 1 month, six months, one year, three years, and five years after therapy.

Session 6. The participants learn to prevent relapses is essential in this series of therapies. The therapist helps the participants to recognize early warning signs of relapses, increase internal awareness (emotional and cognitive), and external awareness (situations and objects) that were previously a stimulus associated with substance abuse.

Session 7. The participants recognized and understood various situations that had previously been the trigger to consume substances. The participants also know several ways to face risky situations. Both participants and therapist discuss the possibilities that occur related to risk stimuli and carry out simulations on how to handle it properly.

Session 8. The family members were involved in this session. They discuss the progress achieved by the participants and the role of the family in its achievement. After this series of therapies completed, the family always commits to provide support and serves as a warning alarm to supervise the participant's behavior in the future.

## **2.5 Data Analysis**

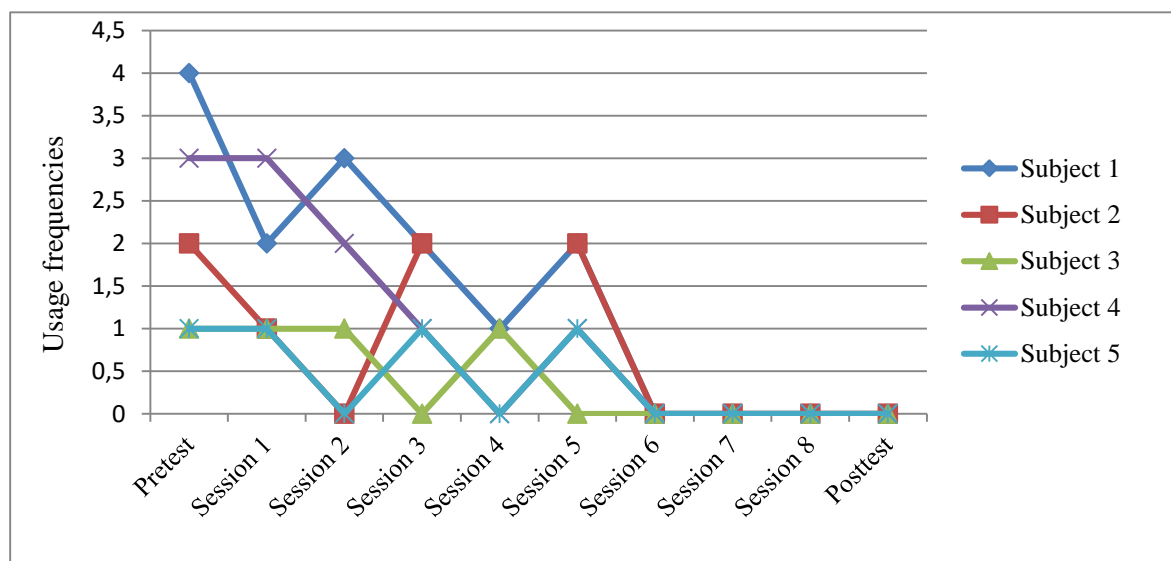
The data analyses based on the pretest and posttest scores from the ARCQ scale. Non-Parametric analysis was carried out due to the small number of participants (Neideen & Brasel, 2007). The Wilcoxon test used to measure the differences between the pretest and posttest score of each group, while the Mann-Whitney test used to investigate the comparisons between the control group and the experimental group.

## **3. Results**

The results of the baseline analysis from the pretest score in both groups showed that the experimental group could prevent relapses ( $M = 93.60$ ,  $SD = 7.63$ ) compared to the control group ( $M = 93.60$ ,  $SD = 378$ ).

Participants from the experimental group received treatment for eight sessions during the experiment. The development of each session is monitored, especially in terms of the frequency to use the addictive substances weekly.

They have used addictive substances in a week, and their use varies once to four times. Figure 1 showed the development of the usage of the addictive substances from session to session for the control group.



**Figure 1.** The frequency of Use of Substance in Experimental Groups

Figure 1 showed the development of substance use frequency by participants in the experimental group for ten weeks. The first week is the baseline, which indicated that all participants were using the substance in variance frequency. The second week until the ninth week is the eight therapy sessions. The final session is the end-line, which indicates that all participants stop to use the substance.

Based on the participants' report on each session of therapy, the frequency of addictive substances usage significantly decreased, and they managed to stop using the substance at the sixth session.

Furthermore, they can maintain to prevent substance use until the ninth week (end-line). The participants from the control group were not measured weekly, but in the end-line that all participants in the control group remain actively used the addictive substance.

In terms of frequency of substance use between the experimental group and the control group is different. The results of the Mann-Whitney test showed that there was a significant difference in the ability to prevent relapses between the experimental group and the control group ( $z = -2.61$ ;  $p = .009$ ).

The results showed that the experimental group scored higher on the ability to prevent relapses ( $M = 178.60$ ,  $SD = 8.44$ ) compared to the control group ( $M = 93.40$ ,  $SD = 3.36$ ). Therefore, the F-CIT considered effective in increasing the ability of participants to prevent relapses and attain abstinence.

#### 4. Discussion

This study showed that F-CIT is effective in increasing the ability to prevent relapses and increase abstinence among adolescents who suffered from substance abuse. Moreover, the F-CIT model subsequently decreased the use of addictive substances among adolescents.

On this research, we developed the treatment model based on the cognitive-behavioral approach combined with family involvement sessions to prevent relapses. This study indicates that the F-CIT was adequate to achieve abstinence and improve the ability to prevent relapse among adolescents who suffered from substance abuse. The F-CIT can be an alternative model of treatment for adolescents with substance abuse.

This study is analogous with the previous research that showed cognitive behavioral therapy was significantly effective to reduce substance addiction among adolescents (Waldron, Slesnick, Brody, & Turner, 2001; Waldron & Kaminer, 2004). Several studies also emphasize the clinical usefulness of the cognitive behavioral therapy to treat substance use among adolescents (Cecilia, Marques, Lucia, & Formigoni, 2001; Vaughn & Howard, 2004; Kaminer, Burleson, & Goldberger, 2002).

Treatment of substance abuse among adolescents is natural to achieve abstinence rather than maintaining abstinence and preventing relapses (Yang, Mamy, Gao, & Xiao, 2015). Nevertheless, relapse is a deterioration in addictive behavior after abstinence or the return of using the substance (Marlatt & Donovan, 2005) and it is a complicated challenge during the treatment of substance use (Witkiewitz & Marlatt, 2004). In substance abuse cases among adolescents, the commitment of parents to maintain relationships with their children who are abusing substances is pivotal. Once the parents showed promise, they provide adequate support for their children to improve their ability to control themselves against the addictive substances, and this is the core procedure in the F-CIT. Individuals achieved abstinence when they stopped using the substance for one month since their last use (Forray, Merry, Lin, Prah, & Yonkers, 2015). In this study, all participants had stopped taking substances before the therapy ended.

Despite the treatment model showing effectiveness in treating substance abuse among adolescents, this study had a lack of control of variables associated with the participants. Therefore, it potentially influenced the results of therapy since we did not strictly control interventions other than the treatment provided by the researcher. The follow-up has not been done to determine to what extent the effect of therapy remains in maintaining the abstinence among adolescents.



The other limitations of this study were carried out with an individual approach, in the form of treatment one by one in a limited time. The interaction individual with their peers who are abusing and addicting outside the treatment in the long term can affect the subject to recurrence. Strengthening the ability of individuals to maintain the results of treatment is necessary. This study is no analysis of the comorbidity as mediation or moderation variables for analyzing the effectiveness of therapy for subjects with mono substances abuse and multiple substances abuse. The analysis of comorbidity as mediation or moderation is relevant for the future study to find the type of treatment appropriately.

## **5. Conclusions**

The F-CIT with the cognitive-behavioral approach was able to improve the ability to overcome relapses and attain abstinence after treatment among adolescents who suffered from substance abuse. Furthermore, the recent research implies that therapists are required to involve their families to participate during the treatment process to ensure support and control towards the adolescents in preventing substance abuse.

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