The Outcome of Cognitive Behavioral Therapy Intervention on Depression in Adolescents

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Abstract: The main purpose of this study is to examine the effectiveness of cognitive behavioral therapy on reducing depression of adolescents in the city of Kerman, Iran. The instrument for data collection was CDI. Total number of samples were 76 adolescents and the age of the respondents was 13-17 years. There was significant difference in pre-test and post-test of CBT (t=13.65, p<0.05) showing the effectiveness of CBT therapy, that leads to a reduction of the depression score of participants in 8 weeks time. The findings from the present study reveal that CBT enables change in cognitive behavior and helps to avoid the problems of depression in girls adolescents.

Key words: Cognitive behavioral therapy (CBT), Depression, Adolescent, girls.

1. Introduction
Depression is among the most common mental disorders and often referred to as the common "cold" of mental illness. It is estimated that between 5% and 25% of the population experience depression at some point in their lives and 15% of severely depressed people will commit suicide in the world (Gollub and Hammen, 2002). During puberty, about 2% of 13-year-olds suffer from depression and on average, 17% at age 18 years in the world are similarly afflicted (Angold, 2002).

Depression in childhood and adolescence is among the most common and disabling disorders. It is reported that childhood depression ranges from 2% -6% among the school-age population and this may end up seriously affecting such children in their adult lives (World Health Report, 2001). Using the program for emotional disorders and schizophrenia (SADS) the current prevalence of depressive disorders is 2% (1.8% major depressive disorders, and 0.2% minor aged), living in cities and not housewives (Mohammadi, et al, 2006). Using the Disorder Statistical Manual-IV (DSM-IV) criteria and clinical interviews, the findings indicate that the prevalence of depression disorders is 9.2% (4.4% major depressive disorder, 3.9% minor depressive, and 0.8% dysthymia) (Noorbala, 2008).

Numerous studies have been conducted to estimate the rate of mental health disorders among Iranian. A study in the Northwest of Iran using face-to-face interviews conducted by psychiatrists revealed that, based on the DSM-IV, 9.7% of the 17 to 24-year-olds were diagnosed as having a mental disorder/ The number of cases is expected to increase with growing age, and women are twice likely to be diagnosed with a mental disorder than men (Fakhari et al, 2007).

Clinical depression has an indoubt difficult impact on the development trajectories of youth and adolescents. Despite this well-established reality and the current increase in depression treatment investigations, the evidence for particular treatment approach connecting antidepressant medicine or cognitive behavioral therapy recommend only modest optimistic effects achieved with a substantial
investment of resources. The exact advantages over placebo for either treatment alone have been modest in many studies and nonexistent in several studies. (Tads, 2004).

A literature review of epidemiological studies of adolescent psychological health provides a lot of support that depression, substance abuse, and suicide are among the three most prevalent causes of death in adolescents (Brookman, 2006).

Cognitive behavioral therapy for depression is a current focused, time-limited, collaborative approach. It emphasizes the significance of a careful considerate or functional psychoanalysis of cognitive and behavioral factors associated with primary symptoms. The CBT psychotherapist commonly aims to accomplish one or more of the followings: decrease depressingly distorted cognition, develop problem solving and coping skills and enhance the youth's participation in healthy, enjoyable actions. CBT treatments frequently consist of necessary skill-building sessions and optional modular sessions for particular problems. Studies have integrated variants of CBT, with some placing a larger emphasis on cognitive reorganization and others taking a more behavioral and modular skills education approach, such as the adolescent coping with depression classes (Clarke, 2005).

2. Previous research
Rohde (2006) found that CBT intervention was more effective for depressed Caucasian youth than a life skill control condition, whereas non-white adolescents had similar recovery rates across conditions. In addition, there is an evidence from another prevention of depression study to show that youth participating in CBT have been found to have significant reductions in their depressive symptoms when they entered the trial with a greater number of past psychiatric diagnoses, lower levels of depression, and suicidal ideation (Barbe, 2004).

Meta analysis has been shown to support the effectiveness of cognitive behavioral therapy (CBT) in treating childhood depression, with moderate to strong effect sizes compared with wait list control conditions and other treatments. In the CBT model, depression results from faulty interpretations of the environment and negative interactions with it. Treatment involves challenging negative cognitions and increasing adaptive behaviors. Cognitive behavioral skills include practicing positive attributions, accurate identification of feelings, monitoring and increasing self-reward, problem solving, social skills, and relaxation procedures (Asarnow, 2001).

3. Objective
The main objective of the present study is effectiveness of CBT in reducing depression among adolescents in Kerman, South East of Iran.

4. Method
4.1. Location and Respondents of the study
In this study, the sampling focused on depressed adolescents aged between 13 to 17 years. These adolescents were referred to psychotherapy clinics at different zones of Kerman province. Kerman is the most extended province of Iran and is geographically divided into different zones by the organization of urban planning and management. A method of multistage random samplingis used at the present study. Adolescents, whom were referred to health centers and conformed to selection criteria of this study were selected. Inclusion criteria for participants are as follow: (a) aged 15-17, (b) BDI score of 16 and more, (c) Diagnostic and Statistical Manual of Mental Disorders (DSM–IV; American Psychiatric Association, 1994). Criteria for major depression based on structural interview by two clinical psychologists, (d) completion of a pretreatment assessment. An exclusion criterion is including current psychiatric treatment (psychotropic medications, supportive group, and psychotherapy, currently practicing relaxation techniques).

25 samples from the reserved/waiting list of each clinic of the same zone choice at random. Therefore, the 125 cases selected from five clinics, one from each of the five. Each of the two groups (CBT and control) includes 62 samples.

4.2. Data collection
The data in this study collected by Beck Depression Inventory (BDI). BDI will take before start of treatment at the first stage to determine the level of depression score in adolescence (pre-test). At the second stage, the BDI used after period of 12 sessions in CBT treatment to determine the depression score of participants and uses the effectiveness of the method on reduction of depression in adolescents (Post-test). The BDI performed before start of therapy in the pre-test stage. The period of CBT therapy conducted in parallel over a period of 12 sessions. The Cognitive Behavior Therapy program arranged into two sessions per week (one and a half hours). The planning was taken eighteen hours in twelve sessions over five weeks at the treatment period. After the 12th session period of treatment, BDI (post-test) conducted to estimate the effectiveness of therapy on the participants.

4.3. Measures
The CDI (Kovacs, 1983) is a self-rating scale modeled on the BDI (Beck Depression Inventory) and adapted for young people 7-17 years of age. The depressive symptoms assessed include cognitive, affective, somatic and behavioral aspects and the 27 items are scored from 0 to 2, where 0 means the symptom is not present, 1, the symptom is present and mild, and 2, the symptom is present and marked. The clinical / categorical approach is evidenced in that it covers most of the symptoms of major and minor depression according to the DSM IV (American Psychiatric Association, 1994). The CDI takes about 10-20 minutes to fill in and contains five subscales: Negative Mood, Interpersonal Problems, Ineffectiveness, Anhedonia and Negative Self-esteem.

4.4. Data analyses
Data were coded and entered into the Statistical Package for Social Science (SPSS version 16). This program was used for
analyzing data for specific aims of the study. The analysis
began with a report of the characteristics of the participants in
detail. Descriptive statistics such as frequency, percentage,
means and standard deviations were used to characterize the
demographic variables, the rate of depression, subscales in
groups and variables. Comparison Analyses: The paired test
(Pre and post) were used for testing the difference between
dependent groups in experimental groups.

4.4. Adolescent's background
The total number of respondents in the present study is
76 adolescent samples. The age range of the adolescents was
from 13 to 17 years, which was divided into three
categories: 22.7% (13-14), 33.9% (15-16), and 45.4% (17).
The mean age of the whole sample was 15.3, and the
standard deviation of 1.43 indicated a moderate variation in
age among the children.

4.5. The levels of depression in respondents
Depression was measured using CDL comprising 27 items
with three choices scored (0-2). Based on this data
collection, respondents' levels of depression were those of
mild depression. The normal score in depression was
(Normal=20) (Kovacs, 1983). It indicated more than half
(57.86%) gained a normal score at the post test.

4.7. Analysis on the differences between pretest and
posttest in CBT
The result of the paired sample t-test (Table1) illustrated
the pre-test score for CBT group (27.49, SD=4.87) while
post-test score had mean value of (17.48, SD=3.59). Based
on the above data, the mean score for the post-test of CBT
group was 17.48 lower mean value in pre-test indicated that
the depressed score decreased in post-test of CBT than Pre-
test. The t-value, degree of freedom, and the two –tail
revealed significant difference (p<.05) between the mean
scores of the pre-test and post-score which suggests that
CBT program lead to decreased depressed score in girls
adolescents. Thus, the result showed that there was a
significant difference in mean value (t=13.65, p<.05)
between the pre-test and the post-test score of CBT
group. Effect size is a technique used to assess the
magnitude of difference between two groups. Eta squared
for paired sample t-test can be obtained using the following
formula:

\[ \eta^2 = \frac{t^2}{t^2 + N - 1} \]

Cohen (1988) classifies .01 as a small effect, .06 as a
medium effect and .14 as a large effect. The eta-squared
obtained was \( \eta=1.3 \) indicated that the mean difference
between two measurements is large.

| Table 1. Paired sample t-test of female in CBT. |
|-------------------------------|-----------|-----------|-----------|-----------|
| Test                          | group     | n         | mean      | SD        | T         | P         |
| pre-test                      | female    | 76        | 27.49     | 4.87      | 13.65     | .000      |
| post-test                     |           | 76        | 17.48     | 3.59      |           |           |

p<.05

5. Results
more than half (57.86%) were normal in post test. The pre-
test score for CBT group (27.49, SD=4.87) while post-test
score had mean value of (17.48, SD=3.59). Based on the
above data, the mean score for the post-test of CBT group
was 17.48 lower mean value in pre-test indicated that the
depressed score decreased in post-test of CBT than Pre-test.
Thus, the result showed that there was a significant
difference in mean value (t=13.65, p<.05) between the pre-
test and the post-test score of CBT group.

6. Discussion
The results from hypothesis of this study indicated that
there was significant difference in mean scores of CBT
between pretest, post test and follow-up assessments of the
experimental groups. The outcome of this research
demonstrated the potential efficacy of Cognitive Behavioral
Therapy for the treatment of depression in adolescents. These
findings supported the effectiveness of CBT intervention for
decreasing depression. Consequently, results indicated that participants who received CBT for
depression obtained greater decrease in mean scores of
depression from pretest to post test, and follow-up. This
result was supported by the findings of a meta-analysis
which examined the efficacy of CBT therapy including
reviewed many papers and reported that group Cognitive
Behavioral Therapy is one of the most effective treatments
for depression, comparable to medication and other forms
of psychotherapy for depression including individual CBT
(Oei & Dingle, 2008). This review demonstrated that group
CBT is an effective treatment for depression with the
average effect size of 1.11 to 1.30 indicating that the
average person in a group Cognitive Behavioral Therapy
condition was over one standard deviation more improved
than the average person in the control condition by the end of treatment (Oei & Dingle, 2008).

7. Conclusion

This research is limited to depression. Cognitive Behavior Therapy (CBT). The findings from the present study reveal that CBT method specifically avoids the problems of depression in adolescents by cognitive and behavioral programs. Thus, it is recommended that Iranian Ministry of Education supports and encourages the establishment of counseling centers in schools and other education centers, where counselors and clinical psychologists can help students treating their mental disorders and subsequently solving related academic problems. At the same time, knowledge gained from the present research can be conveyed by various means such as workshops, seminars, conferences, publications, and training programs. To control depression, there must be practical programs such as relaxation, mediation, individual, and group counseling, etc. These programs can help and support students and also increase their capabilities to perform better in school. Based on literature, this is due to the fact that youth with better mental health succeed in their education and work, more easily get married, and have useful relationship with their partner and other dependents.

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