

Full Length Research Paper

Comparison of efficiency of cognitive therapy and logo therapy on the depression rate of aged men

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In this paper, we compare the effectiveness of logo therapy (LT) and cognitive therapy (CT) in alleviating symptoms of depression. For this purpose 45 elderly men aged between 65 to 85 years who inhabit in nursing houses were randomly put into two experimental and one control group (n = 45). The experimental groups received techniques of cognitive and logo therapies for 10 treatment sessions, 75 min for each sessions per week. All depressed participants were assessed using the 15-question Geriatric depression scale (GDS-15) before and after the treatment and the results were analyzed by two sample t-test, ANOVA and Tukey test. The results indicated that there were significant differences between the experimental groups and the control group. Both CT and Logo therapy reduced symptoms of depression. Analysis of the results of Tukey test showed that CT had the most and the control group had the least depression and logo therapy was also effective in reducing the disorder. Based on the results we conclude that CT and Logo therapy can be effective non-pharmacological treatment options for reducing negative spontaneous thoughts and depression, and increase quality of life and psychosocial functioning.

Key words: Depression, cognitive therapy, logo therapy.

INTRODUCTION

Aging is a progressive state, beginning with conception and ending with death (Sherina et al., 2005) which is associated with physical, psychological and social changes (Prevc and Doupona Topic, 2009). The age of the world population is rapidly increasing in developed and developing countries (Papadopoulos et al., 2005). This is as a result of dramatic decline in mortality rates (increase in life expectancy) over the last 50 years and also sharp falls in birth rates (MohdSidik et al., 2003). It is

predicted that the ratio of the elderly in the world will increase from 10 to 14.2% in 2000 and 21% in 2025 and 2050 (Nanthamongkolchai et al., 2011). Iran is not an exception in these population changes, based on conducted statistics, the number of elderly will be about 12% in 2026 and it will reach to one third of country population in 2050 (Adib Haj Bagheri and Akbari, 2009). As a result, the study of the aging process and the elderly population, as the processes of the life cycle, is one of the main centers of attention of the social and government agencies, as well as of medical institutions in general. Aging is accompanied with many problems. One of the major disorders affecting the elderly, among others,

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is chronic mental illness. The problem of mental illness among elderly that is, depression, has grown significantly in the last years in both industrialized nations of the West and the developing countries of Asia, Africa and Latin America. Currently, depression is considered as a "disease of the century", and it deserves special attention. It is known that in the elderly population depressive conditions have peculiar clinical characteristics characteristics (Gazelle et al., 2004; Sherina et al., 2005). According to DSM IV, when the following conditions are met, the elderly is diagnosed with depression: when the elderly shows, at least for two weeks, one or both of the main symptoms of depression, that is depression mood and lack of interest, plus four or more symptoms such as insomnia or hypersomnia, significant increase or decrease in weight and appetite (Blazer, 2003), recurrent thoughts about death and suicide, feelings of worthlessness or hopelessness, feeling of guilt, avoidance of social interactions, psychomotor agitation and difficulty making decisions (Reynolds III et al., 2002). Numerous studies that measure the prevalence of depressed mood, and are performed, with different screening scales for depressive symptoms, suggest that the prevalence of depression among elderly people living in the community vary widely, from less than 1 to 35% (Frazer et al., 2005), which is associated with a decreased quality of life, increased physical and emotional suffering (Street et al., 2007), decreased cognitive, and social functioning (Fiske et al., 2009), and increased risk of death (Gallagher et al., 2009). Therefore it is worth noting that relation between physical and mental problems can result in vicious circle in which they intensify each other, which pushes the patients to sanitarium that they feel separation from family and friends and should accommodate themselves with a feeling that they must live only in the sanitarium. In these facilities, depression may increase temporarily due to chronic disease and to be witness of the infirmity of other residents and high level of mortality rate. Also, situation of the sanitarium and long-term stay may increase depression (PourEbrahim et al., 2007). In a nursing house study, researchers have estimated the prevalence of major depression and minor depression among elderly 14.4 and 17.0%, respectively (Thakur and Blazer, 2008). Despite the seriousness of this disease, major depression is under-recognized and under-treated (Le and Boyd, 2006). Although approximately two third of the patients with depression are treated successfully with medication alone, many patients do not respond to medication, have residual symptoms, or frequently relapse. Many patients may prefer a non-pharmacologic therapy or one that is consistent with their model of depression (Rupke et al., 2006). Also, following an expansion in the range of psychological treatments used for psychiatric disorders such as depression, there is now increasing interest in the use of these techniques such as

cognitive therapy and logo therapy for older patients (Wilkinson, 1997).

Cognitive therapy

Cognitive therapy is not only an efficacious treatment for major depression disorder (MDD) (Ryan, 2010) but also it has been known as one of the most commonly used therapeutic techniques for the treatment of geriatric depression (Floyd et al., 2004). In this respect, an informal survey of depressed older adults participating in a cognitive group- therapy study revealed that the opportunity to use their minds in new ways was one of the most enjoyable aspects of the therapy experience (Yost et al., 1986). Also recent studies have established that CT provides more enduring effects than discontinued medication (Ryan, 2010). Numerous meta-analyses comparing relapse/ recurrence rates of patients who remitted on CT with patients who remitted on antidepressant medication and were withdrawn from medication, found lower relapse/ recurrence rates following CT (Bockting et al., 2009). In addition, several investigators reported that the combination of cognitive and antidepressant therapy may be more effective than either therapy alone for some patients (Rupke et al., 2006). A meta-analysis that included six studies and 595 patients showed that patients with severe depression benefited from the combination of psychotherapy and pharmacotherapy (Thase et al., 1997). CT comprises a set of procedures intended to alter the function of the depressive scheme (Garratt and Ingram, 2007) - which includes three core beliefs: negative view toward self; the world; and the future (Li, 2007) - as well as its content and structure (Garratt and Ingram, 2007). So, the purpose of cognitive therapy is: 1) that the intervention seeks to link thoughts, feeling and behavior, and relates these to the depressive symptoms (Knapp and Beck, 2008); 2) that the intervention seeks to record and correct any irrational thoughts or behavioral patterns, and relates this to the depressive symptoms; 3) that the intervention seeks to teach the patient alternative methods of thinking or behaving, and to be able to relate this to the depressive symptoms; and 4) that the intervention is undertaken in either individual or group form (Jakobsen et al., 2012).

Logo therapy

Logo therapy is both a philosophy and an approach to daily life which is centered on the premise that finding meaning in the moment and the search for ultimate meaning are essential to human existence (Morrison et al., 2007). In other words, it is a psychological and therapeutic treatment comprising a spiritual approach to the root of the problem, which helps people appreciate

their responsibility for existence, gain liberty out of emotional distress, and find the meaning and purpose of their life (Kyung-Ah et al., 2009) through experiences, creativity, and change of attitude (Chags, 2003). Logo therapy rests on three basic pillars, or fundamental assumptions: (1) meaning of life; (2) freedom of will; and (3) will to meaning (Marshall, 2010). Meaning of life asserts that there is organization, impact and purpose in human life. Freedom of will stresses that all human beings not only have the freedom to make choice in any given situation, but also they take responsibility for their choices. Will to meaning is the human motivation to search for meaning, to make personal sense of life, actions, or overall approach to what life gives (Nassif et al., 2010). There is increasing evidence to suggest that the crisis of aging appears to be a crisis of meaning. The challenge of older adulthood is to make sense of life at a stage when changes and losses occur with bewildering and sometimes overwhelming frequency and intensity. Older persons require a sense of meaning in their lives in order to cope successfully with the eroding and debilitating diminishment that aging and growing old often introduce (Kimble and Ellor, 2001). The discovery of meaning will significantly improve one's quality of life, irrespective of the circumstances (Burger et al., 2008). A strong sense of meaning in life maintains a zest for life and lays the foundation for well-being. Losing a sense of meaning in life decrease zest for life, which in turn may lead to feeling of emptiness and depression (Takkinen and Ruoppila, 2001). Logo therapy is considered to be an adjunctive therapy, enhancing rather than replacing other treatments. Unlike traditional psychotherapies, that focuses on psychopathology and psychological symptoms (Southwick et al., 2006), this approach tries to reduce the symptoms of depression (De Roon-Cassini et al., 2009) and psychological distress (Schulenberg et al., 2008), considers several contexts such as seeking the meaning of life, individual frustration, noogenic, noodynamics, paradoxical intention, meaning of love, meaning of suffering (Schulenberg, 2003), Socratic dialogue (Kimble and Ellor, 2001), and results in more proactive and sociable behavior, and favorable attitudes toward life and the self (Schulenberg et al., 2008).

Despite the high prevalence of depression in elderly patients- especially residents in sanitarium- as mentioned earlier, the application of psychological approaches such as cognitive and logo therapy to treat these patients has not been developed relatively. On the other hand, there are little studies that have investigated efficacy of these methods (cognitive and logo therapy) in elderly. Hence, in this study we aimed to compare the effectiveness of cognitive and logo therapy on the reduction rate of depression in aged men, and therefore suggested consulting methods related to elderly persons' characteristics in order to reduce depression. The main question of this research is whether logo therapy and

cognitive therapy are effective on reducing depression in the elderly persons living in nursing houses, and if there is a significant difference between their effects?

Hypotheses

Hypothesis 1: Cognitive group training is more effective than group logo therapy in reducing depression in elderly people.

Hypothesis 2: Aging males who receive CT are less depressed compared with aging males who do not receive CT.

Hypothesis 3: Aging males who receive logo therapy are less depressed than aging males who do not receive logo therapy.

MATERIALS AND METHODS

Participants

Forty five subjects between age 65 to 85 years among elderly residents of a sanitarium in Guilan, Iran diagnosed with depression by Geriatric depression scale (GDS) were randomly selected and divided into two groups: case (cognitive and logo therapy), control (no therapy).

To assess depression rate, we used the Geriatric depression scale- short form (GDS-SF) that is currently used for clinical and research purposes (Incalzi et al., 2003). GDS-SF is a 15- item self-rating scale developed specifically for screening depression in the elderly (Chimich and Nikolaichuk, 2004). The GDS-15 takes values from zero (absence of depression) to 15 (serious depression). The questions were translated to Farsi and validated in Iran with satisfying reliability. The GDS was founded to be an internally consistent measure. Alpha, split-half coefficients and test-retest reliability were 0.9, 0.89 and 0.58, respectively. Two factors were extracted by using factor analysis and the principle component analysis (varimax rotation): 'depression' and 'psychosocial activity'. The depression factor (omitting items 2, 9, 10 and 13), which could be considered as a short form of the scale ($\alpha = 0.92$), has significant correlation with the 30-items main scale ($r = 0.58$). Using receiver operating curve (ROC) analysis, the optimum cutoff score for GDS-15 is 7.8, yielding a sensitivity of 0.9 and a specificity of 0.84 (Malakouti et al., 2006).

Research design

The experiment used a 3 × 3 between-subjects design. The independent variable was depression. To conduct the between-subjects experimental design, two experimental groups received techniques of cognitive therapy and logo therapy, and the control group received no training or treatment.

Procedure

GDS questionnaire was applied on residents who were able to participate in research and not receiving anti-depressant drugs. Forty five subjects suffering from main depression disorder (MDD) were randomly selected and divided into two groups- case who received logo and cognitive therapy and control receiving no

Table 1. Descriptive measures of age, education, pre-test, post-test, total and participants groups.

| Parameters | Age | Education | Pre-test | Post-test | Total | Participants group |
|------------------------|-------|-----------|----------|-----------|--------|--------------------|
| N | 45 | 45 | 45 | 45 | 45 | 45 |
| Mean | 72.78 | 1.38 | 14.51 | 12.87 | 27.64 | 2 |
| Median | 70 | 1 | 15 | 13 | 27 | 2 |
| Mode | 70 | 1 | 15 | 15 | 30 | 1.00a |
| Std. deviation | 6.09 | 0.49 | 1.52 | 1.83 | 1.87 | 0.826 |
| Skewness | 0.51 | 0.52 | -5.85 | -0.21 | -0.019 | 0.000 |
| Std. error of skewness | 0.35 | 0.35 | 0.35 | 0.35 | 0.35 | 0.35 |
| Minimum | 65 | 1 | 5 | 10 | 24 | 1 |
| Maximum | 85 | 2 | 15 | 15 | 30 | 3 |

treatment and each group consisted of 15 subjects. All participants were treated in group and each took part in 10 treatment sessions-75 min for each- once a week. At the end both groups attended the test again. The collected data were analyzed using SPSS. The results of pre-test and post-test were compared with each other.

Cognitive therapeutic intervention

We used a closed format with 15 members. Each CT session followed a fixed structure, with agenda setting, review of homework, explanation of rationale of each session, and assignment of homework. In treatment of MDD, the application of cognitive principles begins in the first therapy session, which is typically devoted to an intake evaluation. During this session, the cognitive therapist learns the patient's history and forms a diagnostic impression. Once the intake is accomplished, the next task is for the clinician to teach the model to the patients. This typically takes 5 to 10 min, and is done with a whiteboard. In associates situations, feelings and thoughts in the patient's mind are illustrated by means of the triple column technique in which patients write out their situations, feelings, and thoughts on a three-column chart. Once the patients demonstrated a grasp of the conceptual model, the therapist and patients can proceed to formulate a plan. At this point, the clinician's approach is structured in a series of steps: Identify the negative thoughts 'the patients monitor the thoughts that are associated with depression, anxiety and anger'; Rate the degree of belief in the thought and the degree of emotion associated with the thought (from "0" to "100"); categorize the negative thought; 'the patients classify the thought according to the thinking (cognitive) distortion exemplified by the thought'; use the method of vertical descent 'What would it mean if the thought are true?' Examine the patient's underlying rules; list all the advantages and disadvantages of the thoughts and divide 100 points between them by the elders; This addresses the patient's motivation to change the thought; list the evidence supporting and refuting thought by the clients; examine the events along a continuum from "0" to "100"; Argue back at the thought 'the therapist and the patients take roles in which the patients are asked to argue against their negative thinking. Role can be switched'; the application of logical analyses 'are the patients drawing conclusions that are unwarranted?'; encourage the patients to practice with alternative attitudes; and finally acceptance's step' is there a reality that the patients can learn to accept, rather than trying to fix or struggle with it?

Logo therapeutic intervention

The logo therapy education program is used with 15 numbers in

several contents: The first educational step introduces existence as the fundamental concept of logo therapy. The second to ninth educational steps present techniques specific to logo therapy including paradoxical intention (wishing for or doing that which is feared) or the use of humor, dereflection (redirection attention from the self toward other people meaningful goals), and socratic dialogue (interviewing designed to elicit the patient's own wisdom). Each of these approaches encourages older adults to talk about life goals from last up to now. The patients are asked to examine the relationship between goals and meaning of life. In this method, therapist teaches the patients that there is a meaning in life, beyond difficulties and troubles that is attained by faith and it is not human beings who ask life why?! Why?!... It is rather life that asks, and they must answer by listening to and understanding the meaning of the moment, and by making responsible decisions within their available area of freedom. These choices are based on their values, and the guidance received from the voice of their conscience. He/she helps them to find meaning by looking at it in a different ways when face with unavoidable suffering. Finally in the last step, therapist emphasizes that clients are 'unique', they have freedom to respond to their situations and problems. Therapist guides them to search for their remaining freedom. He or she helps patients to identify negative attitudes which have been unhelpful in the past, and highlight and explore possible alternatives.

Statistical analysis

Descriptive statistic was utilized to describe the variables of the study and demographic characteristics of the samples. Then, inferential statistics was applied. Two sample t-test was used to mutually analyze the difference of means of three groups about pre and post- tests.

RESULTS

Demographic characteristics and descriptive data of participants in the total sample are shown in Table 1. As shown in Table 1, 45 subjects were included in this study. The mean age was 72.78 ± 6.09 . The age range was 65 to 85. The mean score of education was 1.38 ± 0.49 , for pre-test was 15 ± 1.52 and for post-test was 12.87 ± 1.83 . The score for total was 27.64 ± 1.87 and for participant groups was 2 ± 0.825 .

As shown in Table 2, using t-test the means of three

Table 2. Results of two sample t-test regarding logo and, cognitive therapy for pre-test and post-test.

| Participant group | t-test for equality of means | | | | | | | |
|----------------------------|------------------------------|-------|------|-------|-------|--------|--------|-----------------|
| | N | Mean | SD | F | Sig. | t | df | Sig. (2-tailed) |
| Pre-post difference | | | | | | | | |
| Logo therapy | 15 | 2.2 | 1.47 | 1.43 | 0.24 | -0.65 | 28 | 0.52 |
| Cognitive therapy | 15 | 2.73 | 2.81 | | | -0.65 | 21.14 | 0.52 |
| Post-test | | | | | | | | |
| Cognitive therapy | 15 | 11.33 | 1.29 | 20.37 | 0.000 | -10.23 | 28 | 0.000 |
| Control | 15 | 14.87 | 0.35 | | | -10.23 | 16.07 | 0.000 |
| Logo therapy | 15 | 12.4 | 1.30 | 23.65 | 0.000 | -7.102 | 28 | 0.000 |
| Control | 15 | 14.87 | 0.35 | | | -7.102 | 16.045 | 0.000 |

Table 3. Results of variance analysis (ANOVA) for logo, cognitive therapy, and control group in the level of post-test.

| Condition | Sum of squares | df | Mean square | F | Sig. |
|----------------|----------------|----|-------------|-------|-------|
| Between groups | 98.53 | 2 | 49.27 | 42.52 | 0.000 |
| Within groups | 48.67 | 42 | 1.16 | | |
| Total | 147.22 | 44 | | | |

Table 4. Tukey test (HSD) for comparing the scores of logo therapy, cognitive therapy and control group.

| (I) Participants group | (J) Participants group | Mean difference (I-J) | Std. error | Sig. | 95% confidence interval | |
|------------------------|------------------------|-----------------------|------------|-------|-------------------------|-------------|
| | | | | | Lower bound | Upper bound |
| Logo therapy | Cognitive therapy | 1.07* | 0.39 | 0.025 | 0.11 | 2.02 |
| | Control | -2.47* | 0.39 | 0.000 | -3.42 | -1.51 |
| Cognitive therapy | Logo therapy | -1.07* | 0.39 | 0.025 | -2.02 | -0.11 |
| | Control | -3.53* | 0.39 | 0.000 | -4.49 | -2.58 |
| Control | Logo therapy | 2.47* | 0.39 | 0.000 | 1.51 | 3.42 |
| | Cognitive therapy | 3.53* | 0.39 | 0.000 | 2.58 | 4.49 |

groups in pre-test and post-test level were mutually compared and with 95% confidence no significant difference was observed in effectiveness of group-based teaching of logo and cognitive therapy on decrease of depression Table 4. However, for unequal variance with 95% confidence a significant difference was seen in effectiveness of group-based teaching of cognitive therapy and control, logo therapy and control Table 4. Less depression was seen in group receiving logo and cognitive therapy.

According to the results of the variance analysis test (ANOVA) Table 3, it can be said that with 95% of confidence, that there is a significant difference among all three groups; logo therapy, cognitive therapy, and control

group in depression rate reduction in aged men.

The results of Post-hock Tukey test show significant difference in means of depression regarding the paired and mutual comparison in all three groups. Cognitive therapy group showed the most degree of means depression decrease (11.13%) and control group showed the least decrease (14.86%). Logo therapy also showed a decrease in depression (12.40%).

DISCUSSION

The current study is to study effectiveness of cognitive therapy and Logo therapy on the depression rate of aged

men in Sanatorium. The results of statistical analysis showed that there is a significant difference between the average of post-test scores of experimental groups and control group. It is notable that the three groups had no significant difference in depression rate pre-treatment, but after treatment, it can be deduced by 95% confidence that the group which received cognitive treatment showed a lesser depression rate in comparison with the control group. This finding corresponds with the results of studies by Scott et al. (2003), Paykel (2007), De Jonghe et al. (2004), Rupke et al. (2006), Hamblin (1993), Hollon et al. (1993) and Taghvaei and Hamidi (2004). They reported that depressive thinking results from repeated associations between the depressed state and negative thinking patterns and these associations can intensify depressed temperament. CT as a method of treatment can promote positive self-evaluation and can be helpful in solving problems in difficult life situations. CT strategies teach the patients to overcome stressful situations and negative affects (NA). This method helps them to involve in more positive activities and reduce depressed temperament.

In a study, Hollon and Kendall (1980) investigated the mechanisms of change in CT for depression, with a focus on cognitive variables such as automatic negative thoughts.

Parrish et al. (2009) showed that CT reduces the frequency of patient's negative thoughts and the severity of their dysfunctional attitudes, and that these changes are associated with depression-reduction over the course of treatment.

On the other hand, this study revealed that logo therapy also decreases depression rate in aged men. This finding is supported by some previous studies by Bahrami Dashtaki et al. (2006), Yousefi et al. (2009), Langle and Boyd (2006), Schulenberg (2003), Lee (2006) and Kyung-Ah et al. (2009). From the results obtained from researches, it is believed that logo therapy put emphasis on understanding of meanings and values, of freedom and responsibility, of conscience and commitment, of decision and responsibility, of suffering and faith. Logo therapy focus on the here and now as well as what can be done in the future, rather than on blaming past events. It appeals to what lies beyond the psycho-physical nature of older persons. Logo therapeutic tenet that self-transcendence is the essence of human existence to opens the door to a deeper understanding of the human capacity to dedicate and commit oneself to something or someone beyond one's self. This ability is what makes people fully human. They find meaning and fulfillment in their lives through transcending previous limitations, striving toward worthwhile goals, and encountering other human beings.

Therefore, both approaches specifically have the same goals; they place more emphasis on the future, and less on the past; both of them seek to change behavior and

attitude, and finally help people to gain control of their lives, through different techniques.

Another goal of this study was to see if there is a significant difference between the effectiveness of the two treatment methods. Mutual comparison of the groups revealed that cognitive treatment had the highest, and the control group had the lowest amounts in depression reduction, and that logo therapy was effective in depression reduction. One of the reasons for this is that in the age range of 65 to 85 elderly people are usually grandfathers and they seek new and desirable meaning through interaction with their children and grandchildren. Therefore, some of them suffered from attachment injuries due to living in nursing houses, and kept complaining from separation from their families. Some others believed that they deserve to suffer because they had made improper choices in the past, and felt responsible for irreparable damages to their life and relatives. Additionally, they did not try to change their suffers to meaningful achievements, and did not respond to treatment. This finding is convergent with that of Pourebrahim and Rasoli (2008) in which the authors examined the effect of group logo therapy on decreasing depression and increasing meaning in life in older adult's living in a sanatorium. The results indicated that group logo therapy can increase the meaning of life, but cannot decrease depression.

Limitations of the study

There are some limitations in this study. First, the finding of this study can not be applied to women population or single. Second, only the age range of 65 to 85 years was included. Third, we could not have a follow up program and finally the number of treatment sessions was limited.

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