

Comparing the Effectiveness of Ellis's Intellectual Emotional Behavioral Theory and Glaser's Reality Therapy on Reducing Stress and Anxiety Symptoms of Hemodialysis Patients with Control Group

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Abstract

Introduction: Dialysis as a therapeutic method in kidney failure patients is a stressful process. This method has various psychological and social problems, which can set the ground for the appearance of mental disorders in these patients. The current study aimed at investigating the effectiveness of Ellis's intellectual emotional behavioral theory and Glaser's reality therapy on reducing stress and anxiety symptoms of hemodialysis patients with control group. **Methodology:** The current research was a quasi-experimental study, in which pre-test and post-test design having a control group were used. The statistical population of this study included all dialysis patients of Emam Reza Hospital in Kermanshah during 2018-2019, among which, 45 patients were selected purposefully and placed randomly in experimental (30 individuals) and control (15 individuals) groups. Having homogenized the subjects based on demographic characteristics (age, disease duration, disease intensity and others), they were randomly placed in three groups including an interventional group of 8 sessions regarding intellectual emotional behavioral theory, an interventional group of 8 sessions regarding reality therapy and a control group. Data were analyzed using SPSS, version 22, software. **Findings:** The results of the current research indicated that stress and anxiety scores after the intervention had a significant difference with each other in three groups; in treating the anxiety, intellectual emotional behavioral therapy of Ellis was effective than reality therapy of Glaser ($P=0.037$); however, they had no differences with each other in treating stress ($P>0.05$). Moreover, the anxiety and stress scores after the intervention in intellectual emotional behavioral therapy of Ellis and the intervention group of Glaser's reality therapy had a significance difference with the control group ($P=0.001$). **Conclusion:** Intellectual emotional behavioral therapy and reality therapy reduced the symptoms of anxiety and stress and were efficient and effective therapies. It is suggested that psychological therapies be used along with pharmacotherapies to improve the psychological status of hemodialysis patients.

Keywords: Intellectual emotional behavioral theory of Ellis, Reality therapy of Glaser, Anxiety, Stress, Hemodialysis

INTRODUCTION

Most of the diseases specially those chronic and disabling ones, have various psychological consequences; that's why the appearance of psychological disorders is prevalent following the appearance of physical diseases [1]. World statistics regarding chronic kidney insufficiency reported 1.1 million individuals in 2007, which was estimated to grow 1-2% in the forthcoming years [2, 3]. In the studies conducted in Iran, the high prevalence of having chronic kidney insufficiency in ages above 60 years was confirmed and dangerous factors of diabetes and high blood pressure were the main factors of this disorder [4]. In the results of many studies, the high prevalence of metal-social disorders is observed in dialyses patients. There is no solidarity regarding the intensity of the appearance of psychological complications among dialyses patients, however, all emphasis on this common point that the most prevalent sign

is having psychological problems in these patients such as depression as well as anxiety, which is less prevalent. Depression was observed in 50%, anxiety was observed in 30% of the cases and other psychological disorders were less prevalent among them [5]. Other studies indicated that almost

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20-30% of dialysis patients are depressed ^[6]. Kimmel et al., in 2000 concluded that there was a significant relationship between the intensity of depression and mortality rate of dialysis patients ^[7].

Heretofore, lots of therapeutic methods have been designed and administered regarding psychological problems of hemodialysis patients. To treat anxiety and stress of patients under dialysis therapy, non-pharmacological therapies have been mostly used such as music therapy, massage and physical activities, which have obtained discussable results in relation to the effectiveness of the aforementioned methods. Considering the mentioned statements, it seems that the issue of these patients' recovery is of utmost importance. The purpose behind patient recovery is developing and improving the natural life quality and making it natural like as much as possible. Intellectual emotional behavioral theory of Ellis is a kind of cognitive-behavioral therapy discovered by Ellis. Ellis (1999) believed that events around people do not cause tension, anxiety and stress, rather, the views and beliefs of people regarding the events cause tension and anxiety in the, and leads to problems in their life ^[8].

Conducted researches in various parts of the world show the effectiveness of intellectual emotional behavioral psychotherapy over other criteria, problems and psychological disorders such as irrational beliefs ^[9], anxiety ^[10] and stress ^[11].

Glaser's reality therapy is among other important approaches toward treating depression. Reality therapy is a counselling method that learns people how to manage their lives, how make do effective choices and how to make themselves strong while facing stress and life problems ^[12]. Researches have shown that reality therapy is effective in reducing anxiety and increasing people's responsibility taking ^[13]. Matthews and Wells investigated the effectiveness of reality therapy on reducing anxiety. The results indicated that reality therapy had a significant effect on reducing their anxiety ^[14], however, there is few evidence regarding the comparison of the effects of long-term differentiation of psychological interventions ^[15]. Although the existing researches showed that various psychological therapies have similar effective in the course of time ^[16]. Some evidence showed the superiority of some of the therapies over others ^[17]. There has been no studies conducted regarding the comparison of reality therapy approach and cognitive behavioral therapy of Ellis in patients having chronic kidney insufficiencies. Considering these opposing findings, it seems rational that an important part of studies on the effectiveness of psychological therapies be related to the comparison of these interventions and the evaluation of their effects in the follow-up periods ^[18-20].

METHODOLOGY

The current study was applied in terms of purpose and it was quasi-experimental in terms of methodology regarding which, pre-test and post-test design having a control group

was utilized. The statistical population of this research included all dialysis patients of Emam Reza hospital in Kermanshahd during 2018-2019, among which, 45 individuals were selected purposefully and they were randomly placed in experimental group (15 individuals of relation therapy and 15 individuals of intellectual emotional behavioral theory) and control group (15 individuals). Having homogenized the subjects based on demographic characteristics (age, duration of the disease, intensity of the disease and others), they were randomly placed in three groups including an intervention group of intellectual emotional behavioral theory, an intervention group of reality therapy and a control group.

Inclusion criteria to the study were having dialysis disease for at least 6 months, having the anxiety score (BAI) of 8 to 25 (mild to moderate anxiety) and being diagnosed to have an anxiety disorder through diagnostic interview (SCID-I), intendancy toward participating in the interventions (through signing the consent form) and having at least diploma education).

Exclusion criteria of the study were having any kind of other apparent disorders in the I axis (other than depression, stress and anxiety), having the signs and symptoms of psychosis such as hallucination, delirium, having experienced drug abuse or dependency to drugs in the past or now, having suicide thoughts or chronic depression and simultaneously receiving psychiatric therapies or psychotherapies (patients should not have received any psychological therapies or pharmacotherapies at least 6 months before starting the study).

Ethical consideration of this study: obtaining oral consent from all members to participate in the therapeutic sessions, volunteer participation of the members in the therapeutic sessions; all subjects had to sign the informed consent in a written form before participating in the study; subjects were free to leave the therapies at any stage they want, the information obtained from the subjects were codified so that nobody could be aware of the essence of the codes except the tester himself and the questionnaires and data were kept in a secure place so that no one could have access to them except in specific cases.

Instruments of the Study

Demographic questionnaire: It is a researcher made questionnaire which aims at collecting demographic information (such as age, gender, education level, job and others) from dialysis patients.

Structured Clinical Interview (SCID-I): Structured clinical interview should be administered by the qualified interviewer who has an experience in the field of psychopathology. The Persian version of it had been validated and it is used more than any other diagnostic interviews in the psychiatrist studies ^[21].

Beck Anxiety Index (BAI): This a self-assessment questionnaire having 21 questions which has been designed with the aim of measuring the intensity of anxiety. This test evaluates the intensity of anxiety in the last week. The score of "severe" to "at all" is the scope of questions having 0 to 3 values and the score scope ranges from 0 to 63. The highest score shows severe anxiety. A score of 0-7 shows the least anxiety, a score of 8-15 shows mild anxiety, a score of 16-25 shows moderate anxiety and a score of 26-63 shows severe anxiety. Its internal consistency is high and its reliability coefficient of one week re-test was obtained almost 0.75. In order to grade the anxiety, the correlation between BAI scores and Hamilton scale was obtained 0.51 and the correlation between BDI and Hamilton score was 0.48 (Hamilton, 1959, HARS). This test is suitable for adultery subjects and can be used in both clinical and research conditions.

Hemodialysis Stress Scale Questionnaire (HSS-Baldree):

This instrument had been designed in 1982 and has 29 questions dividing stressful factors into two main categories of physiologic factors (6 cases) and mental-social factors (23 cases). Based on five point Liker scale, responses have been categorized into not having stress (0), really low stress (1), low stress (2), Moderate stress (3) and high stress (4), respectively. The patients are asked to mark the considered response on the questionnaire based on their emotions regarding the intensity of each of the mentioned cases. The overall scores of the questions are from 0 to 116 and according to the patients' responses, the intensity of stress is considered from severe (between 81 to 116), moderate (between 41 to 80) and mild (between 0 to 40). The validity and reliability of this questionnaire was confirmed by Jennifer *et al.*, as well as having obtained the Cronbach Alpha of 0.89% in foreign studies.

Group Training Protocol Based on Choice Theory Approach and Reality Therapy [22].

First session: Introducing therapeutic programs, its underlying rationale, introducing the group leader, members of the group, group rules and regulating the goals, investigating people's expectations from creating the group and administering pre-test.

Second session: Introducing why and how our behaviors are issued: Why do we behave? How do we behave?

Third session: Simply introducing M.S. disease, what is this disease? What does it do and how it affects the emotions, anxieties and behavioral maladaptation of this that are not directly resulting from it. Administering a pre-test before starting the session to measure their comprehension and conception regarding their disease and its complications and consequences and finally administering a post-test at the end of the session.

Fourth session: Introducing general behavior and familiarizing group individuals with 4 criteria of general

behavior: Thought, action, emotion and physiology. Doing various role plays and making clinical as well as non-clinical examples regarding the effects of changing the actions and thought on changing emotions and physiology. Dong group practices to show the effectiveness of changing the action and thought on emotion and physiology.

Fifth session: Introducing anxiety, stress and anger from the point of choice theory, introducing quad conflicts, asking them to evaluate themselves and say what kinds of conflicts were common in their life and determine its intensity from 0 to 10.

Sixth session: Introducing 7 destructive behaviors of human relations (criticizing, grumbling, complaining and others) and diagnosing the pattern of using factors in the main interaction of life especially with spouses and children. Introducing 7 behaviors that make the behavior (listening, encouraging) and homework for following it during next weeks.

Seventh week: introducing and discussing internal control through training the ten principles of choice, presenting detailed explanation and various examples and asking them to provide personal examples.

Eighth session: introducing therapeutic system of choice theory and reality therapy; desires and needs; direction and performance, self-assessment, action based design and helping the group to have an identical design to prevent using and asking help from external controls.

Group Counselling Protocol of Intellectual Emotional Behavioral Therapy of Ellis including 8 sessions [23].

First session: Introducing group leader to the members, creating an appropriate relationship with the members of the group, reviewing the group rules, doing homework, identifying purposes and members' expectations, training psychology, training events, thoughts, emotions and behaviors in the daily life, group activities, presenting homework.

Second session: investigating homework, stating the problems and members' major issues, their feedbacks and sharing ideas, re-training behavior analysis (A-B-C) so that all members could be professional on the behavior analysis subject, group activities, presenting homework, completing though, action and emotion table.

Third session: investigating homework, investigating A-B-C tables and solving the possible problems while differentiating among these cases. Psychological training: investigating cognitive-behavioral model of Ellis and introducing musts and dos and don'ts, introducing irrational beliefs of Ellis. Group activities: group discussions, stating samples of daily dos and don'ts, presenting homework: reviewing dos and don'ts in the real circumstances of life

Fourth session: investigating homework: Exploring dos and don'ts and comparing members' comments with each other. Psychological training, introducing the rest of dos and don'ts, catastrophes and irrational beliefs of Ellis. Group activities and presenting homework.

Fifth session: investigating homework and giving feedback. Psychological training, providing cognitive reconstruction through replacing rational thoughts with irrational ones, knowing the effect of irrational thoughts on forming self-concept and self-respect and interpersonal relationships. Group activities, presenting homework.

Sixth session: Investigating homework, training problem-solving method, group discussions, stating a problem, exactly defining the problem, Presenting thoughts regarding the possible ways of solution without evaluation, one by one investigation of the solutions, evaluation and choice of proper solution and presenting homework.

Seventh week: investigating homework, solving the possible problem. Training interpersonal coping skills and proper social skills. Group activities and presenting homework.

Eighth session: investigating homework and presenting feedback, summing up and briefly explaining previous discussions, stating members' emotions and taking feedback from them.

Data Analysis

This research has utilized SPSS, version 22, software and descriptive statistics (mean, standard deviation) as well as inferential statistics (for comparing the quantitative variables in the two groups) and covariance analysis. Before conducting covariance analysis, the hypotheses of this method were investigated and Levene test showed that there was no significance differences between the groups of the study ($P < 0.05$).

RESULTS

Table 1. The frequency of educational status in three investigated groups

| Education degree | Group | | | | Significance |
|------------------|------------------------|-----------------|---------|-------|--------------|
| | Intellectual emotional | Reality therapy | Control | Total | |
| Diploma | 8 | 6 | 5 | 19 | 0.84 |
| B.A | 5 | 7 | 8 | 20 | |
| More than B.A | 2 | 2 | 2 | 6 | |
| Total | 15 | 15 | 15 | 45 | |

Table 2. The age mean of the tested groups

| Group | Number | Mean | Standard deviation | Minimum | maximum |
|--|--------|-------|--------------------|---------|---------|
| Intellectual emotional Training of Ellis | 15 | 38.33 | 7.99 | 24 | 52 |
| Reality Therapy of Glaser | 15 | 38.33 | 8.31 | 25 | 51 |
| Control | 15 | 37.13 | 7.03 | 29 | 50 |
| Total | 45 | 37.93 | 7.64 | 24 | 52 |

Table 3. The mean of anxiety and stress before and after the intervention in the tested groups

| Variable | Group | Test | Number | Mean | Standard deviation |
|----------|--|-----------|--------|--------|--------------------|
| Anxiety | Intellectual emotional training of Ellis | Pre-test | 15 | 43.80 | 3.02 |
| | | Post-test | 15 | 19.53 | 6.45 |
| | Reality therapy of Glaser | Pre-test | 15 | 43.26 | 3.80 |
| | | Post-test | 15 | 24.26 | 4.51 |
| | Control | Pre-test | 15 | 25.20 | 5.87 |
| | | Post-test | 15 | 25.40 | 6.03 |
| Stress | Intellectual emotional training of Ellis | Pre-test | 15 | 107.20 | 6.02 |
| | | Post-test | 15 | 72.86 | 4.35 |
| | Reality therapy of Glaser | Pre-test | 15 | 108.13 | 8.23 |
| | | Post-test | 15 | 71.33 | 5.09 |
| | Control | Pre-test | 15 | 115.66 | 3.82 |
| | | Post-test | 15 | 116.40 | 3.54 |

The aforementioned table shows the anxiety and stress scores of the subjects before and after intervention in intellectual emotional training group of Ellis and reality therapy group of Glaser as well as control group.

Table 4. Covariance analysis for investigating the effectiveness of therapies on the anxiety

| Source | Sum of squares | Degree of freedom | Mean of squares | F | Significance | The amount of Eta effect |
|---------|----------------|-------------------|-----------------|------|--------------|--------------------------|
| Anxiety | 248.11 | 1 | 248.11 | 9.01 | 0.005 | 0.18 |
| Group | 527.96 | 2 | 263.98 | 9.57 | 0.001 | 0.318 |
| Error | 1130.15 | 41 | 27.56 | | | |
| total | 25612 | 45 | | | | |

The above table indicates that the score of anxiety before the intervention and difference of therapeutic groups after the intervention was significant in three groups ($F_{41,2}= 8.21$ and $p<0.001$). To determine which group's difference was significant, Benferroni post-hoc test was utilized whose results were as the following:

Table 5. Benferroni post-hoc test for comparing the significance of the therapies

| Groups | | Mean differences | Standard deviation errors | Significance level |
|---|---------------------------|------------------|---------------------------|--------------------|
| Intellectual emotional therapy of Ellis | Reality therapy of Glaser | -5.02 | 1.92 | 0.037 |
| | Control | -16.13 | 3.92 | 0.001 |
| Reality therapy of Glaser | Control | -11.11 | 3.83 | 0.018 |

The above table shows that intellectual emotional group of Ellis and reality therapy group of Glaser had significant differences with each other so that the effect of intellectual emotional group of Ellis was more than reality therapy of Glaser on reducing the signs and symptoms of anxiety and it was statistically significant ($P=0.037$). Moreover, the results indicated that the effect of intellectual emotional group of Ellis was more than control group on reducing the signs of anxiety and it was statistically significant ($P=0.018$).

Table 6. Covariance analysis for investigating the effectiveness of therapies on stress

| Source | Sum of squares | Degree of freedom | Mean of squares | F | Significance | The amount of Eta effect |
|--------|----------------|-------------------|-----------------|--------|--------------|--------------------------|
| Stress | 186.99 | 1 | 186.99 | 12.41 | 0.001 | 0.232 |
| Group | 12584.38 | 2 | 6292.19 | 417.66 | 0.001 | 0.953 |
| Error | 617.66 | 41 | 15.06 | | | |
| total | 360009 | 45 | | | | |

The above table indicates that the score of stress before the intervention and difference of therapeutic groups after the intervention was significant in three groups ($F_{41,2}= 8.21$ and $p<0.001$). To determine which group's difference was significant, Benferroni post-hoc test was utilized whose results were as the following:

Table 7. Benferroni post-hoc test for comparing the significance of the therapies

| Groups | | Mean differences | Standard deviation errors | Significance level |
|---|---------------------------|------------------|---------------------------|--------------------|
| Intellectual emotional therapy of Ellis | Reality therapy of Glaser | 1.84 | 1.42 | 0.60 |
| | Control | -40.49 | 1.63 | 0.001 |

| Reality therapy of Glaser | Control | -42.54 | 1.58 | 0.001 |
|---------------------------|---------|--------|------|-------|
|---------------------------|---------|--------|------|-------|

The above table shows that intellectual emotional group of Ellis and reality therapy group of Glaser had no significant differences with each other so that the effect of intellectual emotional group of Ellis was similar to the reality therapy of Glaser regarding the reduction of the signs and symptoms of stress ($P<0.05$). Moreover, the results indicated that the effect of intellectual emotional group of Ellis was more than control group on reducing the signs of stress and it was statistically significant ($P=0.001$). Reality therapy group of Glaser had more effects on reducing the signs of stress in comparison to the control group and its was statistically significant ($P=0.001$).

DISCUSSION AND CONCLUSION

This study investigated the effectiveness of intellectual emotional behavioral therapy of Ellis and reality therapy of Glaser on reducing the symptoms of anxiety and stress in hemodialysis patients along with a control group in the dialysis ward of Emam Reza hospital. Hemodialysis patients face limitation in their daily activities, changes in the life styles and various needs due to the long duration of the therapeutic period. Any significant changes in the common life, potentially is a starter of a stressful life period with mental pressure; the appearance of tension is mostly related to one's behavior with the existing change. Tension exists in all fields of life and it has its ever presence everywhere with various degrees ^[15].

The findings of the current study showed that both intellectual emotional behavioral therapy of Ellis and reality therapy of Glaser had a significant effect on reducing the signs and symptoms of anxiety; however, Ellis's therapy was preferred to the reality therapy. In explaining this finding, it can be stated that Ellis's therapy emphasized on changing the attitude, belief and behavior, which itself increases the explaining power of the phenomena, the relationship between them and their control and considers all behavioral aspects; while, reality therapy emphasizes on training responsibility taking and the way of controlling choices and helps to appropriately meet emotional needs. In intellectual emotional behavioral therapy, the irrational beliefs of one are acknowledged and emphasis is on replacing rational beliefs with irrational beliefs of an individual. Therefore, those strategies applied for the referees during therapeutic sessions, helps him diagnose the inefficient though patterns which leads him feel inefficient so that he can replace these thoughts with rational and efficient thought patterns. Furthermore, presenting homework in training sessions and their continuation to do the homework in the house is of utmost importance, since doing homework is a kind of exercise regarding individual's encountering problematic and challenging circumstances in the real life, which increases the effect of therapies ^[24].

Considering the findings of the study, it was revealed that reality therapy and intellectual emotional therapy of Ellis was effective on reducing the signs of anxiety and stress in hemodialysis patients of Emam Reza hospital; in other words, it can be stated that patients participating in the experimental group could use reality therapy and intellectual emotional therapies' trainings to reduce the signs of anxiety and stress and this method was effective on them; the results of the current study was in line with other studies' results [25-30]. To elaborate this finding, it can be stated that group reality therapy was effective in improving the negative feelings of patients and one of the advantages of participating in group sessions is that these individuals can show their feelings and challenge them. Most of the times, the questions and responses are accompanied by some of the important data of the people and helps them while showing the feelings; they learn how to cope with these unpleasant feelings. Finally, these kinds of information can lead to the reduction of anxiety and concern. Considering the group essence of intervention in the study, most of the above criteria include sympathizing, showing feelings, interaction, sharing experiences and increasing the feeling of internal control. These criteria are among factors that can improve mental status specially anxiety and stress of patients [30]. In reality therapy, what is idiomatically called as mental disease, is considered through three issues of reality, responsibility and true or false; one is considered as patient who cannot meet two basic needs regarding the reality, accepting responsibility and identifying true or false cases. The intensity of the disease depends on the degree of one's inability in meeting his needs. Mental patients are those having unsuccessful identity that suffer from loneliness and worthless feeling and considering the diagnosis, they face reality through two forms; they may reject the reality or ignore it. In other words, what is idiomatically called mental patient refers actually to various forms of denying the reality. Those ignoring reality, are aware of it, but they follow it to escape from the pain resulting from feeling worthless [31].

Psychological treatments have more advantages and sustainability over pharmacotherapies; in this regard, it can be presumed that since in Iran, most of the people are youth, they may face social, family and economic crises in various periods [32]. Therefore, using these kinds of cheap psychological treatments presented by counselling centers can turn the positive and healthy morale to the society people so that they can do their duties as a creative person in various parts of the society. This therapeutic method helps them cope with depression and inefficient beliefs, which may affect their health.

Research Limitations

The current study, like any other studies, had some limitations whose statement can make the findings and suggestions of the research more clear and help next studies to cope with the internal and external validity limitation factors.

The limitations of this research can be briefly listed as below:

1. One limitation was that dialysis patients took part in the discussions of the final hours of the sessions less, since they got tired really soon.
2. There was a lack of follow-up measurement in the design of the study due to not having easy access to the participants of the group.

Research Suggestions

Conducting researches with follow-up sessions and investigating the permanence of the reality therapy and intellectual emotional therapy trainings over time.

1. Considering the systematic performance of the family, it is suggested that family members and their relatives be involved in the training process instead of doing interventions only for the patient so that he can be advocated in a way that most effectiveness of the therapies can be obtained on him.
2. Investigating factors such as economic, social and educational statuses.
3. Investigating the effectiveness of this method with other psychotherapy methods.
4. It is suggested that this treatment be applied on other patients having chronic physical problems such as those having HIV, cancer, diabetes and Parkinson and their results be compared with the obtained results of this study.

Applied Suggestions

1. Considering the efficiency of therapeutic group in the mental health of chronic patients, it is suggested that hospitals provide the required facilities for making continues therapeutic groups.
2. The continuous introductory program of dialyses patients be predicted to use the helper mental services while using medical treatments and after completing the active period of medical actions.
3. Conserving the educational essence of this treatment, it seems that this therapy can also be individually beneficial for the patients.

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