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The efficiency of cognitive behavioural therapy on decrease of anxiety and improvement of sleep quality in elders

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Abstract

This study was performed on the basis of investigation the efficiency of cognitive behavioral therapy on the decrease of elders anxiety and increase the sleep quality of them . The statistical population of this study is composed of elders in day care department in karaj kahrizak , that 40 persons of them are selected through purposive sampling and after taking the Beck anxiety index and Petersburg sleep quality, 10 persons of them were assigned randomly in experimental group and 10 persons of them in control group. From both of the groups beck anxiety inventory is taken. And after 10 sessions of cognitive behavioral therapy on experimental group, again the posttest of beck anxiety inventory and Petersburg sleep quality is taken. Also the covariance test is used for the moderation of pretest and control of its effect on posttest results. The result of this investigation showed the decrease of anxiety index and increase of sleep quality on the patient under cognitive behavioral therapy in comparison with control group. The data of this study was analyzed with the software of SPSS. The findings of this study shows that the difference between the mean of pretest and posttest was meaningful on decrease of anxiety index and increase of elders sleep quality after the control of primary differences in pretest ($p<0/01$). The results of this investigation showed that cognitive behavioral therapy is efficient on the decrease of elders anxiety and increase the sleep quality of them.

Key words: cognitive behavioral therapy, anxiety, sleep quality, elders

Introduction

The population of Iran becoming old like many other countries in the word. According to the latest population and housing census in 2011 the population over 60 years old was about 8/1 percent ,on the other word was more than 6/1 millions, that it is increased about 1 million person according to 2004 census. With continuation of this process in the next two decades between 25 to 35 percent of Iran population will become more than 60 years old. So that the Iran aging population will surpass in 2045 than universal mean and in 2049 than Asian countries [1]. One of the important dimensions of aging health is mental dimension and it is need to special attention. Anxiety and anxiety disorders are one of the usual problem in aging period [2].This phase of life is full of the sense of weakness and insufficiency. Elders for decrease of self-confidence ,motor defect, loosing of relatives and friends , decrease of independency and infection to long lasting diseases are

vulnerable to more anxiety [3]. Wolitzky Tailor and co-workers are believe that the anxiety prevalence scale in elders is more than depression prevalence scale, and the prevalence scale of it is estimated about 3-14 percent [4]. The investigations show that the sleep with low quality is in the third level of elders problem after headache and gastrointestinal disorders and it is one of the common problem and also it is the main reason of elders for visiting physicians [5]. More over the prevalence of sleep problems is high in elders , and it includes problem in going to sleep (10-39 percent), awaking in midnight (18-60 percent), awaking early in the morning (12-23 percent) , need to daily napping (18 -36 percent) [6]. Epidemiology studies show that more than 57 percent of elders report their sleep problem and more than 40 percent of over 60 years old people have low sleep quality [7].

Investigations show that mental health is involved in all of the social and individual behaviours of peoples as a effective factor and if the mental health of a person confronted with a crisis , not only the individual life of the person is confronted with problem but also the other individuals who have interaction with them are not safe of this leisure. Meanwhile aging individuals for the sake of old age and disabilities in psychological and physical dimensions , are more vulnerable in psychological problems and problems related to their mental health[8].

In psychological perspective ,anxiety is a negative mood manner and its characteristics include physical sign, physical tension and wiriness about future. Also anxiety could create unpleasant mental state , collection of behaviours like to appear worried, be anxious, restlessness and or physiological answer that it reflected by heart beat increase and muscular tension [9]. Mental disorders could appeared in one of these shapes like separation anxiety disorder, social anxiety disorder, generalized anxiety disorder, panic disorder, claustrophobia and also obsessive compulsive disorder [10] . also according to fifth edition of diagnostic and statistical manual of mental disorders , sleep and awake disorders are divided in two big groups : 1- insomnia , and 2- sleep abnormalities. Insomnia itself is include :sleepiness disorders, excessive drowsiness or somnolentia, sleep attack, sleep apnea, sleep-wake circadian rhythm, nightmare disorder, sleep disorder with rapid eye movement, restless foot syndrome, substance induced sleep disorder [11].

Since the anxiety is a unclear and unspecific sense with unknown source , not only it cause individual restlessness ,but also psychological reactions that is created as a result of anxiety ,is contagious from a person to the other. These factors could be creator of life threatening unspecific signs in more than 80 percent of elders. So one of the important actions is diagnostic of effective and related factors and reasons to anxiety [12]. Many testimonies show that tendency to tension, nervousness and anxiety is inherited [13] ,[14].

As though anxiety disorders are common in elders, but most of the time it is not diagnosed and not cured. Even though primary reports indicate of decrease in anxiety prevalence scale but recent studies show that probably this dedication was not true. Anxiety in elders is always the signs of initialling of depression and dementia and also is a signs of many other mental disorders. Although discrimination of anxiety signs than physical illness signs in elders is one of the problems that have specific importance [15].

For elders anxiety control alprazolam or a drug than benzodiazepine family is prescribed that for creation a lot of sleepiness , the elder person is reduced the use of it by himself, every other day instead of every day and this matter cause serious and dangerous effects in elder individual .For example in generalized anxiety disorder usually prescribed benzodiazepine and the testimonies show that this drug is relive to

some extent this disorder, at least in a short time. Also several other studies reported benzodiazepine effects for more than eight weeks . and more importantly it seems benzodiazepines create mental and physical dependency and this matter causes the continuity consumption of them. and more importantly it seems benzodiazepines create mental and physical dependency and this matter causes the continuity consumption of them [16]. Nevertheless healing effects of benzodiazepine is low , more over benzodiazepine is followed by some dangerous , included that it is disrupted in motor and cognition functions , on the other word use of benzodiazepine have direct relation with falling and breaking in elders [17].

Some ones who suffering than all kind of sleep disorders ,also apply pharmacotherapy as the first treatment option, because the treatment effects of it is faster. So it is necessary that a firm treatment and instructional logic is suggested to illness until they encouraged to learning the new methods of sleep etiquettes and changing the incorrect believes related to sleep, as though these instructions be effective in long-term. So it can be resulted that with attention to fundamental importance of health and enough sleep in compromise of elders ,that it is in fact the main component of health in elders , the cognitive behavioural therapy could be effective in improvement of sleep disorders and as a result increasing of optimal compromise level and at last the improvement of elders mental health level [18].

From cognitive behavioural point of view treatment is a learning dynamic process and cognitive behavioural therapy is a kind of treatment that is based on two cognitive and behavioural point of view, it means that unsuitable behaviour of human and his mental problems derived from insufficient and false learning, and the emphasise of this treatment is on the change and correctness of behaviour. Since the human has thought and idea and he analyse, process and stimulate the received stimulators and at last he does a behaviour. If the individual evaluation of accident be logical, the following sense of it will be suitable. But if the primary and secondary evaluations of human do not be logical, and have negative attitude , its consequence will contain the anxiety and sad sense or other negative sense. The cognitive behavioural therapy method is a psycho instructional approach and it is a short-term psycho analysis method that is presented at least in 8 sessions and maximum in 20 sessions and in 45 minutes this treatment is presented to patients [19].

There are reasons that show that cognitive behavioural interventions are effective a lot specially about elders. Some of these reasons are consist of : 1-concentrate on here and now, by means of concentrate on here and now the present need of elder would be specified, 2- the increase of elder skill and make them operational , to elders is taught the special method the control and management of stressful stimuli , 3- organization : the organizational identity of this treatment will help the elder to do his task in or along the sessions. The aim of presented task is the elder overcoming to his problems. 4- self-assessment : by means if self-assessment the elder is taught that recognize his mood changes and emotional (affective) vulnerabilities and enhance in itself the confrontation ability with his problems. 5-instructional dimension : the elder is recognized the relation between his behaviours, moods and thoughts and he recognizes the negative effect of anxiety on his activity and also the negative effect of his activities on anxiety. 6-directing goals: these interventions challenges the negative believes and stereotype of elder [20].

There are many forms of cognitive behavioural therapy for decrease of generalized anxiety disorder signs. Cognitive behavioural therapy is concerned specially on decrease of behavioural, physical and cognitive signs of generalized anxiety

disorder by means of special technics. These technics include relaxation, systematic desensitization, progressive relaxation, cognitive restructuring, stimuli control, prevention of answer, problem solving, listing suitable activities and instruction of interpersonal skills [21].

By means of cognitive strategies of stress management trying to recognize illogical, depression and anxiety stimulator thought and the patient gain insight to the role of these thought and also he tries to substitute logical thought by cooperation of therapist ,and decrease anxiety and distress in these individuals by behavioural strategies such as relaxation. Instruction of an effective relaxation technique give the person the opportunity to diagnose stress physical signs and with mastery in gain of calmness he gain the control of physical signs resulted of stress [22].

Since the connection between mind and body is powerful, methods of relaxation not only has an effect on body but also it has an effect on mind. As a result of these methods more self-awareness is formed in the person. So many of relaxation methods provide favourable environment to use of different strategies of coping with stress [23]. So by means of relaxation methods in individuals can help to decrease the stress level of them [24]. Cognitive behavioural skills can increase the individual positive assessments by correction of cognitive processes, decrease of stress signs, and decrease of negative assessment. These skills help to anxious and stressful people to evaluate an event less damaging with restructuring of thought model [25].

Method of research

The method of this research is semi experimental and the experimental design of it is included pre-test post-test with control group. In this investigation 40 elders of Karaj Kahrizak dairy care are selected as an available sample that with diagnostic of centre psychologist they were suffering from anxiety and sleep disorders. The amount of sleep quality and stress is evaluated after holding an exam then they substitute randomly in two 10 experimental and control group and withholding pre-test the amount of sleep quality and anxiety of them is measured. Before doing the investigation and for respect to experimental ethics, while presenting required information to subjects were given confidence that their information stay confidential and written satisfaction is given of them for take part in research.

Tools of investigation

Petersburg sleep index questionnaire

Petersburg sleep quality index is built by Daniel J Baisy and co-workers (1989), for measuring sleep quality and help to diagnostic of individuals who have good or bad sleep. This self-reporting scale has different territory that include subjective sleep quality (c1), sleep latency (c2), sleep duration (c3), sleep habit adequacy (c4), sleep disturbances (c5), use of sleep medication (c6), day time dysfunction (c7). Most items are organized on the basis of multiple choice questionnaire and they are short and easily understandable. Answers are graded from 0-3, and scores domain is located between 0-21. The test builders believe that one scores upper than 5 is regarded as a noticeable sleep disorder. The validity of this test is about high and its Cronbakh alpha is reported 83%. Reliability indexes of this test is consisted of characteristic 86.5% and sensitivity 89.6%. 7 sun scales of this questionnaire consist of subjective sleep quality, sleep latency, sleep duration, sleep efficiency, sleep disturbances, use of sleep medication, day time dysfunction. The scoring methods in this questionnaire is in this manner: each of 7 sub scales of this questionnaire dedicated to itself the score of 0-3. Many studies confirm the validity and reliability if this questionnaire, and also this questionnaire discriminate the ‘quality of sleep than sleep (0.36). internal consistency coefficient of test subscales is

between 0.36 and 0.86 and the test sensitivity is equal with 86.5.

Beck anxiety index questionnaire

This questionnaire is designed to measure the anxiety rate and it is including 21 statements. And every statement is reflecting one of anxiety sign that the individuals usually experience it that they are clinically anxious or someone who are in anxious situation. The individual should read the sign list and graded the intensity of every signs in the last week and mark his impressions in columns of never, rarely, moderate, and sever. The score of these 4 options are 0,1,2,3. The total score of experienced anxious is obtain from the sum score of every sign. The score domain can be from 0 to 63 and high score is an indicator of anxious severity. this scale is obtain high internal validity. And the correlation of its statement is from 30% to 71% . this test is executed for retest on 83 patient with a week interval and the correlation is obtained 75%. in an investigation by Kaviany and Musavy (2008) the reliability and validity of this questionnaire is tested and the results show that reliability is equal with 72%, validity is equal with 83% , and internal consistency is equal with 92%.

Treatment plan

The total frame of treatment sessions are consist of:

First session: the introduce of cognitive behavioural therapy and the process of its treatment , specifying the responsibility of elder and therapist in treatment process, expressing the elders main problems about anxiety , determining the correlation between cognition, emotion and behaviour , recording of life events on the basis of ABC model.

Second session: listing the elders main problems about sleep disorders in the frame of cognitive behavioural approach, expressing the common signs of insomnia for elders , the integration of cognitive triangle (negative thought about itself, negative thought about others and word, negative thought about future) in treatment strategy , redesign of negative automatic thought.Third session: continuation of work with automatic thought, investigation of inefficient thought record, self discovery, challenging automatic thought sacrat questioning.Forth session: sleep health instruction, explaining the components and factors of sleep quality and its effective factors on elders.

Fifth session: investigating of behavioural factors of elders sleep problems consist of attention to problem solving, completing the tab of constructive concern by elders.

Sixth session: investigation and integration of all cognitive behavioural therapy factors of elders sleep problems, the usage of practical exercise of thought record (situation , mood, thought, approving or rejecting testimonies of thought, adoptive or confrontational phrase, experience of different feeling)

Seventh session: investigation and total review of cognitive behavioural therapy of elders anxiety (normalization than first, high probability of threaten, exaggeration about the severity of threaten, helplessness hypothesizes, underestimate the safety, diagnostic of anxiety automatic thought, collecting of testimony, analyses of pros and pro, decatastrophizing of fear, correction of thoughts errors, develop alternative strategies, practice of normalization approach.

Eighth session: programming for learned skills for decrease of elders anxiety (moderation of anxiety thought, concentrate on physical signs, finding the testimony based on safety, breath control, beginning of relaxation, full imagination of mastery.

Ninth session: designing the methods for elders adherent to cognitive behavioural therapy

Tenth session: group discussion about presented treatment methods, and its efficiency in relation to decrease of anxiety and improvement of elders sleep quality from

their language and at last execution of pre-test.

Finding

With attention to investigation method and experimental design, the covariance analysis is used for moderation of pre-test and control of its effects on post-test results. To do the covariance analysis, at first the hypothesize of this analysis are investigated :1-normal distribution of dependent variable (by Shapiro Wilks –kolmogorov-Smirnov test), 2-homogenity of variances (by Levene test),3- lack of correlation of covariates with each other (by Pearson correlation test), 4-regression gradient homogeneity(calculated by interaction F between covariate and independent),5- linear covariate regression and dependent (by covariance analysis).

With attention to it that significance level in pre-test of anxiety scale is equal with 0.08 and in post-test it is equal with 0.13 , so null hypothesis does not rejected, and the results of data's being normal investigation is concordance with normal distribution by means of Shapiro Wilks test ($p<0.05$). significance level in Levene test is more than 0.05 , it means that significance level in experimental group is equal with 0.07 and in control group it is 0.51 , so the variance homogeneity hypothesise is confirmed in two groups ($p<0.05$). the amount of interaction F , between covariate variable or pre-test and dependent variable is more than 0.05 and is equal with 10.44 . so it can be concluded that the null hypothesis does not rejected , and the presupposition of regression gradient line is acceptable ($p<0.05$).

The covariation between covariate variables is investigated in this research . the result of this investigation show that Pearson correlation index is less than 0.80 and it is meaningful.

Table 1- mean and standard deviant of elders anxiety in pre-test and post-test

Control		Experiment		phase	Variable
Standard deviation	mean	Standard deviation	mean		
8/66	25/80	13/73	33/40	Pre-test	Anxiety
8/68	26/6	3/75	19/10	Post-test	Anxiety

Mean and standard deviation of anxiety scale in pre-test phase and in experimental group in order is equal with 33.40 and 13.73 , and this amount in pre-test phase in control group is 25.80 and 8.66. also mean and standard deviation of anxiety scale in post-test phase and in experimental group in order is equal with 19.10 and 3.75 , and this amount in post-test phase in control group is 26.6 and 8.68.

Table 2- mean and standard deviant of elders sleep quality in pre-test

Control		experiment		Phase	Variable
standard deviation	mean	standard deviation	mean		

0/87	1/90	1/03	2/20	Pre-test	Sleep latency
0/82	2/30	0/70	2/50	Pre-test	Sleep duration
1/58	1/50	0/69	2/60	Pre-test	Sleep efficiency
0/78	2/20	0/69	2/40	Pre-test	Sleep disturbance
0/87	1/90	0/91	1/80	Pre-test	Subjective quality of sleep
0/78	0/80	0/78	1/20	Pre-test	Day time dysfunction
0/48	0/30	1/44	0/90	Pre-test	Use of sleep medication

Mean and standard deviation of sleep latency scale in pre-test phase of experimental group in order is equal with 2.20 and 1.03 , and this amount in pre-test control group is equal with 1.90 and 0.87 . Mean and standard deviation of sleep duration scale in pre-test phase of experimental group in order is equal with 2.50 and 0.70 , and this amount in pre-test control group is equal with 2.30 and 0.82 . Mean and standard deviation of sleep efficiency scale in pre-test phase of experimental group in order is equal with 2.60 and 0.69 , and this amount in pre-test control group is equal with 1.50 and 1.58 . Mean and standard deviation of sleep disturbance scale in pre-test phase of experimental group in order is equal with 2.40 and 0.69 , and this amount in pre-test control group is equal with 2.20 and 0.78 . Mean and standard deviation of subjective quality of sleep in pre-test phase of experimental group in order is equal with 1.80 and 0.91 , and this amount in pre-test control group is equal with 1.90 and 0.87 . Mean and standard deviation of day time dysfunction in pre-test phase of experimental group in order is equal with 1.20 and 0.78 , and this amount in pre-test control group is equal with 0.80 and 0.78 . Mean and standard deviation of sleep duration scale in pre-test phase of experimental group in order is equal with 1.44 and 0.90 , and this amount in pre-test control group is equal with 0.30 and 0.48 .

Table 3- mean and standard deviant of elders sleep quality in post-test

Control		experiment		Phase	Variable
standard deviation	mean	standard deviation	mean		
0/86	2/33	0/31	1/10	Post-test	Sleep latency

0/52	2/50	0/42	1/20	Post-test	Sleep duration
1/41	1/70	0/31	0/90	Post-test	Sleep efficiency
0/65	1/55	0/53	0/48	Post-test	Sleep disturbance
0/87	2/20	0/69	0/60	Post-test	Subjective quality of sleep
0/81	1	0/51	0/60	Post-test	Day time dysfunction
0/44	0/22	0/31	0/10	Post-test	luse of sleep medication

Mean and standard deviation of sleep latency scale in post-test phase of experimental group in order is equal with 1.10 and 0.31 , and this amount in post-test control group is equal with 2.33 and 0.86 . Mean and standard deviation of sleep duration scale in post-test phase of experimental group in order is equal with 1,20 and 0.42 , and this amount in post-test control group is equal with 2.50 and 0.52 . Mean and standard deviation of sleep efficiency scale in post-test phase of experimental group in order is equal with 0.90 and 0.31, and this amount in post-test control group is equal with 1.70 and 1.41 . Mean and standard deviation of sleep disturbance scale in post-test phase of experimental group in order is equal with 0.48 and 0.53 , and this amount in post-test control group is equal with 1.55 and 0.65 . Mean and standard deviation of subjective quality of sleep in post-test phase of experimental group in order is equal with 0.69 and 0.60 , and this amount in post-test control group is equal with 2.20 and 0.87 . Mean and standard deviation of day time dysfunction in post-test phase of experimental group in order is equal with 0.60 and 0.51 , and this amount in post-test control group is equal with 1 and 0.81 . Mean and standard deviation of sleep duration scale in post-test phase of experimental group in order is equal with 0.31 and 0.10 , and this amount in post-test control group is equal with 0.22 and 0.44 .

Table 4- covariance analysis on pre-test and post-test scores of experimental and control group of elders anxiety

Source	Type III sum of squares	df	Mean squared	F	Significance level
Corrected model	705/04	2	352/52	15/70	0/0001
Intercept	251/57	1	251/57	11/21	0/004
Pre-test of anxiety	423/79	1	423/79	18/88	0/0001
Group	509/19	1	509/19	22/69	0/0001
Error	381/50	17	22/44		
Sum	11529	20			
Corrected sum	1086/55	19			

As it is demonstrated the pre-test mean of anxiety variable do not show any significance different in control and experimental groups. But at post-test phase the mean of

experimental group is 19.10 and the mean of control group is 26.6 and it has a significance changes. According to covariance analysis results of pre-test and post-test of anxiety in table 4, the amount of F , that is the covariate variable of this test, in anxiety variable pre-test is equal with 18.88 , and this amount of F is meaningful. Also the main output of covariance analysis is mentioned in 'group' section , and the amount of F in it is indicator of the independent variable effect or anxiety scale post-test, and is equal with 22.69 , and this amount of F is meaningful , it means that after deleting the pre-test effect (covariate variable) there is meaningful different between post-test mean scores of experimental group with post-test of control group, in decrease of elders anxiety. So the first hypothesise is confirmed based on that cognitive behavioural therapy is effective on decrease of elders anxiety.

Table 5- covariance analysis on pre-test and post-test scores of experimental and control group of improvement of subjective sleep quality of elders

Sources	Type III sum of score	Df	Square mean	F	Significance level
Corrected model	705/045	2	352/522	15/709	0/0001
Intercept	251/570	1	251/570	11/210	0/004
Pre-test of subjective quality of sleep	423/795	1	423/795	18/884	0/0001
Group	509/194	1	509/194	22/690	0/0001
Error	381/505	17	22/441		
Sum	11529/000	20			
Corrected sum	1086/550	19			
a. R Squared = .649 (Adjusted R Squared = .608)					

Table 6- covariance analysis on pre-test and post-test scores of experimental and control group of improvement of sleep duration of elders

Source	Type III sum of square	df	Square mean	F	Significance level
Corrected model	705/045	2	352/522	1/7095	0/0001
Intercept	251/570	1	251/570	1/2101	0/004
Pre-test of sleep duration	423/795	1	423/795	1/8848	0/0001
Group	509/194	1	509/194	2/6902	0/0001
Error	381/505	17	22/441		
Sum	11529/000	20			
Corrected sum	1086/550	19			

a. R Squared = .649 (Adjusted R Squared = .608)

Table 7- covariance analysis on pre-test and post-test scores of experimental and control group of improvement of sleep efficiency of elders

Source	Type III square sum	Df	Mean square	F	Significance level
Corrected model	17/778	2	8/889	3/1724	0/0001
Intercept	0/005	1	0/005	0/021	0/887
Pre-test of sleep efficiency	14/578	1	14/578	5/0426	0/0001
Group	8/114	1	8/114	3/1941	0/0001
Error	4/442	17	0/260		
Sum	56/000	20			
Corrected sum	22/200	19			

a. R Squared = .801 (Adjusted R Squared = .777)

Table 8- covariance analysis on pre-test and post-test scores of experimental and control group of decrease of sleep disturbance of elders

Source	Type III square sum	df	Mean square	F	Significance level
Corrected model	15/677	2	7/839	25/272	0/0001
Intercept	0/003	1	0/003	0/008	0/929
Pre-test of sleep disturbance	14/427	1	14/427	46/514	0/0001
Group	5/839	1	5/839	18/824	0/0001
Error	5/273	17	0/310		
Sum	63/000	20			
Corrected sum	20/950	19			

a. R Squared = .748 (Adjusted R Squared = .719)

Table 9- covariance analysis on pre-test and post-test scores of experimental and control group of decrease of sleep latency of elders

Sources	Type III of square sum	df	Mean square	F	Level of significance
Corrected model	8/232	2	4/116	11/074	0/001
Intercept	2/685	1	2/685	7/225	0/016
Pre-test of sleep latency	2/182	1	2/182	5/871	0/027
Group	7/115	1	7/115	19/145	0/0001
Error	6/318	17	0/372		
Sum	69/000	20			
Corrected sum	14/550	19			

a. R Squared = .566 (Adjusted R Squared = .515)

Table 10- covariance analysis on pre-test and post-test scores of experimental and control group of decrease of daytime dysfunction of elders

Sources	Type III of square sum	Df	Mean square	F	Significance level
Corrected model	6/232	2	3/116	17/849	0/0001
Intercept	0/077	1	0/077	0/441	0/515
Pre-test of daytime dysfunction	5/432	1	5/432	31/116	0/0001
Group	2/149	1	2/149	12/308	0/003
Error	2/968	17	0/175		
Sum	22/000	20			
Corrected sum	9/200	19			

a. R Squared = .677 (Adjusted R Squared = .639)

Table 11- covariance analysis on pre-test and post-test scores of experimental and control group to decrease the use of sleep medication of elders

Sources	Type III of square sum	df	Square mean	F	Significance level
Corrected model	1/040	2	0/520	4/093	0/035
Intercept	0/095	1	0/095	0/750	0/398
Pre-test of use of sleep medication	0/840	1	0/840	6/611	0/020
Group	0/472	1	0/472	3/712	0/071
Error	2/160	17	0/127		
Sum	4/000	20			
Corrected sum	3/200	19			

a. R Squared = .325 (Adjusted R Squared = .246)

According to 5-11 tables, in pre-test variables part of : subjective sleep quality, sleep duration, efficiency of sleep, sleep disturbance, sleep latency, daytime dysfunction disorder, use of sleep medication , that are covariate variable of present investigation the amount of F in order is equal with, 18.88 , 18.88, 56.04, 46.51, 5.87, 31.11, 6.61 and these amount of F are meaningful. Also main output of covariance analysis is mentioned in 'group' section and the amount of F is indicator of independent variable effect or post-test of subjective sleep quality, sleep duration, efficiency of sleep, sleep disturbance, sleep latency, daytime dysfunction disorder, use of sleep medication and the amount of it in order is equal with 22.69, 22.69, 31.19, 18.82, 19.14, 12.30, 3.71 that this amount of F is also meaningful. It means that after deleting the effect of pre-test (covariate variable) , there is meaningful differences between the mean score of the post-test of experimental group with post-test of control group in subjective sleep quality, sleep duration, efficiency of sleep, sleep disturbance, sleep latency, daytime dysfunction disorder, use of sleep medication of elders. so the second hypothesis of this investigation is confirmed based on that the cognitive behavioural therapy is efficient on improvement of sleep quality of elders.

Conclusions

This investigation is done with the aim of determining the effect of cognitive behavioural therapy on decrease of anxiety and increase of sleep quality of elders. The statistical population of this study is included the elders of Karaj Kahrizak day care section , who were suffering from anxiety and sleep disorders and they were more than 60 years old. The methods of collecting information in this research included the use of books, internet, articles, and published thesis in this field. Also the tools of this investigation included Beck anxiety index, and Petersburg sleep quality questionnaire , this investigation in terms of purpose is one of the functional investigation and in terms of the manner of collecting data is considered as one of the semi-experimental investigations. The subjects of this investigation include two experimental and control group. The data collecting is executed in pre-test and post – test phases. More over with attention to method of research and experimental design for testing of hypothesises and for moderate pre-test and control of its effect on post-test results , the covariance analysis is used.

For testing the first hypothesis , a treatment based on cognitive behavioural point of view on decrease of Kahrizak elders anxiety is investigated by question about lack of peace , nervousness, trembling of hands, terror, heartbeat, the feel of fear and weakness. The investigation of anxiety mean of participant elders in this research with two time measuring pre-test and post-test is indicated the decrease of elders anxiety. The efficiency of cognitive behavioural therapy on elders anxiety is measured by covariance analysis. The results show that there is meaningful differences the post-test mean score of experimental group with post- test of control group, after the control of primary differences in pre-test. So the null hypothesize is rejected and the significance of cognitive behavioural therapy is confirmed on anxiety variable. So for clarification of these results it should be stated that the cognitive behavioural therapy can be effective on decrease of elders anxiety. And this study is coordinate with Mc hugh, Hiron , Otto in 2010 about the cognitive behavioural techniques with pharmacotherapy or alone and its important role in depression and anxiety management and correlation with others and it causes to increase the individuals satisfactory than their life. Also Ladoser and his co-workers received that cognitive behavioural therapy is an effective treatment for generalized anxiety disorder [26].

The present results can be explain by considering that for correct understanding of

cognition base of anxiety , many samples are needed such as beginners, physical signs, anxious base thought, and individual thought errors in dairy experience. Since most of the anxiety periods are accompanied with excessive worry , recognition of individual worry identity is considered as an important factor in investigation. In cognitive behavioural method anxiety decrease when the anxious thought method of individual is changed to normalized point of view that is based on more realistic and moderated point of view about threat , dangerous and vulnerability. The correction of exaggeration thought about threat and dangerous is initialized with recognition of self-ability for more normal thought model along the anxious mood. Gain skill in recognition of interpretation and automatic anxious thoughts is the prerequisite of learning the method of exaggeration thought correction about threat and dangerous. Daily exercise of asking anxious thoughts, is very effective for initialize the hesitation about the individual anxious automatic interpretation. Frequent reminders of short-term and long-term expenditure of anxious thought is another important cognitive strategy for strengthen the hesitation about individual anxious validity. There is fundamental underlying fear in most of anxious individuals, that enhancement their anxious mood. Confrontation with worst scenario and solving it by effective and reasonable confrontation program is helped in weakening the root of anxiety. Formulate a point of view or understanding of reasonable, realistic and probable substitutes about anxious topics is considered as the most important factor of the mental fundamental evaluation of anxious individual.

For testing the second hypothesise ,the cognition behavioural therapy on improvement of sleep quality of elders is investigated , and its details is consist of : the investigation of subjective sleep quality, sleep latency, sleep duration, sleep efficiency, sleep disturbance, use of sleep medication, and daily dysfunction disorder. The investigation of the mean sleep quality of participant elders in this investigation and on these 7 scales during two times measuring of pre-test and post-test is indicating of increase in sleep quality of elders. The efficiency of cognitive behavioural therapy on elders sleep quality is evaluated by covariance analysis. Findings show that there is meaningful differences between the mean of post-test of experimental group with the post-test of control group after the control of primary differences in pre-test. So the null hypothesis is rejected and the significance of cognitive behavioural therapy is confirmed on sleep quality variable. So for clarification of these results it should be said that the cognitive behavioural therapy can be effective on improvement of elders sleep quality and this finding is coordinate with other studies such as Mottaghy and co-workers (2016), in the study investigated the efficiency of cognitive behavioural therapy on sleep quality of elders suffered from insomnia disorder. On the basis of the findings of this study cognitive behavioural therapy improvement the total quality of elders sleep and the signs of insomnia disorder is decreased on them [27]. Hedayat and Arefy (2015), in an study investigated the efficiency of cognitive behavioural therapy on improvement of elders sleep quality. The result of study showed that cognitive behavioural therapy can lead to improvement of elders sleep quality [28]. Also Richter and co-workers (2014), in an study investigated the efficiency of cognitive behavioural therapy, a lot of light and exercise on treatment of elders who suffering from multiple sleep disorder. The results of this study indicated that the combination of non-pharmacological treatment with use of cognitive behavioural therapy, light therapy and exercise is very effective in elders who suffer from multiple sleep disorder and also the depression syndrome is extremely decreased on them [29].

Background factor, activating events, continuous mechanism have an important role in creation of early and chronic sleep disorder. Some people may be vulnerable in front of sleep problems. This group of people have weak physical sleep system that make them vulnerable to weak sleep in confrontation with psychological stress. If these individuals confronted with activating conditions – such as a stressful event in life, unexpected sudden change in sleep program- they will experience the acute sleep insomnia. This sleep problem itself continued by a group of psychological and behavioural factors that are created in response to sleep problem. Specially the manner of individual thinking about the sleep problem and the methods that is used for coping with it, usually lead to continuation of sleep problem during the time. So cognitive behavioural therapy of sleep problem take step to improve the sleep quality of individual, with attention to change of its behaviour and at the same time the manner of management of negative thoughts that disturbs the individual sleep.

The limitations of present research is consist of it that earning livelihood, rent a house, lack of proper health insurance, and suffering many physical problems are important factors in creation of anxiety in elders , so merely use of pharmacological or psychological treatments for decrease of anxiety is not enough in this vulnerable class and it needs to special attention of government to their problems.

It is suggested with considering that the present research had been done on lady elders of Karaj Kahrizak, an investigation is done on men elders. Also for abundant correlation between children problems and creation of anxiety in their old parents suggested that some workshops to be held to instruct to the elders the correct manner of confrontation with the problems of their children and also some workshops to be held for familiarity of their children with probable mental problems of elders in case of direct exposure with their children problems.

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