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Effects of Relaxation Exercises Combined with Breathing Exercises on Psychological Conditions in Psychiatric Patients

Psikiyatrik Hastalarda Solunum Egzersizleri İle Birlikte Gevşeme Egzersizlerinin Psikolojik Duruma Etkisi

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Abstract

Aim: Psychiatric disorders have been known for centuries as a serious individual and public health problem in terms of suicide, job loss and relapse. The aim of this study was to investigate

Öz

Amaç: Psikiyatrik bozukluklar, intihar, iş kaybı ve hastalığın nüks etmesi açısından yüzyıllardır ciddi bir bireysel ve halk sağlığı problemi olarak bilinmektedir. Bu çalışma, psikiyatri hastalarında gevşeme ve nefes egzersizlerinin kaygı ve

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the effects of relaxation and breathing exercises on anxiety and depression in psychiatric patients.
Method: This study was conducted with 40 (18 females, 22 males) inpatients in Psychiatry Clinic of Hatay Mustafa Kemal University According to the power analysis results, Type1 error = 0.05 alpha Type2 error beta 80% was calculated to make a significant difference in the 1st and 2nd evaluations. Health Application and Research Hospital. Individuals have been enrolled in a relaxation exercise program combined with breathing exercises every day for 3 weeks accompanied by a physiotherapist. Individual's levels of psychological symptoms have been assessed with Symptom Check List-90-R Psychological Symptoms Screening Test.
Results: The mean age of the participants was 30.45, standard deviation value 8.63 years. A significant recovery has been observed in the psychological symptoms of individuals in all sub-parameters of SCL-90-R screening test after the exercise program ($p<0.05$).
Conclusion: In this study, it was found that breathing and relaxation exercises applied to psychiatric patients contributed to the reduction of psychiatric symptoms. In addition, it was found that breathing and relaxation exercises performed with physiotherapists positively affect the treatment process of psychiatric patients and may contribute to the early discharge of these patients.

Keywords: Relaxation Exercises, Breathing Exercises, Psychological Disease

depresyon üzerindeki etkilerini incelemek amacıyla yapıldı.
Yöntem:. Bu çalışma Hatay Mustafa Kemal Üniversitesi Sağlık Uygulama ve Araştırma Hastanesi Psikiyatri Kliniğinde yatan 40 kişi (18 kadın, 22 erkek) ile yapıldı. Power analiz sonucuna göre 1. ve 2. değerlendirmelerde anlamlı fark olabilmesi için Tip1 hata =0,05 alfa Tip2 hata beta %80 olarak hesaplanmıştır. Bireyler, bir fizyoterapist eşliğinde 3 hafta boyunca her gün nefes egzersizleri ile birlikte gevşeme egzersiz programına dahil edildi. Bireyin psikolojik semptom düzeyleri, Belirti Kontrol Listesi 90-R-Psikolojik Semptom Tarama Testi ile değerlendirildi.
Bulgular: Katılımcıların yaş ortalaması 30.45, standart sapma değeri 8,63 idi. Egzersiz programından sonra BKL-90-R Tarama Testinin tüm alt parametrelerinde bireylerin psikolojik semptomlarında anlamlı bir iyileşme gözlendi ($p <0.05$).
Sonuç: Bu çalışma ile psikiyatri hastalarına uygulanan solunum ve gevşeme egzerizlerinin psikiyatrik semptomların azalmasına katkı sağladığı tespit edilmiştir. Ayrıca fizyoterapist ile yapılan solunum ve gevşeme egzersizlerinin psikiyatri hastalarının tedavi süreçlerini olumlu yönde etkilediği ve bu hastaların erken dönemde taburcu olma durumlarına katkı sağlayabileceği bulunmuştur.

Keywords: Gevşeme Egzersizleri, Solunum Egzersizleri, Psikolojik Hastalık

Introduction

Psychological disorders are clinically important behavioral and mental problems occurring dependently on the substantial problems of individuals, with disabilities or increasing necrophobia, pain or lacking personal freedom[1]. In the studies conducted, symptoms such as depression, nervousness, tension, jaundice, tremor, immobility or hypermobility, increase on heart rate, dyspnea or tachypnoea, inefficacy on physical activities, chest and back pains, dizziness, a high rate of job accident, constipation, tension-type headache, accompany psychiatric symptoms [2,3,4]. Results obtained in recent years regarding psychiatric disorders show that such disorders are commonly seen in the community. The most frequent psychiatric disorders are seen anxiety disorders, bipolar disorder, depressive disorders and alcohol, and substances abuse. Major depression is one of the most frequently seen disorders in psychiatry with a lifelong prevalence of 15% in general in society and 25% of female. Bipolar disorder has a lifelong prevalence at a level of 1% [5]. To get rid of the factors which have an adverse effect in terms of healing and enhancing the disorder, non-pharmacological methods are used for psychological disorders besides pharmacological methods. It has been indicated in a study that relaxation exercises combined with breathing exercises increase concentration, decrease anxiety, regulate heart rate and increase sleep quality. Deep breathing exercises have been indicated to regulate sleep and decrease anxiety and sympathetic activity [6]. Busch et al. (2012) concluded that relaxation exercises decrease muscular tonus, regulate sympathetic stimulation with anxiety and depression [7]. Additionally, relaxation with respiration has a physical effect resulting in a decrease in heart rate, metabolism, brain activities, and skin resistance. As a result, sympathetic activity is regulated [8]. In the literature, the effect of relaxation exercises on psychological disorders has been examined. We wanted to see the effect of relaxation exercises on psychological symptom levels in psychiatric patients together with breathing exercises.

H_0 : In psychiatric patients, breathing and relaxation exercise has no effect on psychological condition..

H_1 : In psychiatric patients, breathing and relaxation exercise has effect on psychological condition

METHOD:

The sample of this study consisted of 40 patients with a mean age of 30.35, standard deviation value 8.63 years in the Psychiatric Department of Hatay Mustafa Kemal University Health Application and Research Hospital. This study was performed from hospitalized patients. Individuals having mental retardation, those who are pregnant, patients with serious cardiac problems and exercise contraindicated have not been included in this study. The study was carried out after approval 30/10/2014 date from the Ethics Committee of the Hatay Mustafa Kemal University and January 2015 –June 2015 date obtaining a signed informed consent from the patients who were the volunteer to participate in the study. Our study was supported by The Scientific and Technological Research Council of Turkey (TUBITAK). (1919B011402486).

Clinical Examination:

The demographic information, smoking and alcohol consumption of the individuals and the drugs used were recorded. Psychological symptom levels of the individual were evaluated by SCL-90-R before and after treatment. Via the Symptom Check List Psychological Survey (SCL-90-Rek-1), somatization, obsession, anxiety, depression, paranoid, psychotic, phobic, interpersonal sensitivity and anger levels of the patients have been evaluated. Being a self-assessment type psychiatric survey tool, SCL-90-R's final shape has been formed by Derogatis [9]. SCLR-90-R has been designed to assess 9 special symptoms with its 90 items, including psychiatric symptoms and complaints. Turkish version of SCL-90-R's validity and reliability has been checked and its reliability coefficient has been determined to change between 0,63 and 0,83 [10,11].

SCL-90-R has 90 items in total and the items are divided into 9 subtests. These 9 subtests were composed of somatization (12 items), obsessive-compulsive symptoms (10 items), interpersonal sensitivity (9 items), depression (13 items), anxiety (10 items), hostility (6 items), phobic anxiety (7 items), paranoid thought (6 items), psychoticism (10 items) and mostly sleeping and eating problems. The items are graded from 0 to 4 (0: none, 1: a little, 2: moderate, 3: above moderate, 4: extremely). Dispersion of the symptoms was assessed with subscale grades. Division of the total score of all responses into the total number of items constituted the general severity score (GSI; general severity index). The scores from 0 to 1,5 show the symptom level normal, the ones from 1,6 to 2,5 high and the ones from 2,5 to 4,00 very high [12,13].

Treatment Protocol:

Physiotherapist performed 21 sessions of breathing exercises, breath control and posture exercises and relaxation exercises for groups of 5 people. Jacobson's progressive relaxation method was invented by Jacobson in the 1920s and emphasizes relaxation. Via the progressive relaxation method, the individual tenses and then relaxes the skeletal muscles. The training provides awareness of smaller differences instead of large differences between contraction and relaxation. Jacobson set forth the reciprocal affection between the brain and body's peripheral systems as a basis for this method. This method aims at decreasing anxiety and tension by using muscle control [14].

Relaxation exercise was performed with medication (antidepressant and antipsychotic). Relaxation exercise was performed in the supine position from distal to proximal 1-minute maximum contraction followed by 3 minutes of relaxation. Breathing exercises were studied as breathing control during relaxation. The session lasted an average of 25 minutes.

Statistical Analysis

SPSS 22.0 version statistical program was used in the data analysis of our study. Descriptive measures are summarized as mean±SD or percentage. The Paired-T Test was used to compare the differences between pre-intervention and post-intervention scores. Probability values of less than 0.05 were considered significant.

RESULTS

Participants were 45% female and 55% male. The marital status was 65% married and 35% single. Educational status was 5% illiterate, 32% primary school, 32% high school, 3% associate school, 28% postgraduate (Table 1).

Table 1: Demographic Characteristics of the Patients

		n	**%**
Gender	Female	18	45
	Male	22	55
Marital Status	Married	26	65
	Single	14	35
Education Status	Illiterate	2	5
	Primary School	13	32
	High School	13	32
	Associate School	1	3
	Postgraduate	11	28

The diagnoses of the patients were 5% alcohol addict, 7,5% anxiety disorder, 35% bipolar affective disorder, 2,5% bipolar affective disorder and manıc attack, 15% depression, 2,5% episode depressive, 5% majör depression, 2,5% manicepizot, 7,5% obsessive compulsive disorder, 5% obsessive compulsive disorder and depression, 12,5% psychosis (Table 2).

Table 2: Classification of the Patients Diagnoses

	n	**%**
ALCOHOL ADDICT	2	5.0
ANXIETY	3	7.5
BAD	14	35.0
BAD+MANIC ATTACK	1	2.5
DEPRESSION	6	15.0
EPISODE DEPRESSIVE	1	2.5
MAJOR DEPRESSION	2	5.0
MANICEPIZOT	1	2.5
OCD	3	7.5
OCD+ DEPRESSION	2	5.0
PSYCHOSIS	5	12.5

BAD: Bipolar Affective Disorder
OCD: Obsessive Compulsive Disorder
SCL-90-R results; pretreatment somatization score was found to be 72.5% and normal, it has been found 90% normal post-treatment. Whilst pretreatment anxiety score is 67.5% normal, it has been found 80% normal post-treatment. A 15% recovery has been seen at post-treatment obsession score concerning the pretreatment. A 7.5% recovery has been seen in the post-treatment depression score concerning pretreatment. Whilst the interpersonal sensitivity score is 47.5% normal in pretreatment, the interpersonal sensitivity score has been found 57.5% normal in the post-treatment. A 10% recovery has been seen at post-treatment psychotic score in comparison with pretreatment score. A 5% recovery has been seen in the post-treatment paranoid score in comparison with the pretreatment score. A 40% positive condition has been seen in the post-treatment anger score. While the pretreatment phobic score is 70% normal, it has been found 87.5% normal in the post-treatment.

This normalization has been determined to statistically significant when pretreatment and post-treatment somatization scores compared (t=2,449; p=0,019) (Table 3). SCL-90-R's subtest that is somatization improved after treatment.

Table 3: Pretreatment and Post treatment Evaluation of SCL-90 Psychological Symptoms Test

Psychological Symptom Screening Text Subtest	Before X±SD	After X±SD	t	P Value
Somatisation	**1,325±0,572**	**1,125±0,40**	**2,449**	**0,019**
Obsession	**1,875±0,722**	**1,575±0,594**	**3,204**	**0,003**
Anxiety	**1,475±0,750**	**1,225±0,479**	**2,449**	**0,019**
Depression	**1,85±0,833**	**1,575±0,712**	**2,211**	**0,033**
Interpersonal Sensitivity	**1,775±0,831**	**1,575±0,747**	**2,449**	**0,019**
Paranoid	**1,900±0,841**	**1,575±0,747**	**3,122**	**0,003**
Psychotic	**1,475±0,750**	**1,35±0,579**		
Phobic				

Anger			**5,099**	**0,0001**
	1,550±0,677	**1,725±0,750**		
Annexes			**2,508**	**0,016**
	1,650±0,735			
General Symptom Index		**1,275±0,554**	**-0,497**	**0,622**
	1,625±0,774			
		1,150±0,426		
		1,150±0,483		
		1,40±0,545		
		1,800±2,209		

SPaired T Test p<0,05

DISCUSSION

We found that relaxation exercises with breathing contributed to psychological symptom levels in psychiatric patients. In our study, it was seen in most of the SCR parameters improved. There are many treatments for psychiatric disorders such as non-pharmacological exercise, meditation, tai chi, qigong and yoga [15]. Shamus et al. had been reported a strong relationship between physical health and mental health. They had stated that physical exercise has a positive effect on mental health [16].

Oertel-Knöchel et al. studied that patients with schizophrenia and major depressive disorders; cognitive training and aerobic exercise, cognitive training and relaxation in patients with increased cognitive levels and a decrease in the severity of the disease showed that strongest effects in patients receiving combined cognitive and aerobic exercise[17]. Hassanpour-Dehkordi et al. indicated that progressive muscular relaxation leads to increased daily living activity, physical pain relief, public health, social function, emotional function [18].

The tendency to express emotional dysphoria generally with physical symptoms is defined as somatization [19,20].

In somatization, psychosocial and emotional problems are expressed with physical symptoms and medical care is sought by referring these symptoms to a physical disorder [21]. Our study has seen that somatization is high on 27.5% of the patients who got psychiatric diagnoses. These individuals that 64% have been seen to show normalization post-treatment.

Another striking aspect of our study is that 67.5% of obsessive disorders are in the first place in psychological disorders. Showing similarity with the studies in medical literature, this was especially significant with the rate of 80% on students [22]. Kök and et. al. (2000) detected the obsessive-compulsive symptom levels quite high in students in his study that he conducted at a reformatory. Interpersonal sensitivity subtest levels and depression symptom levels of the students were also determined high in the same study [23]. High attendance of students (25%) and men (55%) in this study corroborates that exercise therapy at psychiatric disorders will increase the attendance to rehabilitation. According to the studies conducted on this subject; men consult specialists for psychiatric support lesser in comparison with women. Men's seeking support more for physical disorders, their psychosocial problems and their expressing stress less have been stated as reasons for this situation [24]. Therefore, the practices included in this study such as the treatment of physical disorders like breathing controlled posture exercises, are thought to encourage male patients to ask for psychological treatment support. Besides, 15% recovery has been recorded comparing pretreatment on obsession as a result of this study and this recovery also carries statistical significance ($p<0.05$).

Via the SLR- 90 Symptom Check List Psychological Survey performed at pretreatment, somatization, obsession, anxiety, paranoid, psychotic, phobic, interpersonal sensitivity and anger levels of individuals have been determined. Significant recoveries have been recorded at all parameters of SLR-90 when the test results analyzed which was performed again at post-treatment ($p<0.05$). This result is supported by the other studies conducted at the literature and relaxation exercises' being breathing controlled draws attention to the positive impact on psychological disorders of the patients [25,26]. In a study conducted on mentally disabled adults whose chronological ages were 19-55 and mental ages 3-17, the effectiveness of relaxation techniques has been researched on the destructive behaviors of disabled individuals. At the end of 3 weeks of training, it has been reported that modified relaxation training is effective in stimulating and ensuring continuity of relaxation; the individuals show 74% less destructive behaviors during the day and have coherent effects on aggression and profanity

It is impossible to determine the length of the treatment period of patients in psychiatry [27]. Therefore, it is difficult to figure out how long it will last at the beginning of treatment. In general, psychotherapy is not a treatment method which gives results in a few weeks. Obtaining a good result can sometimes last for months and even years. Positive impacts of exercises on the decrease of psychiatric symptoms have been identified in this study and with the aim of shortening the length of hospital stays of patients and supporting their recoveries and treatment processes with a non-pharmacological method, it has been considered that the exercises combined with breathing exercises are needed to be included in the rehabilitation processes.

Study Limitations: The limitation of this study was the absence of a control group receiving only drug therapy in the same age group.

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REFERENCES

American Psychiatric Association (2013) Diagnostic and Statistical Manual of Mental Disorders. Fifth Ed. American Psychiatric Publishing

Alper Y, Aydın C, Kabaklıoğlu M T, Aktener E. (1990) Psikiyatri Polikliniğine başvuran 14-24 yaş grubu gençlerde semptom dağılımının SCL-90-R ile incelenmesi. XXVI. Ulusal Psikiyatri ve Nörolojk Bilimler Kongresi, Izmir

Altındağ Ö, Altındağ A, Soran N. (2007) Romatoid Artrit ve Osteoartrit Hastalarında Yetiyitimi ve Depresyon. Klinik Psikofarmakoloji Bülteni;17:24-29.

Anderson RJ, Freedland KE, Clouse RE, et. al. (2001) The prevalence of comorbid depression in adults with diabetes: a meta-analysis. Diabetes Care. Jun;24(6):1069-78. PubMed PMID: 11375373.

Ertan T. (2008) Psikiyatrik Bozuklukların Epidemiyolojisi. İ.Ü. Cerrahpaşa Tıp Fakültesi Sürekli Tıp Eğitimi Etkinlikleri 25, Türkiye'de Sık Karşılaşılan Psikiyatrik Hastalıklar Sempozyum Dizisi No:62, S:25-30

Caldwell C, Victoria HK. (2011) Breathwork in body psychotherapy: towards a more unified theory and practice. Body Movement and Dance in Psychotherapy; 6:89–101. doi.org/10.1080/17432979.2011.574505

Busch V, Magerl W, Kern U, et. al. (2012) The effect of deep and slow breathing on pain perception, autonomic activity, and mood processing – an experimental study. Pain Medicine;13: 215–228. doi: 10.1111/j.1526-4637.2011.01243.

Van Diest I, Verstappen K, Aubert AE, et. al. (2014) Inhalation/exhalation ratio modulates the effect of slow breathing on heart rate variability and relaxation. Applied Psychophysiology and Biofeedback; 39:171–180. doi: 10.1007/s10484-014-9253-x.

Deniz ME, Avşaroğlu S, Hamarta E. (2008) Psikolojik Danışma Servisine Başvuran Üniversite Öğrencilerinin Psikolojik Belirti Düzeyleri; 292.

Dağ İ. (1991) Belirti Tarama Listesi (SCL-90-R)'nin üniversite öğrencileri için güvenirliği ve geçerliği. Türk Psikiyatri Dergisi; 2:5-12.

Derogatis LR, Rickels K, Rock AF. (1976) The SCL-90 and the MMPI: a step in the validation of a new self-report scale. The British Journal of Psychiatry; 128:280-289. PMID: 1252693

Kass F, Charles E, Klein DF, et. al. (1983) Discordance between the SCL-90 and therapists psychopathology ratings. Archives of General Psychiatry; 40:389-393. doi:10.1001/archpsyc.1983.01790040043006

Parrott L. (1990) Helping Children Manege Stress: Some Preliminary observations. Child and Family Behavior Therapy; 12 (1): 69-73. doi.org/10.1300/J019v12n01_05

Jacobson E. (1970) Modern Treatment of tense patients including the neurotic and depressed, with case illustrations, follow-ups and EMG Measurements. Illinois: Charles C. Thomas, Springfield,

Saeed SA, Antonacci DJ, Bloch RM. (2010). Exercise, yoga, and meditation for depressive and anxiety disorders. American Family Physician Apr 15;81(8):981-6. Review. PubMed PMID: 20387774.

Shamus E, Cohen G. (2009). Depressed, Low Self-Esteem: What Can Exercise Do For You? Internet Journal of Allied Health Sciences and Practice; 7(2), 7.

Oertel-Knöchel V, Mehler P, Thiel C, et. al. (2014) Effects of aerobic exercise on cognitive performance and individual psychopathology in depressive and schizophrenia patients. European Archives of Psychiatry and Clinical Neuroscience . Oct;264(7):589-604. doi: 10.1007/s00406-014-0485-9. Epub 2014 Feb 2. PubMed PMID: 24487666.

Hassanpour-Dehkordi A, Jalali A. (2016) Effect of Progressive Muscle Relaxation on the Fatigue and Quality of Life Among Iranian Aging Persons. Acta Med Iran. Jul;54(7):430-6. PubMed PMID: 27424013.

Sayar K. (2002) Tıbben açıklanamayan belirtiler. Türk Psikiyatri Dergisi;13:222-231.

Spinhoven P, van der Does AJ. (1997) Somatization and somatosensory amplification in psychiatric outpatients: An explorative study. Compr Psychiatry 38:93-97.

Oliver MI, Pearson N, Coe N, et. al. (2005) Help-seeking behaviour in men and women with common mental health problems: cross-sectional study. British Journal of Psychiatry; 186:297-301. DOI: 10.1192/bjp.186.4.297

Janssens AC, van Doorn PA, de Boer JB, et.al. (2003) Impact of recently diagnosed Multiple Sklerozis on quality of life, anxiety, depression and distress of patients and partners. Acta Neurologica Scandinavica; 108: 389395. PMID: 14616290

Kök M. (2000). Yetiştirme Yurdunda Kalan Öğrencilerin Psikolojik Belirti Düzeylerinin Değerlendirilmesi. Pamukkale Üniversitesi Eğitim Fakültesi Dergisi; 3, s. 123-137.

Goodwin RD, Amador XF, Malaspina D, et. al. (2003) Anxiety and substance use comorbidity among inpatients with schizophrenia. Schizophrenia Research; 61:89-95. PMID: 12648739

Rothon C, Edwards P, Bhui K, et. al. (2010) Physical activity and depressive symptoms in adolescents: a prospective study. BMC Medicine; 8(32):1-9. doi: 10.1186/1741-7015-8-32.

Ergun N, Baltacı G. (2006) Spor Yaralanmalarında Fizyoterapi ve Rehabilitasyon Prensipleri, Ankara: Hacettepe Üniversitesi Fizik Tedavi ve Rehabilitasyon Yüksekokulu Yayınları

Reiger DA, Myers JK, Kramer M, et. al. (1984) The NIMH Epidemiologic Catchment Area program: Historical context, majör objectives, and study population characteristics. Archives of General Psychiatry; 41: 934941. PMID: 6089692