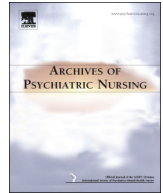




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Effects of Relaxation Exercises and Music Therapy on the Psychological Symptoms and Depression Levels of Patients with Schizophrenia

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A B S T R A C T

Purpose: This study aims to identify the effects of relaxation exercises and music therapy on the psychological symptoms and depression levels of patients with chronic schizophrenia.

Materials and methods: This semi-experimental study was conducted using pre- and post-tests with a control group. The study population consists of patients with schizophrenia who regularly attended community mental health centers in the Malatya and Elazığ provinces of Turkey between May 2015 and September 2015. The study's sample consists of 70 patients with schizophrenia ($n = 35$ in the control group; $n = 35$ in the experimental group) who were selected randomly based on power analysis. The "Patient Information Form," the "Brief Psychiatric Rating Scale (BPRS)" and the "Calgary Depression Scale for Schizophrenia (CDSS)" were used for data collection. Patients in the experimental group participated in relaxation exercises and music therapy 5 times a week for 4 weeks. The experimental group of 35 persons was divided into three groups of approximately 10–12 individuals in order to enable all participants to attend the program. No intervention was applied to the patients in the control group. The data were evaluated using percentage distribution, arithmetic means, standard deviations, Chi-square and independent samples t-tests.

Results: The study found that patients in the experimental group showed a decrease in total mean scores on the BPRS and CDSS; the difference between the post-test scores of the experimental group and the post-test scores of the control group was statistically significant ($p < 0.05$). The practice of relaxation exercises and music therapy was proven to be effective in reducing schizophrenic patients' psychological symptoms and levels of depression.

Conclusion: Relaxation exercises and music therapy can be used as a complementary therapy in the medical treatment of patients with chronic schizophrenia.

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Schizophrenia is a cluster of chronic symptoms that generally starts during youth and negatively affects individuals' affection, thinking, perceptions, behaviors and social relationships. The illness causes loss of competence, and sufferers are prone to relapses. According to epidemiological research carried out by the World Health Organization (WHO), more than 26 million patients suffer from schizophrenia worldwide. Both Turkish and global statistics suggest that schizophrenia has a very high prevalence and is becoming an important public health problem (Kwon & Gang, 2013; Möller, Hasan, & Falkai, 2015; Van Os & Kapur, 2009). In Turkey, schizophrenia has a rate of incidence of 8.9% (Binbay Tolga, 2011).

Even though pharmacological treatment is the first option in the treatment of schizophrenia, it has limitations as a result of the chronic progress of the disease and patients' relapses, deficiency of insight and cognitive losses; indeed, in some cases, patients experience ongoing

negative symptoms despite medication (Ventura, Wood, Jimenez, & Hellemann, 2013). A number of studies have emphasized the importance of multi-model care, which involves psychosocial interventions being made in addition to pharmacological treatment (Pazvantoğlu, 2014).

Relaxation exercises and music therapy are among the methods used in the multidisciplinary treatment of patients with schizophrenia. The aim of relaxation exercises is to enable individuals to examine their entire body as soon as possible; more specifically, such exercises encourage patients to recognize tension in their bodies, control their muscles, decrease that tension and finally relax (Bulfone, Quattrin, Zanotti, Regattin, & Brusaferrro, 2009; Demir & Okanli, 2013; Georgiev, Probst, & De Hert, 2012; Vancampfort, De Hert, & Skjerven, 2012; Yildirim, 1991). The application potential of relaxation exercises is increased by their efficiency, flexibility and low cost. The exercises also have minimal side effects, which means they are accompanied by a lower risk than psychotropic drugs. Relaxation exercises are an alternative method of treatment that targets both the body and the mind (Lafçi, 2009; Paikkat, Singh, & Singh, 2012; Vadas, Bloch, & Haliba, 2008). Music-aided relaxation exercises are especially effective in decreasing

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tension, anger, anxiety, depression and stress levels (Bulfone et al., 2009). Georgiev et al. determined that 64 schizophrenic patients who participated in relaxation exercises showed decreased levels of stress and anxiety. Similarly, Vadas et al. found that music-aided relaxation exercises applied 30 minutes a day for 8 weeks helped 24 schizophrenic patients to reduce their depression and anxiety levels and to increase their sleep quality.

In several of the studies just mentioned (Bulfone et al., 2009; Vadas et al., 2008), researchers observed that music positively affected hormones like serotonin, dopamine, adrenalin and testosterone, each of which influences the development of mental disorders and regulates the emotional condition of individuals. Music was also found to regulate physiological functions such as blood pressure and respiratory rhythm and to balance ratios of oxygen and blood in the brain. Music is deeply tied to what it means to be human and thus has multiple positive effects when used in therapies (Lafçi, 2009; Paikkat et al., 2012). Music has been used for therapeutic purposes in the treatment of numerous diseases, including acute psychotic disorder, schizophrenia and personality disorder (Gençel, 2006). Music therapy can take one of two forms: active or passive. In active music therapy, individuals use musical instruments, while in passive music therapy, individuals listen to music either on stage or on tape (Aldridge, 1994). In their study of 37 patients with schizophrenia, Ulrich, Houtmans, and Gold (2007) found that individuals in their experimental, but not in their control, group saw a decrease in negative symptoms after music therapy. Another meta-analysis study found that music therapy was an efficient means of encouraging mental recovery in patients with schizophrenia (Gold et al., 2005). In particular, group music therapy for schizophrenic patients has been found to increase quality of life and to decrease negative symptoms (Hannibal, Pedersen, & Hestbaek, 2012; Kwon & Gang, 2013; Ulrich et al., 2007). In their study of 67 patients with schizophrenia, Peng, Koo, and Kuo (2010) found that music therapy decreased the psychological symptoms of patients with schizophrenia. Similarly, Kwon (Naess & Ruud, 2007) reported that music therapy applied twice a week for 7 weeks decreased the psychotic symptoms of schizophrenic patients and caused a positive change in their social interactions and behaviors. Finally, applying music therapy 30 minutes a day over the course of a month, Sousa and Sousa (2010) studied 272 schizophrenic patients and found that such therapy could be used alongside pharmacological treatment to decrease patients' symptoms and depression.

The current study is one of the rare projects that combine music therapy and relaxation exercises. In order to fill the gap in existing literature, this study hypothesizes that music therapy and relaxation exercises can be simultaneously used as a complement to the pharmacotherapeutic treatment of patients with schizophrenia.

Observing patients with chronic schizophrenia, this study was conducted to determine whether music therapy and relaxation exercises affect patients' psychological symptoms and depression levels.

The following hypotheses are advanced:

H₁. : Music therapy and relaxation exercises are effective in decreasing the psychological symptoms of patients with schizophrenia.

H₂. : Music therapy and relaxation exercises are effective in decreasing the depression levels of patients with schizophrenia.

MATERIALS AND METHODS

Quasi-experimental in nature, this study was conducted using pre- and post-tests and a control group. The population of the study consisted of schizophrenic patients who were registered at and regularly visited the Malatya and Elazığ Community Mental Health Centers between May 2015 and September 2015. The study's sample group consisted of patients with schizophrenia who met the inclusion criteria in the aforementioned places and between the aforementioned dates. Using power analysis to determine the appropriate study sample, the

sample size was found to have a level of significance of 0.05, an effect size of 0.7 and power of the population representation of 0.95; the sample size was set at 70 (35 experimental, 35 control). The experimental group was selected from Elazığ Community Mental Health Center, and the control group was selected from Malatya Community Mental Health Center. Groups were allocated in this fashion to avoid possible undue influences from subject interactions; such influences might have arisen based on the close proximity of the medical centers and their similar profiles.

Inclusion criteria of the study; diagnosed with schizophrenia according to the *DSM-V* diagnosis criteria, open for communication and cooperation, resides in the city center of Elazığ/Malatya and between 18 and 60 years old. Exclusion criteria of the study; patients hospitalized for the first time, having other and/or additional axis 1 mental disorders (drug or alcohol addiction) and patients with organic brain syndrome or mental retardation.

Measures

Personal Information Form

The Personal Information Form was prepared by the researchers and involved five questions regarding sociodemographic characteristics of patients.

Calgary Depression Scale for Schizophrenia (CDSS)

The scale was developed by Addington, Addington, and Maticka-Tyndale (1994) and the validity and reliability were studied by Aydemir, Esen Danaci, and Deveci (2000). The CDSS contains 9 items designed to measure depression in schizophrenia patients in acute and remission stages. The interview contains eight multiple choice questions and one question that the interviewer answers at the end of the interview. Each item is scored from 0 to 3 (0 is absent, 1 is mild, 2 is moderate, and 3 is severe). Results have shown that 4–5 points indicate minor depression and 6–7 points indicate major depression. This shows that the CDSS is diagnostically similar to conventional classification manuals. In this study, the Cronbach's alpha coefficient was found to be 0.83.

Brief Psychiatric Rating Scale (BPRS)

The original 16-item BPRS (Overall & Gorham, 1962) and its modified versions are a widely used psychometric scale for assessing the severity of clinical symptoms of patients with schizophrenia. The scale is highly sensitive to change, and excellent interrater reliability can be achieved when used by trained personnel. In this study, the 18-item Turkish version of the BPRS was used. Only the BPRS scale was translated into Turkish and first Yanbastı was used in Turkey. Scale studies have been performed. Because scale of validity and reliability is cross-cultural, availability levels were too low (Aydemir, 2014). The scale consisted of 18 items including somatic concern, anxiety, emotional withdrawal, conceptual disorganization, guilt feelings, tension, mannerisms and posturing, grandiosity, depressive mood, hostility, suspiciousness, hallucinatory behavior, motor retardation, uncooperativeness, unusual thought content, blunted affect, excitement, and disorientation. The scoring of each item used 0- to 4-point scale ranging from not present to extremely severe. The items of the BPRS were further divided into five subscales according to the results of a meta-analysis of factor analyses of BPRS. (Aydemir, 2014).

Study Process

The researcher primarily gave a seminar for the experimental group regarding how to apply the relaxation exercises and music therapy. Then, the experimental group of 35 persons was divided into three groups of approximately 10–12 persons in order to enable them to attend the application. The application was conducted by the researcher in an exercise hall in health center. The first group was taken into the

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