

# The Effect of Laughter Yoga Exercises on Anxiety and Sleep Quality in Patients Suffering From Parkinson's disease

Azadeh Memarian, Afsaneh Sanatkaran\*, Mohiaddin Bahari

Department of Physical Education and Sport Sciences, Karaj Branch, Islamic Azad University, Karaj, Iran

## Abstract

**Objectives:** the present research is done with the purpose of studying the effect of laughter yoga exercises on anxiety and sleep quality in patients suffering from Parkinson's disease. **Methods and tools of research:** the method is semi-empirical and in terms of obtaining results it was an applied research and research design used for this study, was a pretest – posttest with the control group. The statistical sample of the present research was 24 patients suffering from Parkinson disease who referred to Hazarate Raoul Allah hospital in Tehran, who aged between 55 to 75 and had requirements for entering into the research. These patients were randomly divided into two groups of 12 people, the control group, and the experimental group. Firstly, in the pretest step, the anxiety and the sleep quality of the patients suffering from Parkinson disease were measured respectively by the anxiety inventory of Beck (1988) and the sleep quality inventory of Pitezboung (1989) (PSQI) in both empirical and control groups, were measured. Then the empirical group, in addition to ordinary medical treatment did the exercises of laughter yoga, under the supervision of laughter Yoga Instructor for 8 weeks, two sessions per week, each session 45 minutes while patients in the control group, in this period except for medical treatments and their daily activities, did not any effective physical activity. After completing the exercises of laughter yoga, in the posttest, again the anxiety and sleep quality of patients in both groups were measured using questionnaires. According to, on the normality of research data, Mann-Whitney Nonparametric test was used. Also, all the analysis was done at a significance level of ( $P < 0.05$ ) by using SPSS software. **Findings:** results of Mann-Whitney test indicated that there is a significant difference between the average of stress changes and sleep quality of patients suffering from Parkinson disease in the exercise group of laughter Yoga and control group. Of course from the subscales of sleep quality, laughter Yoga was effective only on the subjective quality of sleep and latency in sleeping. While not observed a significant effect on the duration of sleep, the sleep efficiency, sleep disturbances, use of sleeping pills, and daily function disorders of patients. **Conclusion:** The results of this study show that laughter yoga exercises reduce anxiety and improve sleep quality in patients suffering from Parkinson disease. As a result, Laughter yoga exercises can be used as a complementary therapy along with other treatment methods to reduce anxiety and improve sleep quality in Parkinson's patients.

**Keywords:** yoga laughter, anxiety, sleep quality, Parkinson's disease

## Introduction

Parkinson's disease is a chronic and progressive central nervous system that classified into motor system disorders (Yaktamaram, 2009) and more focused on the elderly age group people (Usefi, Taadibi, Taherzadeh, 2009) and is a common cause of disability in this age (Afshar and Ghandhari, 2006). Movement disorders are neurological conditions in which a person is faced with the problem of slow controlled movements. Activities such as walking or taking a cup of tea may

be difficult. In some cases, people cannot relax their bodies and some parts of their body remain in constant motion (Emsaki, 2010). British doctor James Parkinson for the first time described Parkinson's disease in 1817. He called the disease "shaking paralysis" which today is known as Parkinson's disease (Abedzadeh, 2011). In 1960, the researchers found in their research that the cause of this disease is a dysfunction in an area of the brain. In this situation, the brain will not be able to produce a chemical called dopamine (a neurotransmitter) that is the main factor in the body muscle activity (Yaktamaram, 2009). Generally, Parkinson's disease occurs because of the reduction or loss of a major part of the nerve cells' that producing neurons dopamine chemical "in the region of the brain called the "Substantia Nigra", that this chemical is responsible for sending motor messages (Yaktamaram,2009). This disease leads to Bradykinesia, tremor and sometimes Mental Deterioration and disorders in the automatic nervous system (Najjaryan et al, 2007). As well as psychological problems such as depression, anxiety, self-doubt, sleep disturbances, fear, and shame are the implications of Parkinson's disease (Abedzadeh, 2011). Parkinson's disease can be seen in all countries, all ethnic groups and all social classes (Moshfeghi, 2009). Many studies estimate the prevalence of the disease at the same for men and women, but others know it more common than 3 to 2 in men than in women (Azizi Abarghooe, 2010). The cause of this disease is still not fully understood, but the probability of involvement of genetic factors (to a lesser extent) and environmental factors, including agricultural jobs, drinking water wells, village life and exposure to pesticides are raised in the etiology of this disease (Huang et al,2003). Neuropathology sign of the disease characterized by destruction of dopamine-producing cells in the substantia nigra of the midbrain. However, clinical signs of the disease observed when that with the loss of about 80 percent of the dopamine-producing cells in the midbrain, neurotransmission in the basal ganglia of the brain are disrupted. Decreased levels of dopamine and the subsequent disruption of the balance of dopamine and acetylcholine, that both of which considered as important body transmitters, created a variety of movement disorders (Hartman and Oertel, 2005). From the most important movement disorders in Parkinson's disease can be referred to reducing the balance, the lack of postural control and progressive reduction in the speed and range of motion that consequently another problem also appears (Moriss and Iansek, 1996). Increased risk of falling in the elderly patients, leading to fracture, dislocation and serious soft-tissues (Robinson, 2005). The balance Physiologically defined as interaction between levels of control mechanisms of, balance and biomechanically defined as the ability to maintain and return the center of gravity of the body within a stability that is determined by the base of support (Bellew et al,2003). Postural instability occurs as a result of decreased muscle strength and in combination with other complications that followed the destruction of dopamine-producing cells in the basal ganglia (Tinetti,2003). The researchers, have raised the impairment in excitation and inhibition in the basal ganglia and its relationship through direct and indirect ways, as the main cause of balance problems in this group of patients(Shannon,2004). on the other hand, the coincidence of sick and elderly increases the complications of this disease (Dibble et al,2006). With the arrival of old age some changes occurred in the musculoskeletal systems, vestibular system vestibular system, somatosensory system and visual system as the metabolic and physiological systems involved in balance and puts the elderly at risk of serious injuries, originating lack of balance including fractures and long disabilities. Researchers factors affecting postural control deficits in older adults divided into two categories: foreign and domestic factors. From external factors we can refer to uneven ground and the use of inappropriate shoes. While dysfunction in the performance of physiological systems of the body such as decreased muscle strength, decreased range of motion, reduction distance of sense of visual, vestibular and proprioceptive are referred to as internal factors (Lord et al,2001-

Giroux,2003). Thus the vicious circle reducing disease, aging and inactivity may lead to aggravation of the symptoms and secondary problems for patients. Abundant evidence shows that the value of fall in these patients compared with healthy elderly is much more (Nelson et al,2002). At present, elderly people constitute 7 percent of the population. Within the next twenty years, this percentage will exceed twice and in thirty or forty upcoming years the majority of the population will be elderly people (Haidari and Alirezaee,2007). Now, with the increasing elderly population of the world, increasingly the number of patients suffering from this disease increasing (Giroux,2007). Due to the progressive process of Parkinson's disease in the absence of control, everyday problems of these patients will be increased and its tangible outcomes are movement disorders, psychological and economic problems in society (Mouris,2000, quoted from Azizi Abarghoee,2010). Depression and anxiety in people who have recently been affected with Parkinson's disease is two times more likely than healthy people. People well known the tremor and movement problems caused by Parkinson's, but the disease begins, initially in the human brain and affects some of its chemical compounds which firstly may lead to sleep dysfunction and mild forms of depression. Sleep disorders are commonly seen in patients suffering from Parkinson's disease. Studies show that the prevalence of sleep disorders in Parkinson's disease is 60 to 98% (Covassin et al,2012). This figure is higher than the prevalence of this disorder in people who are not suffering from Parkinson's disease in the same age and sex (Scheller et al,2008). Parkinson's patients suffering from sleep disturbances, excessive daytime sleeping, the delay in falling asleep and difficulty in maintaining sleep (Iranzo et al,2011). In addition, pulmonary disorder during sleeping, restless legs syndrome, mood and behavioral disorders, rhythmic leg movements in sleep, are problems among this group of patients(Margis,2004). Despite the obvious disorders in the sleep of these patients, studies rarely addressed this issue (Naismith et al,2010). Various questionnaires are prepared to assess the presence or absence of sleep disorders and guidance to respond to treatment. Better treatment of non-motor disorders can improve the patient's problems (Askaryan,2012). The cause of insomnia in Parkinson's disease is multifactorial and include older age, nocturnal motor symptoms, psychological disorders, including depression and hallucinations and pharmacological effects. The is relationship between disease and severity of sleep disturbance (Najafi et al,2011) but in another study that carried out on sleep quality in patients suffering from Parkinson's disease. There was not found significant correlation between the duration and severity of sleep disorder (Asgarian,2012). In a study, a sleep tests the therapy on patients with Parkinson's disease were conducted and the conclusion obtained that the most common symptoms in these depressed patients were turmoil %43.2, anxiety %43.3, irritability %40.1(free,1998 quoted from Abedzadeh,2012). Patients suffering from Parkinson's disease often experience feelings of anxiety or fear attacks. Mood changes may be due to changes in drug levels (Soleymani &Yaghoobzadeh,2015). The most obvious manifestation of mental patients in patients suffering from Parkinson's disease, is anxiety and depression that is caused due to physical symptoms and created limitations associated with it. Tremors, slow movements and difficulty of movement caused social isolation of the patients. Abnormal gait, trapped legs while walking, falling, problems with speech and changes in the sound of patients all creates a feel of embarrassing in the patient that reduces the motivation and willingness to participate in social activities (Piers, Translation of Hemmatkhah,2008) and can affect the quality of life of Parkinson's patients. Including things that can improve the quality of life in these patients using complementary therapies. In addition to drug therapy exercise and physical activity as well as can be used as complementary therapy (Kikhay Hoseinpour,2012). Sport is a means to achieve the health and wellbeing. Engage in exercise leads to physical, mental and social health. Physical activity and

exercise is one of the ways that are used to prevent, delay or treat problems caused by the aging process and its positive impact has proved on the quality of life of elderly people (Shaumway and Woollacatt,2007, Quoted from Khorsand,2015). Laughter Yoga is a complementary therapy that is less studied. Laughter Yoga is a new technique that was invented in 1995 by a physician Hindi name Katarya and has been developed around the world in which, yoga breathing exercises combined with laughing exercises and includes a variety of funny sports(Pezeshki,2012). Laughter is an emotional reaction that affects human life and social life and has characteristics that distinguishes it from other emotional reactions(Pezeshki,2012). Extensive researches which have been done in the past two decades in various countries, have proven that laughter has a positive effect on the body devices and involved in the strengthening of the immune system. Scientists have found that laughter either has the preventive and therapeutic value (Katarya,2002, Translation of Pezeshki,2004). Laughter Yoga includes techniques of mind-body techniques and combines different methods of laughing with breathing exercises (Hassan and Hossein,2009, quoted from Kikhay Hosseinpour,2013). People who regularly doing laugh practice yoga, stated amazing effects in improving health, positive mental attitude and energy level(Pezeshki,2012)

If we refer to studies that have been done in the field of medical science, we are facing with many documents that prove when someone pretends to laugh and be happy, her body produces joyful chemicals. Thus, the origin of laughter is the same physiological changes occur in the body. Also according to principle “Motion Creates Emotion” if you put your body in a state of happy, mind to follow it, will take a happy state (Katarya,2002, Translation of Pezeshki,2004). Currently, increase the population of elderly people due to reduction in birthrate, improving health and increased life expectancy, has led to giving more attention to the problems of the elderly people(Abedzadeh,2012). The process of aging is a natural and inevitable issue that affects all aspects of biological and psychological of human. Under impact of this important phenomenon, the human usually to reach the youth ages, reaches to necessary grow and mature. Then, during adulthood, middle age and old age gradually in most areas of physical and mental sometimes a downside process led to atrophy and weakness due to old age. On the other hand, a sedentary lifestyle and contemporary rugs also by accelerating the aging process, will double physical problems, psychological, social and economic in old age. Due to the growing elderly population in the world, according to estimates, is projected to reach 3.1 billion by mid-century 21, it seems that human societies must now more than ever expected to find solutions for providing public health of this important group from community. As well as, due to close relationship body and mind, it is clear that declining physical abilities along with increasing social problems, economic and cultural life in old age can brought a fertile ground for physical and mental illnesses. Parkinson's after Alzheimer's in older adults is the most common disease. Although the motor ability of patients affected, but they significantly suffered from cognitive and behavioral impairment. Depression, dementia and mental disorders have a major impact on the quality of life for both patients and their families (Abedzadeh,2012). Laughter Yoga through releasing some neurotransmitters from brain cells and help to express feelings, emotions cure depression. According to modern medicine, disease comes from our minds and our thoughts create disease. According to these items the importance of doing this program in patients with Parkinson's disease is determined and we hope to do it take a small step towards the well-being of our elderly patients (Kikhay Hosseinpour,2013). The treatment of Parkinson's disease is in three parts, surgery medication, and the rehabilitation treatment. The choice of treatment takes place followed by a biography and a detailed history from disease and clinical and para-clinical evaluation. By reviewing the literature about role of interventions on the treatment of mental disorders in people

with Parkinson's we will find that, these interventions are mainly pharmaceutical, nutritional and physiological and the role of physical activities and different sport activities in the treatment of Parkinson's, have been less studied (Abedzadeh, 2012). Laughter from the exercise of the organs and muscles, strengthen the immune system, blood biochemical changes and oxygen, has a significant role in the prevention of diseases and even treatment it (Pezeshki, 2012). Therefore, due to problems such as depression, anxiety, loss of confidence, sleep disorders experienced by patients with Parkinson's disease since laughter Yoga as a complementary treatment is recommended to answer this question that whether a course of laughter Yoga exercises has impact on anxiety and sleep quality patients suffering from Parkinson disease.

## Methodology

This study, was done with the purpose of studying a course of laughter Yoga exercises on anxiety and sleep quality patients suffering from Parkinson. At the first, the statistical sample of present study were 30 patients suffering from Parkinson who referred to Hazarate Raoul Allah hospital in Tehran, who aged between 55 to 75 and had requirements for entering into the research. That being in a 1 to 3 stage of Parkinson disease according to Hoen and Yahr Scale (H&Y), lack of chronic heart and respiratory disease, lack of open surgery in the inner region in the last six months and don't having high blood pressure who were non randomly and voluntarily participated in this study, these patients randomly divided into two 15 individual groups, one of them experimental group and the other control group that flowingly 6 people due to the lack of continuous training, setting the machine DBS, and withdraw from work, were excluded from the study finally the remained patients were randomly divided into two groups of 12 people, the control group, and the experimental group. The participation of the people in this study was conducted with physicians and voluntarily. It should be noted that before the execution of the task, subjects of both groups agreed in its written consent to participate in research announced their satisfaction to engage in Laughter yoga classes. Also, before the beginning of the study, the Executive items approved in committee of the University. Firstly, in the pretest step, the anxiety and the sleep quality of the patients suffering from Parkinson disease were measured respectively by the anxiety inventory of Beck (1988) and the sleep quality inventory of Pitezbourg (1989) (PSQI) in both empirical and control groups, were measured. Then the empirical group, in addition to ordinary medical treatment did the exercises of laughter yoga, under the supervision of laughter Yoga Instructor for 8 weeks, two sessions per week, each session 45 minutes while patients in the control group, in this period except for medical treatments and their daily activities, did not any effective physical activity. After completing the exercises of laughter yoga, in the posttest, again the anxiety and sleep quality of patients in both groups were measured using questionnaires. According to, on the normality of research data, Mann-Whitney Nonparametric test was used. Also, all the analysis was done at a significance level of ( $P < 0.05$ ) by using SPSS software.

## Findings

Table 11 shows the relative frequency of gender variable, as it can be see %58.3 of participants are men and %41.7 are women.

Table 1. The relative frequency of the gender variable

gender	frequency	Relative frequency
Men	14	58.3
women	10	41.7

Mann-Whitney test results in Table 2 show that there is significant difference between average changes of anxiety in patients suffering from Parkinson's disease in practice group of Laughter Yoga (M=-2.83) and control group (M=0.50) (U=136, Z=3.76, P=0.000). Thus the null hypothesis rejected.in other words, Laughter Yoga exercises led to a significant decrease anxiety in patients suffering from Parkinson's.

Table 2. Results of Mann-Whitney test anxiety

U	Z	Sig.
135	3.76	0.000

Mann-Whitney test results in Table 3 show that, there is significant difference between average changes of sleep quality in patients suffering from Parkinson's disease in practice group of Laughter Yoga (M=-1.91) and control group (M=0.75) (U=138, Z=3.88, P=0.000). Thus the null hypothesis rejected.in other words, a course of laughter Yoga exercises led to a significant increase in sleep quality in patients with Parkinson's disease (because on the basis of scoring as much sleep quality score is less indicates a sign of better sleep quality).

Table 3. Mann-Whitney test results of sleep quality

U	Z	Sig.
138	3.88	0.000

## Discussion and Conclusion

Mann-Whitney test results in table 2 show that there is significant difference between the average changes in anxiety in patients with Parkinson in the group of Laughter yoga and the control group. In other words, a Laughter yoga exercises led to a significant reduction in anxiety of patients suffering from Parkinson's disease. According to literature review these results are consisting with results of Kherandish (2015), Eftekhari (2014), Badr (2014), Kikha Hasanpour (2013), Moshfeghi and Mavlavi (2013), Bagheri (2012), Behzadi (2011), Shahidi (2008), Hirotsaki (2013), Kasper (2012) Shin et al (2011), Lakvandrokor et al (2005) Bent et al (2003), Hased (2001), the results are not consistent with results of Omrani (2010). Due to the alignment of the results of this study with mentioned investigations, it seems that the main aspect of a mechanism that laughter through which influences the anxiety of people, related to the ability of laugh at establishing a positive emotional state. At the time of anxiety, the adrenal gland frees corticosteroid hormones that these hormones converted to Cortisol in the bloodstream. Cortisol also increases in response to stress. Brouk (1998) believes that positive activity emotions such as Laughter reduces the ordinary stress response and as a moderator, amend sympathetic stimulation after the stress (Shahidi,2008). Kikhay Hasanpour (2013) conducted a research with title the impact of laughter Yoga exercises on the motor and mental factors of patients suffering from Parkinson. Results of his study indicated that laughter Yoga exercises has a positive impact on reducing depression, improving quality of life and increasing motion performance, flexibility and pain reduction. He states in his conclusion that Parkinson patients due to lack of dopamine and serotonin, which can be seen in these people, can use laughter Yoga due to secretion normal hormones that helps reduction of depression. depression and anxiety are one of the most common mental symptoms in patients suffering from Parkinson that occur in the person because of the physical symptoms of the disease and the patient's disability. Laughter has many benefits on human health. Health Benefits that obtained of Laughter

Yoga including, physical, mental and emotional stress management. When stress comes down the immune system automatically become strong. Laughter also increases the oxygen supply to the cells of the body, strengthens the immune system, increase blood circulation and create a positive state of mind. Given the benefits of Laughter and its impact on multiple organ systems of the body in stressful conditions the body influenced by a series of hormonal and physical changes that cause damage to the person. So anything that reduce regularly the level of stress hormones in the blood helps to increase health. The Laughter is known as a good stress. In fact, joke and laugh by reducing Noroandocrin hormones, epinephrine and cortisol that are secreted in response to stress, causing the person to be calm (Kikhay Hasanpour,2013). Laughter, is one of the best, most cost-effective and easiest ways to relieve stress and relax the muscles of the body. Laugh by dilating blood vessels, transmits more blood to the farthest muscles throughout the body. Also a good laugh from the heart, reduces the secretion of stress hormones, epinephrine and cortisol. Can be said that laughter is an exercise in meditation or relaxation. When we are laughing there is no thought in our minds, all our senses to be synchronized for a brief moment to the natural way without any effort as a result, we feel joy, peace and comfort (Behzadi,2010). Also according to the theory of emotional discharge Laughter, the laugh socially is an acceptable way, to release the tension and stress (Wisonant,1998). Provine (2000) argues that, laughter in social interactions can be used as a stress relief mechanism. Spencer in theory of drain excitement, believes that the emotional and mental turmoil are producing a kind of energy that must somehow be used. He says nervous excitement tends to cause muscle tension and laughter, as a kind of physical movement, can act as a stream of various forms of nervous energy. Spencer by creating a Laughter idea to get rid of potential energy believes that each person through the process of daily stress management, constantly stacking energy and release this excess energy by laughing after a stressful day(Provain,2000). Behzadi (2010) conducted a research with the aim of evaluate the effectiveness of Katarya laughter therapy on increasing general health of elderly people residents in the nursing home of Shahid Hasheminejhad of Ray city. The results of data analysis of research data showed that Katarya laughter therapy, significantly has been effective on increasing public safety, improve physical symptoms, anxiety and insomnia, increase social dysfunction and reducing depression. According to the findings of this study we can conclude that Katarya Laughter therapy can improve public health and components related to it in the residents of nursing homes. Thus, this treatment method may be used as replacement pattern or supplement for improving public health in nursing homes residents. Hasd (2001) reviewed numerous clinical studies that all demonstrated that humor and laughter to reduce stress is a critical factor in all situations.it has effects on inflammatory disorders, asthma, cancer and heart disease. In his article, he identified several psychological impacts, including reducing stress and anxiety and improve mood, self-esteem and coping skills. In addition, he described a positive psychological effect on pain and increase the safety of certain factors, such as immunoglobulin A and white blood cells. Omrani (2010) conducted a research with the title of “The effect of music therapy, laughter therapy to reduce anxiety before surgery in women”. This study is a quasi-experimental and pretest – posttest with control group. In this study to measure stress Katal anxiety test is used. Results of this study shows that music therapy can reduce anxiety before surgery in women but Laughter does not have a therapeutic effect on anxiety of these people.in the conclusion of this study, not mentioned any research consisting with it and the reason for the lack of research in line with other studies in this area is not listed. Mann-Whitney test results in Table 3 show that there was no significant difference between

the mean changes in sleep quality in patients suffering from Parkinson's disease in Laughter Yoga exercise group and the control group. In other words, a Laughter yoga exercises led to a significant

increase in sleep quality in patients with Parkinson's disease (because on the basis of scoring the questionnaire of sleep quality as much sleep quality score is less indicates a sign of better sleep quality). According to literature this result is consistent with results of Badr (2014), Behzadi (2010), Fotuhi (2010) Co et al (2012), Hay Jingo (2007) and in the available resources there was not found a research not in line with result of this study. Due to the alignment of the research results with referred researches, to examine the effects of Laughter Yoga on sleep quality in Parkinson's patients. As mentioned in Chapter II, the quality of sleep of people with this disease is influenced by factors such as anti-Parkinson's medications, Akintik pains, dystonia, restless legs syndrome, panic attacks, anxiety and depression, parasomnia, sleep apnea and other items that were explained. Laughter Yoga with the impact of these items can be improved sleep quality and the absence of these disorders. Akintik pains usually occurred due to lack of mobility in these patients and lead to sleep disorders. Extreme rigidity, fever, pain in muscles and joints, headache and sometimes the pain in all parts of the body are its symptoms (Soleymani and Yaghobzadeh, 2016). While one of the most important benefits of Laughter, often reportedly leads to the release or secretion of endorphins that reduce pain and feel happy (Martin, 2001). Laughing, increase the value of endorphins that considered as natural painkillers. The endorphins that are secreted in the result of laughing can help to reduce pains in the people suffering from arthritis, inflammation of the spine and muscle spasms (Katarya, 2002, Pezeshki Translation, 2004). In fact, Laughter systematically as pain management technique is used for most incurable diseases. People who regularly applying laughter therapy endorphin secreted simply by a smile. A few minutes real laughing has results of the similar sports rowing or stationary bike in about 10 to 15 minutes. For the elderly who are not able to exercise Laughter is a good choice (Kikhay Hosseinpour, 2012). In addition to Akintik pains, as well as Dystonia, is involuntary muscle contractions of legs, fingers, wrists, ankles, and feet and often associated to painful cramps for Parkinson's patients (Soleymani and Yaghobzadeh, 2015). In this respect, we can say that Laughter Yoga improves muscles of the face, chest, abdomen, and musculoskeletal and muscle power and can be important and useful for hospitalized patients and elderly people who moving by wheelchair. Kazines (1979) described Laughter as running internal organs, which is effective even for the muscles of the digestive system, as well as the speed of digestion is improved (Kikhay Hosseinpour, 2012). Another important advantage of Laughter is decreasing muscle tension. Stress, keep muscles in a contraction state. If people can learn muscle relaxation method, as well as to reach peace psychologically. In muscle relaxation method, the therapist asks the patient firstly to contract a series from his body muscles and then relax them to feel relaxation in those muscles. Laughter decreases tension that exist in the neck, shoulder and abdomen muscles (Kikhay Hosseinpour, 2012). Panic attacks and anxiety caused sleep disturbance in people with Parkinson's. As mentioned in the first hypothesis, in fact, joke and laugh with reducing the hormones epinephrine and cortisol with increases in response to stress, cause to relaxing in person (Kikhay Hosseinpour, 2012). As in the theory of emotional discharge expressed Freud believed that the release of energy is an enjoyable experience that is expressed with good feeling that comes with a laugh. Thereby reducing the tension and stress (Shahidi, 2008). Behzadi (2010) conducted a research with the aim of studying the effectiveness Katarya laughter therapy on the value of increasing general health of the elderly people residents in the nursing home of Hasheminejhad of Ray city. Results of data analysis showed that Katarya laughter therapy significantly has been influential on increase public safety, improve physical symptoms, reduce anxiety and insomnia, social dysfunction and depression. According to the findings of this study can conclude that the method of Katarya laughter therapy by removing negative thoughts, changing beliefs, creating



positive emotional states, draining excitement dense, reducing the symptoms of the disease can improve the general health and factors related to it among residents of the house seniors. Among other activities which affect the quality of sleep in patients with Parkinson's disease is a respiratory disorder. One of the benefits of Laughter Yoga improves the respiratory system. Laughter exercises the lungs and chest muscles, resulting in vital capacity and improves breathing. In normal breathing that person is relax, there is a balance between inhalation and exhalation but in the stress and disease state not only breathing becomes shallow and slower and the value on oxygen becomes low but also a greater amount from air remains in the lungs and by keeping the air in the lungs, oxygen content comes down and water vapor and carbon dioxide increases. In this case, more favorable conditions for bacterial growth and lung infection created. Laughter increases ventilation and remove mucous plugs and to help remained air exchange which increases oxygen levels in the blood. In fact, when we laugh, the air completely run out from lungs and following that carbon dioxide and water vapor is also emitted and replaced with oxygen. And this oxygen becomes available to blood cells. The effects of Laughter could be help to middle-aged people with chronic respiratory diseases such as emphysema and reduces the risk of infection and inflammation of the lungs (Kikhay Hosseinpour,2012). Therefore, Laughter Yoga by improving respiratory system of the people can affect their quality of sleep. Therefore, according to the issues raised by Laughter Yoga through pain relief, muscle relaxation, reduction anxiety and depression, improves the respiratory system, and other benefits of Laughter Yoga can improve sleep quality can directly and non- directly affect Parkinson's disease. The questionnaire of sleep quality of Piterzboung has 7 subscales of sleep quality, sleep latency, sleep duration, sleep efficiency rate, sleep disturbances, use from sleeping pills and daily function disorder which in the above materials the effective factors on sleep quality of people suffering from Parkinson and how the performance of laughter Yoga and its impact on improving sleep quality, were investigated.

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