Effectiveness of Relaxation Training on General Health Quality (GHQ) and Life Expectancy in Patients with Asthma

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Abstract

The aim of this research was to determine effectiveness of relaxation training on general health and life expectancy in patients with asthma. Design of research was semi-experimental with pre – test, post – test along with control and test groups. From all people who with asthma referring to the hospital (Tehran city, Masih Daneshvari Hospital), 30 subjects were selected after accomplishment of pre – test then they were assigned into two groups randomly, test group (15 subjects) and control group (15 subjects). Test group was being trained for 6 sessions on relaxation. Post – test was administered for two groups. For analyzing data, descriptive, statistics methods were applied. Finding showed independent variable has significant applied. Findings showed independent variable has significant effect on general health and life expectancy (t>0.05). The results showed that relaxation training can lead to improvement of general health and life expectancy among people with asthma.

Keyword: Relaxation, general health, life expectancy, asthma, patients with asthma.

Introduction

Nowadays asthma is considered as a serious health issue in the world. Incidence of asthma is observed in all age ranges in all communities especially in advanced countries. It is estimated there are one hundred million asthmatic patients worldwide. Also evidence suggests incidence of asthma has been increasing recently and it is more evident about the children. Many environmental factors such as air pollutants, allergens and new lifestyle have helped this increase[1].

Due to inability in proper ventilation and its associated symptoms, patients with asthma suffer from disorder in the activity and their physical activity tolerance is limited and their power for ding work is reduced. It causes they do not have optimal physical functioning in comparison with the healthy people and one faces problem in performing individual and social responsibilities. Inability in performing physical functions at optimal level leads to the feeling of inadequacy, and the patient's self-confidence is disturbed. Subsequently, the patient suffers from anxiety, depression and sadness that it also affects the person's social interactions and provides grounds for withdrawing from the community. Overall it can be said asthma influences various aspects of the patient life and limits his physical, mental and social activity and thus reduces their life quality[2].

Due to asthma prevalence and occurrence in the adulthood, its control importance should be clarified to the people and gaining skills for self-care in the patients should be emphasized.

Considering chronic and relapsing nature of asthma, it is necessary to provide facilities for performing self-care activities, increased activity capacity or increased one's performance role in order to maintain life quality and health and help the patient for adapting the disease effects. To this end, the patient should be trained on the ways for coping the chronic disease and improving daily life activities[3].

Asthma is one of the oldest recognized diseases and it is one of the most prevalent diseases in the childhood. It is estimated forty five percent of the people in America suffer from it[4]. According to figures in 1998 in USA, there were fifteen million outpatient asthma visits and around two million people had been hospitalized for asthma treatment. Three billion dollars per year is spent on care and treatment of patients with asthma[5]. Asthma mostly emerges during early years of life. Overall half of the all asthma cases occur before the age 10 and one third of it occurs before the age 40[6]. Asthma mortality rate is low. The recent figures suggest the mortality rate is less than 500 cases per ten million patients. Fifty to eighty percent of patients have a good prognosis. The number of children who have still asthma 7-10 years after initial diagnosis is 26 to 78 percent. The clinical findings of asthma include shortness of breath, coughing and wheezing[5].

Asthma is a clinical syndrome that has three characteristics: Frequent attacks of airway obstruction that is reversible and heals spontaneously or with medication. Airway obstruction is usually due to an immune mechanism. Excessive bronchial reactivity to stimuli, while non-asthmatic individuals do not

respond to these stimuli that this phenomenon is known as the airway hypersensitivity and this bronchial hypersensitivity is the main feature of asthma. Airway inflammation in asthma pathogenesis. It is argued the common feature in the patients with asthma is that there is non-specific excessive reactivity of tracheobronchial tree. When airway reactivity is high, disease symptoms is more sever and permanent and more treatment are needed for controlling the symptoms. In addition, daily and nightly lung function oscillation amplitude increases and the patient wakes up in the evening or early morning due to breathlessness. Viral respiratory tract infections both in usual people and people with asthma may increase airway reactions for several weeks and due to contact with Ozone and nitrogen dioxide, airway hypersensitivity oscillates for several days to several weeks. Excessive airway reactivity is caused due to many factors; however, its basic mechanism is not recognized yet. The main theory is inflammation of the airways. Medium containing inflammatory cells such as mast cells, eosinophils, lymphocytes and macrophages infiltrate. Interaction of cells residing in airways (especially macrophages) and infiltrating cells justifies resulting clinical and physiological manifestations[7].

In other words, asthma is increased virtual respiratory system response to various attack stimuli, that is associated with reversible obstruction, and the basis for asthma diagnosis is episodic breathlessness with wheezing. Generally the patient with asthma suffers from some limitations due to the type of his disease, ignoring of which whether by the patient or the community causes problems for him. Perhaps most people believe coping with asthma is limited to using anti-asthma spray, but it is not true and asthma has widespread individual and social consequences, understanding, treatment and prevention of which is very important[8]. Also it should be considered the stress plays important role in increasing asthmatic attacks in the patients with asthma. Studies indicate internal factors affect development of asthmatic clinical symptoms through several ways including changes in airway, possibility for airways constriction, causing shortness of breath and accompanied with panic disorder and depression[9-11].The frequency and depth of breathing in a normal person varies voluntarily by different emotional states, such changes are deep and long in the patient with asthma[9]. In other studies it was shown life events even their positive ones may be risk factors for asthma.Gender difference has been reported in the initiation of asthma in the adults. Women are more vulnerable. Asthma prevalence is reduced by satisfaction with life and it is accompanied by high score of nervous conflict[9,11].

Psychologists generally in the present age have focused on physical diseases and their effect on the life of these people in addition to psychological diseases, and have utilized therapeutic methods and techniques for reducing and relieving by mental health problems associated with these diseases. The current work investigates effectiveness of relaxation training on general health quality of patients with asthma. Various authors have defined health based on different views. There is a general line for definition of health and disease concepts in the literature. Naturalists argue both concepts are value- free and empirically discoverable notions, while normativists maintain that disease and health are essentially value notions which are not discoverable, but they are advocable. Boorse is the most influential pro of naturalisms who argues disease is inability in performing specific physiological functions with the minimum normal effectiveness and health simply means release from disease. However, in normative theories on the health and disease, Sade differentiates between Subjectivist theories and Objectivist theories. Values are relative in Subjectivist theories, while it is objective in Objectivist theories. In summary, in Subjectivist theories some things are good because people want them, while in Objectivist theories people want something because it is good. The problem with Objectivist theories regarding the health is that they assume some values cannot be reduced to the things wanted by the people, while Subjectivist theories define health as one's ability for showing the minimum joy and happiness in the acceptable conditions. Thus, health definition cannot be provided without reference to the notion of reasonable social norms[12].

In the simplest definition, health means having healthy body, soul and mind based on WHO definition. Health is not merely absence of disease or infirmity, but it is also complete physical, mental and social well-being. Health is the process of discovering and application and preservation of all resources in the soul, thought, body, family, community and environment. Health has various aspects including a complex of physical, mental, spiritual, social, intellectual and environmental factors. In order to achieve the highest physical health, positive steps should be taken toward it: Proper nutrition, regular exercise, avoiding malicious behavior and drug abuse, protection against accidents and due detection of symptoms. Mental health, like physical health, is beyond absence of dieses or other problems. Mental health is applied on emotions and states, that is, on feelings and thoughts and includes awareness and acceptance of a wide range of feelings in self and others, the ability for demonstrating them, the ability to work independently and deal with the daily stressful obstacles. Essential component of mental health mean believing in life meaningfulness, the order governing the world and a superior power which gives superior meaning to the life. Social health means the ability for effective interaction with others and the community for creating satisfying personal relationships and accomplishing social plans. Social health consists of social participation, compatible living with other humans, creating positive relationships and safe sex. The other aspect of health, that is, intellectual health, is the ability for thinking, learning from life experiences, accepting new ideas and capacity for asking and evaluating information. Finally, environmental health means that one protects himself against risks in the air, water, soil, and consuming products and attempts for preserving the environment.

Life Expectancy Notion: Life expectancy at birth means the years of living in a specific community considering mortality pattern in the community since birth. In fact, life expectancy is

the expected life span of a newborn person in a particular community[13].

Life expectancy at a particular age: Remaining years of life of a particular individual in a particular society and in a certain age[14].

Life expectancy is measured and shown by different organizations such as WHO, United Nation Development Program (UNDP) and United Nations Children's Fund (UNICEF) considering epidemiologic and statistical studies in each particular community and the mortality pattern of the community. Life expectancy which is one of the important indices in health and welfare area is presented by different scales and indices. For example, UNDP measures and uses life expectancy at birth with its index known as Human Development which evaluates performance and progress of the communities in human development. Considering previous studies, life expectancy has become tripled since the beginning of human history up to now. However, there is still considerable difference between developed and developing countries. Industrial communities have been planned and organized for increased life expectancy over recent centuries. Documents obtained from these communities indicate initial increase in life expectancy was due to general improvement in living standards, organized efforts to control the spread of contagious and infectious diseases[15].

Factors Affecting Life Expectancy: Different factors affect life expectancy. Many are being conducted worldwide aiming at identification of the role of these factors. It is clear life expectancy results from complex interaction of effective factors on the health. For example, I addition to changeable factors and health habits and what is meant as lifestyle to us, such unchangeable factors as genetics, gender and race affect the increase in life expectancy. Although some gender or racial differences are somehow changeable due to their nature, they have also fixed and unchanging components. For example, it is observed white women have longer life than black men. Although this difference is somehow due to racism, gender which is an unchangeable factor causes increased life expectancy in women because of their biological structure. Also, labor division structure in industrial communities is in such a way that men are more exposed to risky jobs and environmental risk factors[16].

It has been proved reduced infant and children mortality in at the end of the last century and the early twentieth century caused a rapid increase in life expectancy at birth. Now the newborn or infant and child mortality has been minimal throughout human history. Since 1970, the main factors for increased life expectancy in industrial communities have been reduced mortality in old people especially mortality due to cardiovascular diseases and cancer in recent decades which has been significantly reduced due to the successful medical interventions[17].

In the current work, life expectancy is one of the life features which forces one to seek for a better future. Hope means success and better future and a reason for living. In other words, if there is hope, joy and happiness would be present in the life. To this end, psychologists in recent years have addressed a new topic as positive psychology. According the theory by Seligman and Szentmihalyi, over the past 60 years, psychological has become widely as treatment, and psychologists should understand those things which make the life valuable. Diner suggests as national indices focus on production, the states should measure continuation and severity of satisfaction and happiness of the people in different living situations. If national health indices are also available, it is possible to judge factors influencing happiness[18].

Current work aims at increasing general health and life expectancy in the patients with asthma by relaxation training. Previous works indicate relaxation decreases multiple muscular tensions. Studies on biofeedback, where some electrodes are connected to different body muscles including forehead, jaw, neck, shoulders and lower back so that muscle tensions are measured, indicate muscle tensions and contractions are considerably reduced after gradual relaxation.

Current work methodology is according to Jacobson's progressive muscle relaxation technique. Jacobson argues when the body reaches to neuromuscular equilibrium, the mind can be completely relaxed. Muscle relaxation technique is used for treating insomnia, high blood pressure, headaches, lower back pain and discomfort of arthritis.

The aim of Jacobson's technique is creating a sense of relief and relaxation compared with muscle contraction and relaxation. In addition, relaxation practices cause lowering neuromuscular synapse threshold which changes motor nerve excitability. As for its activation from brain of involuntary movements or involuntary movements, more stimuli would be necessary[19]. Relaxation changes motor neuron excitability and a stronger stimulatory activity would be needed for its activation. It is clear if relaxation doesn't reduce strength of small muscular mass, such as finger flexor muscles, it affects large muscular masses completely.

Methodology

Statistical Society, Sample and Methodology: Research was conducted in pre-experimental manner with pre-test – posttest with test and control groups. Statistical population consisted of all patients with asthma admitted to Masih Daneshvari Hospital in Tehran.

The sample includes randomly selected patients (N = 30) which were assigned into test and control groups (N = 15) randomly. For test group, relaxation training was performed according to Jacobson technique as follows:

This training method was run for the group members for two months once a week as training courses. In the initial sessions (first and second sessions), members were introduced and the research plan and treatment method were explained.16 groups of muscles were introduced to the members. The researcher provided training CD on relaxation for the subjects.

Research Tool: General Health Questionnaire (GHQ): Life expectancy questionnaire, Author-made questionnaire.

Goldberg's General Health Questionnaire: Goldber'g 28-item questionnaire is a screening questionnaire based on self-reporting which is used in clinical settings aiming at identifying people with one mental disorder. Two main classes of phenomena are considered in the GHQ: inability of a person to have a healthy functioning and appearance of new phenomena with disabling nature. Among mental health screening tools, GHQ is one of the tools which are widely used worldwide. It was initially developed by Goldberg. Its original form included 60 items and its shortened forms vary between 12 to 28 items and it was translated into 28 languages. Psychometric studies on it have been conducted in 60 countries. According to the authors, different forms of GHQ evaluate individual's symptoms since one month before until the time of implementing test.

28-item form includes 4 subscales: Physical symptoms (A), Anxiety and insomnia (B), Impaired social functioning (C), Depression (D).

Subscale of Physical Symptoms (A): Physical symptoms subscale includes cases about feeling of people toward their health and feeling of fatigue and is consisted of physical symptoms. This subscale measures physical sensual perceptions which are often accompanied by emotional motivations (such as feeling of weakness, feeling ill, headaches, hot and cold body, etc.). This subscale includes items 1-7.

Subscale of Anxiety and Insomnia (B): This subscale includes cases which are associated with anxiety and insomnia such as insomnia caused by anxiety, being pressured, being angry and grumpy, fearful or afraid and having anxiety. This subscale includes items 8-14.

Subscale of Impaired Social Functioning (C): This subscale measures ability of people against professional demands and daily life issues and manifests their feelings about coping with common life situations such as satisfaction with conducting works, having useful role in conducting works, decision making ability and enjoying daily life activities. This subscale includes items 15-21.

Subscale of Depression (D): Depression subscale is consisted of cases which are associated with severe depression and specific tendency to suicide such as feeling of worthlessness toward the living, feeling of disappointment and intention for suicide. This subscale includes items 22-28.

Psychometric Characteristics: External Validity and Reliability: Many works have been performed on validity of GHQ. Psychometric studies on different versions of general heath indicate 28-item version (GHQ-28) is the highest sensitivity and reliability compared to other versions. Goldberg and Williams (1989) studies psychometric characteristics of different versions in 43 works in different countries and indicated Goldberg's 28-item version has the highest sensitivity and reliability[20].

Life Expectancy Questionnaire: Life expectancy can be defined simply as average expected year of living for an individual in a specific country. Life expectancy questionnaire includes 33 items and the subjects answer it based on Likert scale (totally, almost, never). The maximum score in this test is 99. The higher score is obtained it suggests higher life expectancy.

Psychometric Characteristics: Internal Consistency: Cronbach's alpha coefficient was used to assess the internal consistency. According to results obtained for Cronbach's alpha coefficients, it is 0.89, 0.94, and 0.92 the whole sample, female subjects, and male subjects, respectively.

Retest Reliability: In order to assess reliability of the test, it was given to 95 female subjects and 91 male subjects attending in the first stage after 4 to 6 weeks. The mean and SD for the whole subjects, female subjects and male subjects in the retest were as follows: 35.24 = multiplied by (SD = 19.26), 31.39 = multiplied by (SD = 15.8), 30.16 = multiplied by (SD = 19.22).

Correlation coefficients in scores of the subjects in test and retest for the whole subjects, female subjects and male subjects were as follows: r = 0.80, 0.82, and 0.79.

Norms of the sample's subjects scores (N = 450) were calculated as percentage rating and by comparison of female and male subjects scores by t-test it was found scores of female subjects is significantly higher than male subjects[21].

Life expectancy test cutoff: 49.5, Below 49.5: low life expectancy, Above cutoff 65 to 99: high life expectancy 49.5 to 65: average life expectancy

Author-made Questionnaire: The questionnaire was made by the author and demographic characteristics were measured. This questionnaire provides general and necessary information for the author. General information includes duration of illness, number of asthma attacks during the day, the effectiveness of drugs, and genetic background of asthma in the family.

Findings: In order to investigate effectiveness of relaxation on general health and life expectancy, independent T test of difference scores. Descriptive data for general health and life expectancy test scores in pre-test and posttest for both groups are given in table-1.

H1: Relaxation training leads to increased general health in the patients with asthma, Independent T test of difference scores was used for testing this hypothesis in test and control groups. To this end, comparison of difference mean of pore-test and posttest scores in two groups in four subscales of GHQ, i.Subscale of physical symptoms (A), ii.Subscale of insomnia and anxiety (B), iii.Subscale of impaired social functioning (C), and iv.Subscale of depression (D)) shows relaxation training affects general health and life expectancy in the patients with asthma. Results of the research are given in the below tables.

According to table 1, scores of mean and SD in four subscales of general health are reduced in posttest.

According to above tables, since calculated t in each group (t = 6.723) with degree of freedom df = 16 is larger than t in the table (t = 2.120), thus null hypothesis both with 95 percent probability is concluded and hence there is significant difference in means of difference scores of physical symptoms subscale in general health test in pre-test and posttest in test and control groups.

According to table-3, since calculated t in each group (t = 9.120) with degree of freedom df = 22 is larger than t in the table (t = 2.074), thus null hypothesis both with 95 percent probability is concluded and hence there is significant difference in means of difference scores of anxiety and insomnia subscale in general health test in pre-test and posttest in test and control groups.

According to table-4, since calculated t in each group (t = 4.196) with degree of freedom df = 30 is larger than t in the table (t = 2.042), thus null hypothesis both with 95 percent probability is concluded and hence there is significant difference in means of difference scores of impaired social functioning subscale in general health test in pre-test and posttest in test and control groups.

According to table-5, since calculated t in each group (t = 2.388) with degree of freedom df = 28 is larger than t in the table (t = 2.048), thus null hypothesis both with 95 percent probability is rejected and hence there is significant difference in means of difference scores of depression subscale in general health test in pre-test and posttest in test and control groups.

Table-1
Frequency, mean and standard deviation of pre-test and post-test in test and control groups in general health (GHQ)

Group	Statistical index	Pre-test scores in general health					Posttest scores in general health				
		Subscale of Physical Symptoms (A)	Subscale of Anxiety and Insomnia (B)	Subscale of Impaired Social Functioning (C)	Subscale of Depression (D)	Total scores of subscales	Subscale of Physical Symptoms (A)	Subscale of Anxiety and Insomnia (B)	Subscale of Impaired Social Functioning (C)	Subscale of Depression (D)	Total scores of subscales
Test	Mean	12.2667	10.8000	9.0667	3.8000	35.9333	5.7333	4.0667	5.7333	1.5333	17.0667
	No.	15	15	15	15	15	15	15	15	15	15
	SD	3.91821	3.36367	3.17280	3.21159	1.00247E1	2.71153	1.75119	1.76743	5.83667	4.74593
Control	Mean	12.3333	11.2000	9.5333	6.8000	39.8667	12.7333	11.8667	10.1333	6.6000	41.3333
	No.	15	15	15	15	15	15	15	15	15	15
	SD	4.08248	4.02137	2.92445	5.44059	1.24319E1	4.06143	3.37780	3.06749	5.02565	1.10432 E1
Sum	Mean	12.3000	11.000	9.3000	5.3000	37.9000	9.2333	7.9667	7.9333	4.0667	29.2000
	No.	30	30	30	30	30	30	30	30	30	30
	SD	3.93175	3.64833	3.00746	4.64721	1.12751E1	4.76831	4.97915	3.32113	4.51001	1.50869E1

According to table-6, since calculated t in each group (t = 7.832) with degree of freedom df = 23 is larger than t in the table (t = 2.069), thus null hypothesis is rejected and it is concluded there is significant difference in the sum of means of difference scores in general health's 5 subscales in pre-test and posttest in test and control groups.

H2: Relaxation training leads to increased life expectancy in the patients with asthma.

According to Table 8, since calculated t in each group (t = 9.236) with degree of freedom df = 17 is larger than t in the table (t = 2.110), thus null hypothesis is rejected and with 95 percent probability it is concluded there is significant difference in means of difference scores of life expectancy scale in pre-test and posttest in test and control groups.

According to table-7, scores for mean and SD in life expectancy scale in posttest is higher than pre-test.

Table-2
Independent t-test between difference scores of subscale of general health physical symptoms in test and control groups

Statistical Indices / Group		No.	Mean	SD	Average Standard Error	t-statistics	Degree of freedom	T probability
General health	Control group	15	6.5333	3.87052	0.99936	6.723	16	0.0001
	Test group	15	-0.4	0.98561	0.25448			

Table-3
Independent t-test between difference scores of subscale of anxiety and insomnia in test and control groups

Statistical Indices / Group		No.	Mean	SD	Average Standard Error	t-statistics	Degree of freedom	T probability
General health	Control	15	6.7333	2.76371	0.71359	9.120	22	0.0001
	Test		-0.0667	1.49604	0.38625			

Table-4
Independent t-test between difference scores of subscale of impaired social functioning in test and control groups

Statistical Indices / Group		No.	Mean	SD	Average Standard Error	t-statistics	Degree of freedom	T probability
General health	Control	15	3.3333	3.26559	0.84327	4.196	30	0.0001
	Test		-0.06	1.63881	0.42314			

Table-5
Independent t-test between difference scores of subscale of impaired social functioning in test and control groups

Statistical Indices / Group		No.	Mean	SD	Average Standard Error	t-statistics	Degree of freedom	T probability
General health	Control	15	2.2667	2.37447	0.61308	2.388	28	0.0001
	Test		0.2	2.36643	0.61101			

Table-6
Independent t-test between total difference scores of 5 subscale of general health in test and control groups

Statistical Indices / Group		No.	Mean	SD	Average Standard Error	t-statistics	Degree of freedom	T probability
General health	Control	15	18.8667	8.76573	2.2633	7.832	23	0.0001
	Test		-1.4667	4.92612	1.27192			

Table-7
Frequency, mean and standard deviation of pre-test and post-test in test and control groups in life expectancy

Statistical Indices / Group		Pre-test scores in life expectancy	Posttest scores in life expectancy
Test group	Mean	56.6667	78.2000
	No.	15	15
	SD	4.74593	6.14352
Control group	Mean	58.74332	57.0000
	No.	15	15
	SD	4.33370	4.30946
Sum	Mean	57.7000	67.6000
	No.	30	30
	SD	4.58746	101.9758

Table-8
Independent t-test between difference scores of life expectancy scale in test and control groups

Statistical Indices / Group		No.	Mean	SD	Average Standard Error	t-statistics	Degree of freedom	T probability
Life expectancy	Control	15	-21.5333	9.32636	2.40806	-9.236	17	0.0001
	test		1.7333	2.86523	0.73980			

Conclusion

Findings in the current work indicate relaxation training increases general health and life expectancy variables. Findings of the current work are consistent with the findings by Chiang, Li, et al.[22]. They studies effectiveness of muscular - respiratory relaxation on anxiety and asthma symptoms in asthmatic children with moderate to severe degree in a medical center in Taiwan. Their findings showed emotional stress develops and trigger asthma in children. Reduced anxiety through muscular - respiratory relaxation in clinical trials for developing an effective outcome of the asthma was shown as effective. They are also consistent with the findings by Mojdeh[23] which

investigated effects of relaxation on frequency, duration and severity of migraine headaches in patients referred to neurology clinics of hospitals affiliated to the Universities of Medical Sciences. They found there is significant difference between frequency of headaches before and after relaxation. Similarly, they are consistent with the findings by Jan-Bozorgi[24] which studies effectiveness of progressive muscular relaxation on perceived stress in patients with hypertension. They found relaxation reduced significantly perceived stress in systolic blood pressure, diastolic blood pressure and heart rate in the test group.

Considering results given in table-1, 12.42 scores were reduced from mean scores of general health scale in the test group following intervention, while it was increased by 40.22 scores in the control group.

Also results in table-2 showed relaxation training in terms of general health based on t calculated in each group (t = 7.832) with degree of freedom df = 23 is higher than t in the table (2.069) and it is significant at 0.05 level with 95 percent probability. Thus, it is concluded relaxation training is effective in increased general health in the patients with asthma. According to the studies by the author, no research work on general health variable in asthma and muscular relaxation method was observed as far as he is aware; hence the author is not able to refer to its consistency or inconsistency.

Hypothesis 2: Relaxation training leads to increased life expectancy in the patients with asthma.

Considering results given in table-7, 72.05 scores were increased from mean scores of life expectancy scale in the test group following intervention, while it was reduced by 52.69 scores in the control group.

Similarly, results in table-7 showed relaxation training in terms of life expectancy based on t calculated in each group (t = 9.236) with degree of freedom df = 17 is higher than t in the table (2.110) and it is significant at 0.05 level with 95 percent probability. Thus, it is concluded relaxation training is effective in increased life expectancy in the patients with asthma. According to the reviews by the author, no research work directly related to asthma and muscular relaxation method was observed as far as he is aware, hence the author is not able to refer to its consistency or inconsistency. In describing the findings it can be stated comparison of scores of test and control groups in GHQ and life expectancy questionnaire show mean scores of subjects in test group were reduced in posttest compared to pre-test in general health test, and they were increased in life expectancy test. It is concluded relaxation training is effective in increased general health and life expectancy in the patients with asthma and there is significant difference in the scores of both groups in pre-test and posttest.

In addition, for the future research works it is recommended to conduct this therapeutic method on children with asthma in terms of the asthma type and on those with other physical and mental ailments. In order to evaluate effectiveness of this non-pharmacologic therapeutic method, it is better to compare it with other psychological methods.

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