

# The Comparison Between Physical Therapy and Psychosocial Therapy to Control Stress Among Hypertensive Patients

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**Abstract:** *This study aims to determine the comparison between physical therapy and psychosocial therapy to control stress among hypertensive patients. Hypertension develops rapidly in developing countries with one of the most considered factors is chronic stress. Most hypertensive patients use drugs to lower their blood pressure even though anti-hypertensive drugs could cause undesirable side effects. Many studies were conducted to relieve stress in hypertensive patients as companion therapy. Stress causes blood pressure to rise; thus, stress control is essential to control blood pressure. The therapies reviewed here are physical therapy and psychosocial therapy, which serve to control stress among hypertensive patients. The study discusses the advantages of each therapy and the different therapeutic methods that can be applied by physical therapy and psychosocial therapy as additional therapies for hypertensive patients or for people who want to control stress in their lives. In general, physical therapy and psychosocial therapy have the same benefits for reducing stress in hypertensive patients.*

**Keywords:** *physical therapy, psychosocial therapy, stress, hypertension*

## Introduction

Hypertension is a non-communicable disease that causes cardiovascular disease which causes many deaths (Nelson, 2019). During this time, hypertensive patients control their blood pressure with antihypertensive drugs either with single therapy or combination therapy. However, drugs consumed continuously can cause unwanted long-term effects in the process of their use (Dahri, 2019). In addition to using drugs for hypertension patients, it is also recommended to change lifestyles such as food and stress control. That is why health experts in various parts of the world offer alternative therapies as a companion therapy to control blood pressure in people with hypertension. These therapies aim to reduce stress so that blood pressure can be controlled in hypertensive patients. The therapy offered here is in the form of therapy related to physical activity as a form of relaxation and psychosocial therapy, all of which are beneficial for reducing stress and blood pressure in people with hypertension. The study of these therapies is easily accessible with the development of information technology in this digital age. Therefore, it is easier to spread knowledge about companion therapy to control stress.

Especially for prehypertension, relaxation therapy can be used as a single therapy for controlling blood pressure (Rainforth et al., 2007). The current study explains the comparison of the effectiveness of each therapy to control stress for hypertensive patients. Hypertension is categorized as a non-communicable disease increasingly affecting the layers of society that are generally existing in developing countries. Several companion therapies have been investigated to reduce stress in these hypertensive patients because stress is one of the factors that play an important role in causing

hypertension. If hypertension is not controlled properly, it could increase risk factors for cardiovascular disease such as heart, brain, and blood vessels. Some therapies here are as effective as therapies to reduce stress in the process of controlling blood pressure.

Stress is one of the factors that cause increased blood pressure, in addition to other factors such as lifestyle and lack of physical activity. Chronic stress, especially non-adaptive responses to stress, are more likely to be the cause of sustained increases in blood pressure (Sparrenberger et al., 2009). Continued blood pressure causes permanent hypertension, which is why research into stress control programs in the context of controlling blood pressure is growing. Stress makes the brain release stress hormones such as adrenaline, cortisol, and non-epinephrine which cause an increase in heart rate and dilation of blood vessel size. Therefore, if what is expected is a decrease in blood pressure, the main thing in the viewfinder is stress.

One of the causes of hypertension is stress, and stress is increasing the risk of cardiovascular disease in patients with hypertension. So we need stress control programs that are useful for people with hypertension, both programs such as interventions using physical and psychosocial therapies (Meiling & Hui, 2019). One of the problems in the health world this century is the increasing prevalence of chronic diseases and the side effects of the care they do. That is why other alternatives are needed as a companion treatment to minimize the unexpected effects of the treatment. Although lifestyle modification is still recommended, stress control is the main thing to control blood pressure in hypertensive patients. There are various kinds of therapies that we review from various journals to control stress for people with a history of

hypertension. These therapies are in the form of physical therapy and psychological therapy with the purpose of controlling stress. These therapies can be classified as special programs to control stress for people with high blood pressure. In addition, there are other physical therapies that are useful for individual physical health to prevent hypertension.

### **Physical Therapy**

One therapy that is often used to control stress is relaxation therapy. Relaxation has been examined and proven to play a significant role in stress control for various disorders and other medical interventions. Relaxation is also used for therapy to prevent hypertension both essential hypertension and secondary hypertension. One example of secondary hypertension that gets from relaxation therapy is hypertension in pregnancy. Relaxation techniques have shown benefits for reducing blood pressure and stress levels in pregnant women with hypertension (Soliman, Elalem, & Elhomosy, 2017). There are also relaxation techniques that are combined with breathing techniques so that it gives an effect that is effective in controlling stress in hypertensive patients (Chicayban & Malagrissi, 2014).

Relaxation technique, which is one of the physical therapy techniques aimed at relaxation, is progressive muscle relaxation therapy (PMR). PMR is a relaxation therapy given to clients by combining deep breathing exercises and a series of contractions and relaxation of certain muscles. PMR is reported to be beneficial for a reduction in salivary cortisol levels and positive effects on immunoglobulins, decreased blood pressure, better heart rate balance, headaches relief, better management of cardiac rehabilitation, better quality of life after bypass surgery, improved quality of life of people with multiple sclerosis, and better emotional balance. Besides, PMR can be applied in conjunction with medical treatment to a variety of chronic physical disorders, such as rheumatoid arthritis, irritable bowel syndrome, as well as for patients with chronic pain and pulmonary hypertension. PMR is effective and feasible as a method of reducing stress and blood pressure among the elderly with hypertension (Kumutha et al., 2014 & Merakou et al., 2019).

The next physical therapy that can be used to control blood pressure is dance/movement therapy. In the dance, there are various movements following the music that comes to joy. Physical activity in following the movements in the dance makes blood circulation more smoothly. The movements in the dance are the same as sports but are more fun, so it's easy to do routinely. Besides being beneficial for the health, dance/movement therapy is also beneficial for reducing pain for patients who experience chronic pain and has proven to be effective in reducing blood pressure in hypertensive patients (Bojner et al., 2003 & Conceição et al., 2016).

In addition to dance therapy, there is another deep therapy, which is deep breathing therapy. In respiratory

therapy, there is a relaxing effect, which is useful to reduce stress and relieve physical tension. This deep breathing therapy training should be introduced for stage I hypertension patients to control blood pressure and reduce the risk of cardiovascular disease (Sangprasert et al., 2018 & Misra et al., 2018). A similar study is conducted but combined with soaking feet using warm water. This therapy is carried out by Indonesian students to see the effects of combination therapy between deep breath therapy and warm water on hypertensive patients. In general, this combination of therapy makes the patient more relaxed and relieves stress. Thus, that it can be concluded that deep breathing therapy by soaking the feet with warm water is able to control blood pressure (Ferayanti, Erwanto, & Sucipto, 2017).

The next physical therapy is Tai Chi, which is a form of Chinese martial arts and fine flow health exercises. Tai Chi is divided into various styles of movement which are basically rooted in the same concept. In Tai Chi, there are gentle movements and are suitable for all ages, both young and elderly. Tai Chi originates from China, which is then made into practice as a means for healthy physical activities around the globe. In this research, Tai Chi exercise has an important role in reducing blood pressure in hypertensive patients (Tsai et al., 2003). Tai Chi has a quite encouraging effect on reducing stress and blood pressure, but further research is needed to get stronger evidence that Taichi has a significant impact on reducing stress and blood pressure in hypertensive patients (Wang et al., 2013). The latest findings, Tai Chi has been proven to significantly improve psychosocial well-being and reduce blood pressure. With this discovery, Tai Chi is recommended as a non-pharmacological treatment option for people with hypertension (Smith, 2018).

### **Psychosocial Therapy**

Psychosocial is a social dimension of personality development; psychosocial therapy is a form of healing to help people (individuals, families, groups) in changing their behavior and situation. Some of the changes that can be achieved through psychosocial therapy are changes in cognitive, emotive, and environmental aspects. There are several psychosocial therapies that have been carried out by research which have had significant effects on stress control with the aim of controlling blood pressure in hypertensive patients. The first is meditation, which is an exercise to focus on peace of mind and a relaxed body. By focusing on the tranquility of thinking, the individual will have a clear view and still feel calm. Meditation is beneficial for physical and mental health, even if only sitting and still, in meditation should not worry about anything that ultimately gives physical and mental health as a whole. The body responds to stress by releasing the hormones epinephrine (adrenaline) and norepinephrine, which causes an increased heart rate, increased blood flow and blood pressure. Meditation

can reduce heart rate; while meditating is trained to put aside negative thoughts that can cause stress (Astin, 1997),

This is confirmed by research on transcendental meditation that is quite promising as an alternative to lowering high blood pressure. Transcendental Meditation (TM) is an exercise by focusing the mind to get calm by regarding the relationship between body and mind. From the results of this transcendental meditation, it is proven that the method is able to be an alternative to accompanying therapy for the treatment of high blood pressure (Schneider et al., 2016; Gathright et al., 2019). Besides TM, there is mindfulness meditation in this research to see the impact of the intervention on the level of anxiety, stress, and depression. Mindfulness meditation therapy after intervention shows a decrease in stress and blood pressure and improves the physical and psychological health of people with hypertension (Márquez et al., 2019 & Meiling et al., 2019 & Johnson et al., 2019).

Next, there is laughter therapy. This therapy is one way to achieve a relaxed condition to reduce blood pressure. In research conducted in Iran, laughter therapy can be used to reduce hypertension in the hemodialysis process. Laughter therapy is proven to reduce blood pressure in patients undergoing hemodialysis, dialysis for patients with kidney failure. Where in the process of hemodialysis, the patient always experiences increased blood pressure. With laughter therapy, the tension and stress experienced by patients during the hemodialysis process become easier to do, and this is sufficient evidence that humor therapy is effective for lowering blood pressure. In addition to laughter, there is also SEFT therapy, which is one alternative therapy that is the Spiritual Emotional Freedom Technique. This SEFT is one of the therapies which is done by sticking lightly at certain nerve points on the body along with prayers to calm the mind. Laughter therapy has the same effect as SEFT therapy, as proven in research in Indonesia that laughter therapy and SEFT have the same effect in reducing stress levels in the elderly (Karmiyati & Sari, 2018).

The following therapy is aromatherapy, which is one type of alternative medicine for health that uses volatile plant liquid ingredients and is known as essential oils or other aromatic compounds from plants that aim to influence mood. This aromatherapy has different scents and uses, for example, the scent of lavender to calm the mind and for people who have sleep disorders. In addition to reducing anxiety, aromatherapy is also beneficial for patients undergoing the hemodialysis process, where hypertension is reported to be the most common underlying disease experienced by patients undergoing this hemodialysis. Inhaling this aromatherapy will bring calm to the patient so that tension and blood pressure can decrease. This provides evidence that giving aromatherapy to hemodialysis patients makes them more prosperous (Nesami et al., 2018 & Lotfi et al., 2019).

Music therapy is considered quite influential on stress and blood pressure because listening to music could make individuals happier. Discussion in the current research shows that listening to Canon in D major from Pachelbel is able to prevent a significant increase in anxiety, systolic blood pressure, and heart rate caused by cognitive stress. The benefits of this music therapy for health are preventing cognitive stress because stress increases blood pressure which is potentially hypertensive. Music therapy is also suitable for reducing the risk of poor mental health (Knight et al., 2001 & Chen, 2019).

Another therapy that is useful for people with hypertension is the therapy to get closer to religion and improve spirituality. In religion, there is a series of worship that is beneficial for human physical and mental health. In worship, there are many physical movements that are beneficial for physical health. Worship also becomes a means to get peace and peace that is able to make individuals able to withstand stress so that prosperity is realized, both for healthy individuals and hypertensive patients. It has been proven in research that approximately 20 empirical studies reviewed show that the characteristics and functions of religion have very beneficial effects on blood pressure and human health (Lev et al., 2007 & Fernando et al., 2019).

Apart from physical therapy and psychosocial therapy mentioned above, there are other combination therapies namely yoga. In yoga, there are physical movements, breathing, and meditation in which all three combined techniques provide an influence on stress, peace of mind, and anxiety, which are beneficial for reducing blood pressure for people with hypertension. That is why yoga has become one of the most popular exercises for hypertension sufferers, thus making yoga a part of their lifestyle to get physical and mental health (Wu, et al., 2019).

## Discussion

The above research is a research that is useful as a companion or alternative therapy to get mental and physical health for hypertensive patients, as well as for individuals who want to prevent hypertension apart from physical therapies, such as relaxation therapy and the combination of reducing stress in people with hypertension. In addition, the Progressive Muscle Relaxation / PMR therapy can be used as a companion therapy for reducing stress and reducing blood pressure for people with hypertension (Merakou et al., 2019 & Kumutha et al., 2014). In dance/movement therapy, there are movements that promote blood circulation and pleasant movements that can reduce stress so that it is beneficial for people with hypertension (Horwitz et al., 2003 & Conceição et al., 2016).

The next physical therapy is deep breathing therapy or deep breathing, combined with soaking the feet with warm water, this therapy has succeeded in relieving stress and lowering blood pressure; Ferayanti & Sucipto, 2017). There is also Taichi which gives an

influence on the decrease in stress, thereby reducing blood pressure (Tsai et al., 2003) (Wang, Feng & Yang et al, 2013). In conclusion, relaxation therapy, PMR, dance/movement therapy, deep breathing, and Taichi are some examples of physical therapies that are useful for reducing stress and are useful for reducing blood pressure in people with hypertension.

On psychosocial therapy, there is a useful meditation to relieve stress and have an effect on reducing blood pressure (Astin, 1997), (Schneider & Reangsing, 2016), (Márquez, Soler & vila et al., 2019). There is laughter therapy (Eshg, & Ghafouri, 2017),

and SEFT therapy (Karmiyati & Sari, 2018), both of which exert an influence on stress for people with hypertension. Then there is aromatherapy therapy (Nesami, et al, 2018), music listening therapy (Knight & Richard, 2001), and getting closer to religion (Lev et al., 2007 & Fernando et al., 2019). The three therapies have been proven to have significant impacts on reducing stress among people with hypertension. A combination of therapy between physical therapy and psychosocial therapy named yoga which is beneficial for reducing stress in patients with hypertension (Wu et al., 2019).

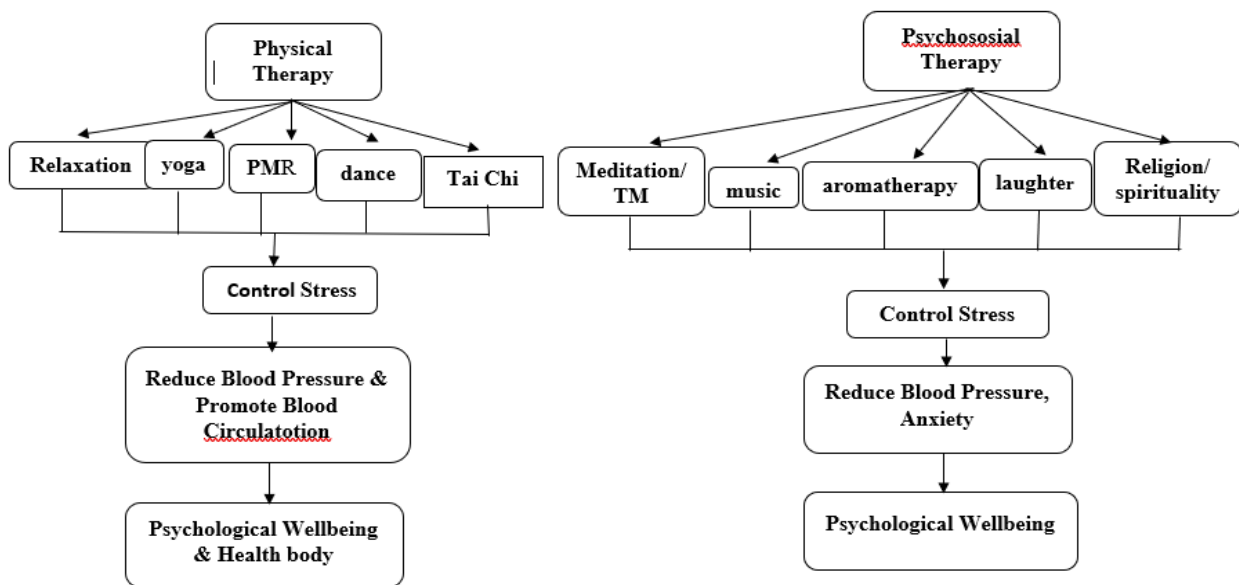


Figure 1. Framework

### Conclusion and Recommendation

Physical therapy and psychosocial therapy have positive impacts to relieve stress among people with hypertension. In physical therapy, it prioritizes body movements that have the same effect as exercise so as to make blood circulation smoother and beneficial for the health of the body. Physical therapies that are combined with breathing techniques are able to produce a relaxed body so that it is beneficial for relieving stress. Whereas in psychosocial therapy, it is more focused on psychology without having to involve movements that are defined as psychological therapies above whose purpose is directed to change the cognitive behavior of individuals. Psychosocial therapy here is more focused on seeking peace and relaxing the mind so that it is expected to be able to relieve stress and bring calm and well-being needed by hypertensive patients. Regarding the benefits, there is not much difference between the two methods of therapy, whether physical therapy or psychosocial therapy is superior.

Suggestions for patients with hypertension are expected to undergo one of the alternative therapies as above, especially for patients with prehypertension so that the benefits obtained are greater because it is still

at a mild level. In addition to the existence of alternative therapies to reduce blood pressure through stress reduction, it is expected that the risk of drug-related problems can be minimized. For further studies, it is expected that there is more specific research on the most appropriate and efficient therapies as companion and alternative therapies to relieve stress for people with hypertension. Besides, those studies are expected to be on target, such as certain therapies for certain levels of hypertension so that it is more specific. This is useful to make people with hypertension to get benefits precisely and convincingly.

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