

The role of physiotherapy in the treatment of anxiety disorders

ANA MARIJA KOVAČ, PT; PROF. DR. PETER UMEK; ASSOC. PROF. DR. FRIDERIKA KRESAL

Institution of Higher Education for Physiotherapy, FIZIOTERAPEVTIKA

Correspondence: prof. dr. Peter Umek, Institution of Higher Education for Physiotherapy, FIZIOTERAPEVTIKA, Slovenska cesta 58, 1000 Ljubljana

e-mail: tajnistvo@gmail.com, tel: +386 (0)1 361 20 55

webpage: www.fizioterapevtika.si

Original scientific article

Izvirni znanstveni članek

Abstract

Anxiety disorders are the most common mental disorders. Usual treatments include pharmacotherapy and psychological interventions, but these are not always successful. The two approaches are often combined. Numerous patients suffering from anxiety disorders do not respond to pharmacological agents or psychotherapy and about experience a relapse. There is a need for better and more comprehensive treatments which would not only affect the biochemical and psychological aspects of one's being but also their body as a whole. In some countries, physiotherapists have been involved in the treatment of anxiety and other mental disorders for more than 50 years. In recent years, there have been calls for the physiotherapy profession to join healthcare teams dealing with mental health issues but unfortunately, this is still the exception rather than the rule. We examined if physiotherapy could play a role in the treatment of anxiety disorders and which physiotherapy methods would be most useful. Keywords: anxiety, anxiety disorders, physiotherapy, mental health, mental disorders, physiotherapy for mental health.

Vloga fizioterapije pri zdravljenju anksioznih motenj

Povzetek

Anksiozne motnje so najpogostejše duševne motnje, običajno zdravljene s farmakoterapijo in psihoterapijo. Oba pristopa se pogosto kombinirata. Številni bolniki z anksioznimi motnjami se ne odzovejo na farmakološka sredstva ali psihoterapijo in doživijo ponovitev. Potrebna so boljša in celovitejša zdravljenja, ki ne bi vplivala le na biokemične in psihološke vidike človekovega bitja, temveč tudi na celotno telo. V nekaterih državah se fizioterapevti z zdravljenjem anksioznosti in drugih duševnih motenj ukvarjajo že več kot 50 let. V zadnjih letih se pojavljajo pozivi, naj se fizioterapevska stroka pridruži zdravstvenim timom, ki se ukvarjajo z duševnimi težavami, vendar je to žal še vedno prej izjema kot pravilo. Proučili smo, če ima fizioterapija lahko vlogo pri zdravljenju anksioznih motenj in katere fizioterapevske tehnike bi bile za to najbolj primerne. Ključne besede: anksioznost, anksiozne motnje, fizioterapija, duševno zdravje, duševne motnje, fizioterapija za duševno zdravje.

1. INTRODUCTION

Anxiety disorders are the most common type of mental disorders, affecting an ever-greater percentage of world population (WHO, 2022). In addition to the burden these disorders represent for the patients and their loved ones, they are also very costly for the healthcare system and thus the State, as they often require long term medical interventions, time off work and in some cases, hospitalizations (Klanšček et al., 2009). According to the last survey on mental health in the European Union, approximately 7% of Slovenes suffer from at least one type of anxiety disorder (Šprah et al., 2011) – a number likely to increase given the immense impact that the Covid-19 pandemic has had on the population. Preliminary data suggest that the global prevalence of anxiety disorders has risen by 25.6% since 2020 (WHO, 2022). There are several types of anxiety disorders such as generalised anxiety disorder, social phobia, obsessive-compulsive disorder, agoraphobia, specific phobia etc. While these disorders have different characteristics and presentations, the patients suffering from them all report feelings of intense and overwhelming anxiety, brought on by certain social situations, objects, animals, thoughts, or physical sensations/reactions (Vanin and Helsley, 2008). Anxiety disorders may present on their own, or, commonly, secondary to physical ailments such as cancer, heart disease, respiratory disease, trauma etc. (Zvolensky and Smits, 2008). They also feature a host of physical symptoms (e.g., dyspnoea, hyperventilation, stomach-ache, elevated heart rate, dizziness, paraesthesia, diarrhoea, vomiting, urinary frequency, muscular tension, aches in different parts of the body) which is why many people turn to their primary care providers at first. Because the list of differential diagnoses for these symptoms is long, anxiety disorders are often diagnosed late in the course of the disease (Vanin and Helsley, 2008). On the other hand, people with anxiety disorders are more likely to develop chronic diseases related to physical inactivity such as diabetes, heart disease and metabolic syndrome (Kandola et al., 2018). Anxiety disorders are primarily treated with two approaches: pharmacologically with anxiolytic agents and antidepressants and with psychotherapy. The two approaches are often combined (Ölund et al., 2018). However, about one third of patients suffering from anxiety disorders do not respond to pharmacological agents or psychotherapy and about 40% experience a relapse (Kandola et al., 2018). Therefore, there is a need for better and more comprehensive treatments which would not only affect the biochemical and psychological aspects of one's being but also their body as a whole. In some countries, mostly in Scandinavia, physiotherapists have been involved in the treatment of anxiety and other mental disorders for more than 50 years. In recent years, there have been calls for the physiotherapy profession to join healthcare teams dealing with mental health issues but unfortunately, this is still the exception rather than the rule. The literature and postgraduate courses on the topic of physiotherapy in mental health are scarce (Probst, 2017). It is also telling that, of the 122 member countries of World Physiotherapy (World Confederation for Physical Therapy), only 21 of them – mostly from Scandinavia and Western Europe - have also joined the International Organization of Physical Therapists in Mental Health (IOPTMH) (World Physiotherapy, n.d.). In Slovenia, the Resolution on the Mental Health Programme 2018-2028 does not include physiotherapists in the multidisciplinary teams for the treatment of mental disorders, apart from neuro physiotherapists for the treatment of children with developmental disorders (Resolucija o nacionalnem programu duševnega zdravja 2018-2028, 2018).

ANXIETY DISORDERS: A BRIEF OVERVIEW

Fear, anxiety, and anxiety disorders

Fear and anxiety are emotions which have helped humans adapt to their environment and protect them from danger. We experience these emotions in situations we deem threatening, either consciously or subconsciously. Humans react to threats in three ways: by fighting, fleeing, or freezing. Each of these reactions involves a series of physical, emotional, cognitive, and behavioural changes. Fear is commonly defined as an emotion experienced in situations which are objectively threatening a person's life such as natural disasters, accidents, violence etc. Meanwhile, anxiety is usually defined as a subjective feeling of unease regarding situations we anticipate might be difficult for us, like an exam, a public lecture, walking in a dark alley alone in the night etc. Anxiety sharpens our senses, makes our reactions to stimuli faster, makes us more focused and more likely to properly prepare for the difficult tasks ahead of us – it is in fact a protective emotion. For some people, anxiety – an otherwise healthy and normal emotion – becomes overwhelming and hinders their functioning. It is then that anxiety becomes pathological, and the person is diagnosed with an anxiety disorder (Newth, 2011). When speaking of anxiety, it is also important to distinguish between state anxiety, which manifests itself in stressful situations, and trait anxiety, which is a more permanent trait closely linked to the development and maintenance of an anxiety disorder (Steimer, 2002).

Classification of anxiety disorders

Agoraphobia is characterized by intense anxiety about leaving one's home or visiting public places. Agoraphobics are afraid of experiencing a panic attack or losing control of their bodily functions in public, so they rarely leave their home or only do so in the company of a so-called safe person. Agoraphobia mostly presents together with a panic disorder and is four times more common in women than in men. From 2 to 5% of population suffer from agoraphobia (Newth, 2011).

Social phobia or *social anxiety disorder* (SAD) is a disorder in which the people suffering from it experience overwhelming anxiety and a host of physical symptoms (blushing, shaking, sweating etc.) in social situations like speaking in public, meeting new or important people, visiting public spaces, or attending social gatherings. Patients with SAD fear rejection and ridicule from other people and often isolate themselves completely or self-medicate with psychoactive drugs or alcohol, which sometimes leads to substance abuse. About 7-13% of population suffers from social anxiety (Newth, 2011).

Specific phobia or *simple phobia* is an intense fear related to a specific object, animal, or situation (e.g., fear of needles, fear of spiders, fear of going to the dentist). Patients suffering from specific phobias exhibit a severe panic reaction when exposed to the trigger, which is disproportionate to the actual threat. Approximately 10% of population suffers from specific phobia (Newth, 2011).

The most obvious trait of the *panic disorder* is a panic attack – a sudden, unprovoked episode of intense anxiety and dread, accompanied by severe physical symptoms such as hyperventilation, tachycardia, palpitations, dizziness, sweating, and dissociation. People often mistaken panic attacks for a heart attack or a stroke. Patients suffering from panic disorder commonly develop so-called anticipatory anxiety, which means they fear future panic attacks. 3-4% of population suffer from panic disorder (Newth, 2011).

Generalized anxiety disorder (GAD) is a disorder in which patients suffering from it exhibit intense worry and anxiety about their life situation or values (financial situation, interpersonal relationships, politics, climate change etc.). For GAD to be diagnosed, a person must exhibit symptoms for at least six months. Patients suffering from GAD dedicate most of their time to worrying about these issues and cannot stop the cycle of worry and rumination. They are often irritable, have trouble concentrating, exhibit muscular tension and insomnia. GAD is present in 3-4% of the population (Vanin and Helsley, 2008).

Obsessive-compulsive disorder (OCD) is characterized by obsessions (intrusive thoughts, mental images, or impulses) and compulsions (the rituals or behaviours meant to distract from or remedy the obsessions). Obsessions often include images of violence (towards self or others), sexual acts or fears that an action or failure to act might result in harm to others. The most common compulsions are

counting, (re)checking, washing, and placing objects in a specific order. OCD occurs in 1-2% of population (Newth, 2011).

Post-traumatic stress disorder (PTSD) develops as a consequence of experiencing severe physical or emotional trauma. The symptoms of PTSD are flashbacks, apathy, insomnia, irritability, hypervigilance, anorexia, and physical symptoms of anxiety. Men suffering from PTSD often develop it due to their occupation (soldiers, policemen, firemen etc.), while women more often develop it after experiencing sexual or physical abuse (Newth, 2011).

Biological, psychological, and sociological basis of anxiety disorders

The aetiology of anxiety disorders has been subject of much debate. Medicine has traditionally held that most mental health disorders have an underlying physical pathology. There is clear evidence that patients suffering from anxiety disorders exhibit altered brain biochemistry and anatomy (overactive hypothalamic–pituitary–adrenal axis (HPA axis), enlarged amygdala, lower levels of certain neurotransmitters like serotonin and brain-derived neurotrophic factor (BDNF) etc.), however, attempts to treat anxiety disorders solely with the use of pharmaceuticals have not been successful (Vanin and Helsley, 2008). On the other hand, psychologists have proposed several mechanisms and have argued that anxiety disorders stem from internal conflicts (psychoanalysis), that they are learned responses (behavioural psychology) (Stossel, 2014) or that they develop when a person lacks a sense of purpose in life (existential psychotherapy) (Frankl, 2008). Recently, several cognitive and behavioural processes which contribute to the development and maintenance of anxiety disorders have been identified, such as overestimation of threat, safety behaviours, intolerance of uncertainty or distress, anxiety sensitivity, worry and rumination, perfectionism etc. (Abramowitz and Blakey, 2020). Although less commonly mentioned, there is a school of thought in sociology that rapid societal changes might also be contributing to higher levels of anxiety in the population (Salecl, 2007).

Anxiety disorders as comorbidity

Anxiety disorders often develop in patients suffering from physical ailments. Elevated levels of anxiety and anxiety disorders have been detected in patients suffering from cardiovascular disease, respiratory diseases (asthma, COPD), cancer and chronic pain conditions (fibromyalgia, arthritis, chronic back pain). Because anxiety disorders can complicate and worsen the primary conditions, it is imperative that they be recognised and properly managed (Zvolensky and Smits, 2008). The relationship between anxiety disorders and physical illnesses is, however, bidirectional – people suffering from certain anxiety disorders like PTSD, panic disorder and GAD are more likely to develop cardiovascular or respiratory disease (Sala, 2008).

Treatment of anxiety disorders

Anxiety disorders are most commonly treated with the use of pharmacological agents. For much of the 20th century, anxiolytics were a popular choice but have been replaced by antidepressants (SSRI, SNRI) in recent years. Although pharmaceuticals help many people and can greatly improve quality of life for some, not all patients respond to them and some refuse to take them due to unpleasant side effects (Stossel, 2014). Psychotherapy, especially cognitive-behavioural therapy (CBT) and acceptance and commitment therapy (ACT) are both effective in treating anxiety disorders but can be expensive, lengthy, and thus inaccessible to many (Vanin and Helsley, 2008). In recent years, there has been a growing body of research in the field of exercise-based and somatic interventions for the treatment of anxiety disorders. Movement therapy, especially aerobic exercise and strength training, seems promising, as it has been known to deliver anxiolytic effects (Kandola et al., 2018). Regular exercise also influences the cognitive and behavioural processes involved in anxiety disorders and can be a type of exposure therapy (e.g., for people with panic disorder), it can decrease anxiety sensitivity and intolerance of uncertainty and can strengthen self-efficacy (Anderson and Shivakumar, 2013). Group exercise has a sociological component (Skjaerven et al., 2018). Different relaxation and breathing techniques have also shown potential for the treatment of anxiety disorders (Jerath et al., 2015). On the other hand, passive techniques such as manual therapy have not shown to be effective except in the

short term (Kukimoto et al., 2017; Grafton-Clarke et al., 2018). Physiotherapists in Scandinavian countries have developed certain methods for treating mental health disorders, like the Basic Body Awareness Therapy (BBAT) and Norwegian Psychomotor Therapy (NPMT). The aim of both approaches is to strengthen the body-mind connection and for the patients to develop physical as well as psychological flexibility and strength (Gyllensten et al., 2018; Ekerholt and Gretland, 2018).

2. METHODS

We used literature review as our main method. We searched PubMed for meta-analyses, systematic reviews, or controlled studies in English, Slovene or Spanish dating from 2010 to 2022 using the following keywords: anxiety, physiotherapy/physical therapy, psychiatry, psychology, psychotherapy, mental health, exercise therapy, respiratory therapy, manual therapy, and the biopsychosocial model.

3. RESULTS

The combination of keywords yielded 2764 results in the PubMed database. Having applied the inclusion and exclusion criteria, we were left with 167 unique studies. Of those, 10 with the highest concordance with our theme were included in our review.

4. DISCUSSION

Our analysis of results shows that physiotherapy is not commonly used in the treatment of anxiety disorders and that this field lacks proper research. Most studies were done using exercise therapy, which shows some promise and anxiolytic effects. Both aerobic training and strength training showed low to moderate effects on anxiety symptoms, with aerobic, high intensity exercise yielding slightly better and longer lasting results (Ramos-Sanchez et al., 2021; Gordon et al., 2017; Aylett et al., 2018; Barahona-Fuentes et al., 2021; Aidar et al., 2018; Ferreira et al., 2018). The exact mechanism of this effect is not yet known, but some authors hypothesize that regular exercise could potentially regulate the HPA axis, the levels of neurotransmitters and other chemicals (endorphins) in the central nervous system (Kandola et al., 2018). Relaxation techniques, like Progressive Muscle Relaxation, the Jacobson Relaxation Technique, and several others, have shown moderate to large effects in relief of anxiety symptoms. These techniques decrease muscular tension and encourage slow breathing, thus decreasing the activation of the sympathetic and increasing the activation of the parasympathetic nervous system (Kim and Kim, 2017). Manual therapy techniques, reviewed by Kamonseki et al. (2020) have not shown statistically significant effects on fear avoidance, kinesiophobia and catastrophising. Basic Body Awareness Therapy did not have statistically significant effects on symptoms of anxiety at the end of the intervention but did have them at 12- and 24-months post-intervention (Bravo et al., 2018). Norwegian Psychomotor Therapy decreased the symptoms of anxiety and depression from clinical to subclinical level but only had statistically significant effects on quality of life, not anxiety symptoms specifically (Breitve et al., 2010). There are many qualitative studies showing positive effects of BBAT and NPMT on anxiety and mental health disorders, but since our review was limited to quantitative studies, these could not be considered (Danielsson et al., 2013; Ölund et al., 2018; Probst and Skjaerven, 2018).

5. CONCLUSION

Anxiety disorders are common mental health disorders which can be hard to treat with the use of pharmaceuticals and psychotherapy alone. Based on our review, we believe that physiotherapy,

especially exercise therapy and relaxation techniques could play an important role in the comprehensive treatment of anxiety disorders.

6. REFERENCES

1. World Health Organization. (2022, June 8). *Mental disorders*. World Health Organization. Retrieved November 29, 2022, from <https://www.who.int/news-room/fact-sheets/detail/mental-disorders>
2. Klanšček, H. J., Zorko, M., Bajt, M. and Roškar, S. (ed.). (2009). *Duševno zdravje v Sloveniji*. Ljubljana: Inštitut za varovanje zdravja.
3. Šprah, L., Novak, T. in Dernovšek, M. Z. (2011). *Elaborat: Ocena tveganj za razvoj težav v duševnem zdravju prebivalcev Republike Slovenije: analiza tveganj za razvoj težav v duševnem zdravju prebivalcev Republike Slovenije v posameznih statističnih regijah s pomočjo prilagojene metodologije Indeksa boljšega življenja*. Ljubljana: Ministrstvo za zdravje Republike Slovenije.
4. Vanin, John R. and Helsley, J. D. (Eds.). (2008). *Anxiety disorders: a pocket guide for primary care*. Totowa, New Jersey: Humana Press.
5. Zvolensky, M. J. and Smits, J. A. J. (eds.). (2008) *Anxiety in health behaviors and physical illness*. New York: Springer.
6. Kandola, A., Vancampfort, D., Herring, M., Rebar, A., Hallgren, M., Firth, J. and Stubbs, B. (2018). *Moving to beat anxiety: epidemiology and therapeutic issues with physical activity for anxiety*. *Current Psychiatry Reports*, 20(63).
7. Ölund, H., Danielsson, L. and Rosberg, S. (2018). *Anxiety management: participants' experiences of a physiotherapeutic group treatment in Swedish psychiatric outpatient care*. *Physiotherapy Theory and Practice*.
8. Probst, M. (2017). *Physiotherapy and mental health*. In: Toshiaki, S. (ed.), *Clinical physical therapy*. Intechopen.
9. World Physiotherapy. (n.d.). <https://world.physio/subgroups/mental-health>
10. *Resolucija o nacionalnem programu duševnega zdravja 2018–2028 (ReNPDZ18-28)*. (2018). Uradni list RS, št. 24/18. <http://www.pisrs.si/Pis.web/preqledPredpisa?id=RESO120>
11. Newth, S. (2011). *Orodje za anksiozne motnje: Informacije za učinkovito spoprijemanje z anksioznostjo in anksioznimi motnjami*. British Columbia: BC Partners for Mental Health and Addictions Information.
12. Steimer, T. (2002). *The biology of fear- and anxiety-related behaviors*. *Dialogues in Clinical Neuroscience*, 4(3).
13. Stossel, S. (2014). *My age of anxiety*. London: Windmill Books.
14. Frankl, V. (2008). *Man's search for meaning: the classic tribute to hope from the holocaust*. London: Rider.
15. Abramowitz, J. S. in Blakey, S. M. (eds.). (2020). *Clinical handbook of fear and anxiety. Maintenance processes and treatment mechanisms*. Washington, D.C.: American Psychological Association.
16. Salecl, R. (2007). *O tesnobi*. Ljubljana: Sophia.
17. Sala, T., Cox, B.J. and Sareen, J. (2008). *Anxiety disorders and physical illness comorbidity: an overview*. In: Zvolensky, M. J. in Smits, J. A. J. (eds.) *Anxiety in health behaviors and physical illness*. New York: Springer.
18. Anderson, E., and Shivakumar, G. (2013). *Effects of exercise and physical activity on anxiety*. *Frontiers in Psychiatry*, 4.
19. Skjaerven, L.H., Reitan Parker, A. in Mattson, M. (2018). *Group therapeutic factors for use in physiotherapy in mental health: a core in group physiotherapy*. V: Probst, M. in Skjaerven, L. *Physiotherapy in mental health and psychiatry: a scientific and clinical based approach*. Edinburgh: Elsevier.
20. Jerath, R., Crawford, M. W., Barnes, V. A., and Harden, K. (2015). *Self-regulation of breathing as a primary treatment for anxiety*. *Applied Psychophysiology and Biofeedback*, 40(2), 107–115.

21. Kukimoto, Y., Ooe, N., in Ideguchi, N. (2017). *The effects of massage therapy on pain and anxiety after surgery: A systematic review and meta-analysis. Pain Management Nursing, 18(6), 378–390.*
22. Grafton-Clarke, C., Grace, L., Roberts, N. in Harky, A. (2018). *Can postoperative massage therapy reduce pain and anxiety in cardiac surgery patients? Interactive Cardiovascular and Thoracic Surgery, 28(5), 716–721.*
23. Gyllensten, A. L., Skoglund, K. and Wulf, I. (2018). *Basic body awareness therapy: Embodied identity. Stockholm: Vulkan.*
24. Ekerholt, K. in Gretland, A. (2018). *Norwegian psychomotor physiotherapy, a brief introduction. V: Probst, M. in Skjaerven, L. Physiotherapy in mental health and psychiatry: a scientific and clinical based approach. Edinburgh: Elsevier.*
25. Ramos-Sanchez, C. P., Schuch, F. B., Seedat, S., Louw, Q. A., Stubbs, B., Rosenbaum, S., Firth, J., van Winkel, R. and Vancampfort, D. (2021). *The anxiolytic effects of exercise for people with anxiety and related disorders: An update of the available meta-analytic evidence. Psychiatry Research, 302, 114046.*
26. Gordon, B. R., McDowell, C. P., Lyons, M. and Herring, M. P. (2017). *The effects of resistance exercise training on anxiety: A meta-analysis and meta-regression analysis of randomized controlled trials. Sports Medicine, 47(12), 2521–2532.*
27. Aylett, E., Small, N. and Bower, P. (2018). *Exercise in the treatment of clinical anxiety in general practice – a systematic review and meta-analysis. BMC Health Services Research 18:559.*
28. Barahona-Fuentes, G., Huerta Ojeda, Á., and Chiroso-Ríos, L. (2021). *Effects of training with different modes of strength intervention on Psychosocial Disorders in adolescents: A systematic review and meta-analysis. International Journal of Environmental Research and Public Health, 18(18), 9477.*
29. Aidar, F. J., Jacó de Oliveira, R., Gama de Matos, D., Chilibeck, P. D., de Souza, R. F., Carneiro, A. L., and Machado Reis, V. (2018). *A randomized trial of the effects of an aquatic exercise program on depression, anxiety levels, and functional capacity of people who suffered an ischemic stroke. The Journal of Sports Medicine and Physical Fitness, 58(7-8).*
30. Ferreira, R. M., Alves, W. M., Lima, T. A., Alves, T. G., Alves Filho, P. A., Pimentel, C. P., Sousa, E. C. and Cortinhas-Alves, E. A. (2018). *The effect of resistance training on the anxiety symptoms and quality of life in elderly people with Parkinson's disease: A randomized controlled trial. Arquivos De Neuro-Psiquiatria, 76(8), 499–506.*
31. Kim, H.-sil and Kim, E. J. (2018). *Effects of relaxation therapy on anxiety disorders: A systematic review and meta-analysis. Archives of Psychiatric Nursing, 32(2), 278–284.*
32. Kamonseki, D. H., Christenson, P., Rezvanifar, S. C., and Calixtre, L. B. (2021). *Effects of manual therapy on fear avoidance, kinesiophobia and pain catastrophizing in individuals with chronic musculoskeletal pain: Systematic review and meta-analysis. Musculoskeletal science & practice, 51, 102311. <https://doi.org/10.1016/j.msksp.2020.102311>*
33. Bravo, C., Skjaerven, L. H., Espart, A., Guitard Sein-Echaluze, L., and Catalan-Matamoros, D. (2018). *Basic body awareness therapy in patients suffering from fibromyalgia: A randomized clinical trial. Physiotherapy Theory and Practice, 35(10), 919–929.*
34. Breivte, M. H., Hynninen, M. J., in Kvåle, A. (2010). *The effect of psychomotor physical therapy on subjective health complaints and psychological symptoms. Physiotherapy Research International, 15(4), 212–221.*
35. Danielsson, L., Hansson Scherman, M. and Rosberg, S. (2013). *To sense and make sense of anxiety: Physiotherapist's perceptions of their treatment for patients with generalized anxiety. Physiotherapy Theory and Practice, 29(8), 604–615.*
36. Probst, M. and Skjaerven, L. (2018). *Physiotherapy in mental health and psychiatry: a scientific and clinical based approach. Edinburgh: Elsevier.*