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AN INTEGRATIVE REVIEW ON THE SYNERGY OF PHYSIOTHERAPY AND AYURVEDIC IN NEUROMUSCULAR DISORDER

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ABSTRACT

This review explores the integration of physiotherapy and Ayurvedic medicine, focusing on their synergistic potential in managing musculoskeletal disorders, neurological conditions, and pain management. Ayurveda, with its holistic and individualized treatment protocols, complements physiotherapeutic practices aimed at restoring mobility and function. Ayurveda, a traditional Indian system of medicine, emphasizes holistic healing considering the individuals unique constitution & promoting balance within body & mind, while physiotherapy focuses on restoring function and improving mobility, physiotherapy utilize physical techniques like exercise, manual therapy, & modalities. The combined physiotherapy- Ayurveda approach may enhance patient- centered care and contribute to more sustainable health outcome

KEY WORDS; *Physiotherapy, Paralysis, Pakshaghata, Vatavyadi.*

INTRODUCTION

The integration of traditional and modern healthcare systems is gaining increasing attention in contemporary medical practice. Physiotherapy, a modern therapeutic approach focused on restoring movement and function, has proven to be highly effective in managing musculoskeletal, neurological, and cardiorespiratory conditions. Ayurveda, one of the world's oldest holistic healing systems originating in India, emphasizes balance in the body through diet, lifestyle, herbal treatments, and natural therapies.

Combining physiotherapy with Ayurvedic principles presents a unique, complementary approach that aims to not only treat symptoms but also address the root cause of ailments. This review explores the potential benefits, methodologies, and clinical relevance of integrating Ayurvedic therapies—such as Abhyanga (therapeutic massage), Swedana (herbal steam therapy), and Panchakarma (detoxification)—with conventional physiotherapeutic practices. The goal is to provide a holistic view of patient care that enhances recovery, promotes well-being, and improves quality of life.

By evaluating available literature, clinical practices, and patient outcomes, this review highlights the scope and effectiveness of a combined physiotherapy and Ayurvedic approach, aiming to contribute to the development of integrative rehabilitation models in modern healthcare.

The synergy between Ayurveda and physiotherapy offers a promising integrative approach to healthcare by combining ancient wisdom with modern science. While physiotherapy focuses on restoring movement, function, and strength through physical techniques, Ayurveda emphasizes balance in the body through natural therapies, lifestyle modifications, and herbal remedies.

Together, these systems can complement each other to provide holistic and individualized care. Ayurvedic therapies can enhance the effectiveness of physiotherapy by reducing inflammation, improving circulation, and preparing the body for physical rehabilitation. Likewise, physiotherapy can support Ayurvedic treatment by strengthening muscles and improving joint mobility, aiding in long-term recovery and prevention of relapse.

This review explores the synergistic relationship between Ayurveda and physiotherapy, highlighting how their integration can improve treatment outcomes, especially in Neurological disorder, and rehabilitation settings. It aims to provide insights into combined therapeutic protocols that not only target the physical body but also promote overall well-being.

METHODOLOGY

Introduction to Neurological and Musculoskeletal Disorders

Neurological and musculoskeletal disorders are two major categories of health conditions that affect the nervous and musculoskeletal systems of the human body. Neurological disorders involve damage or dysfunction in the brain, spinal cord, or peripheral nerves, leading to issues such as stroke, Parkinson's disease, multiple sclerosis, and neuropathy. These conditions often result in impairments in movement, sensation, coordination, and cognition.

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Musculoskeletal disorders, on the other hand, affect muscles, bones, joints, ligaments, and tendons. Common examples include arthritis, osteoporosis, back pain, and muscular dystrophy. These disorders are characterized by pain, stiffness, swelling, and reduced mobility.

Both types of disorders can significantly impact an individual's quality of life and may require multidisciplinary management, including medication, physical therapy, and lifestyle changes. Understanding these disorders is essential for effective diagnosis, treatment, and rehabilitation.

Processing of Information-"Integrative" Function of the Nervous System

The important functions of the nervous to process incoming information in such a way that relevant to mental and motor responses will occur. More than 99 percent of sensory information is rejected by the brain as unimportant. For instance, one is unaware of the parts of the body that are in contact with clothing, as well as of the seat pressure when sitting. Likewise, attention draws only in an occasional object in one's field of vision, and even the perpetual noise of our surroundings is relegated to the subconscious mind.

When the brain receives important sensory input, it quickly processes and directs it to the appropriate and action. This coordination between perception and response is known as integrative function of the nervous system[1].

WEAKNESS AND PARALYSIS[2]

Motor function involves integrated muscle activity that modulated by the activity of the cerebral cortex, basal ganglia, cerebellum, and spinal cord. Motor system dysfunction leads to weakness or paralysis, or abnormal movements. The mode of distribution, onset and accompaniments of weakness suggest its cause.

Weakness is a reduction in the power that can be apply to one or more muscles, Increased limitation in function due pain or articular stiffness is often confused with weakness by patients.

Paralysis indicates weakness that the muscle cannot be contracted at all, whereas paresis refers to weakness - mild or moderate. The prefix "hemi-" refers to one half of the body, "para-" to both legs, and "Quadri-" to all four limbs. The suffix-plegia" signifies severe weakness or paralysis.

paralysis is typically accompanied by other neurologic abnormalities that help to indicate the site of the responsible lesion. These include changes in tone, cutaneous reflexes, muscle bulk and muscle stretch reflexes.

PATHOGENESIS

Upper Motor Neuron Weakness[3]

This pattern of weakness results from disorders that affect the upper motor neurons or their axons in the cerebral cortex, internal capsule, subcortical white matter, brainstem, or spinal cord. Such lesions produce weakness in the lower motor neurons. In general, distal muscle groups are affected more than proximal ones, and axial movements, unless the lesion is severe and bilateral. With corticobulbar involvement, weakness is usually only in the lower face and tongue; extraocular, upper facial, pharyngeal, and jaw muscles are al-most always spared. With bilateral corticobulbar lesions, pseudobulbar palsy often develops: dysarthria, dysphagia, emotional and dysphonia.

Lower Motor Neuron Weakness[4]

This pattern results from disorders of the cell bodies of lower motor neurons in the brainstem motor nuclei and larger alpha motor neurons are more numerous and stimulate the extrafusal muscle fibers of motor unit. Loss of alpha motor neurons produces lower motor neuron weakness. The smaller, less numerous gamma motor neurons stimulate the intrafusal muscle, fibers of the muscle spindle and contribute to normal tone and stretch reflexes. The alpha motor neuron receives excitatory input from corticomotoneurons and primary muscle spindle afferents. The alpha and gamma motor neurons also receive excitatory input from descending upper motor neuron pathways, segmental sensory inputs, and interneurons, The alpha motor neurons receive direct inhibition from Renshaw cell interneurons, and other interneurons indirectly inhibit the gamma and alpha motor neurons.

HEMIPARESIS[5]

Hemiparesis results from an upper motor neuron lesion above the midcervical spinal cord; such lesions are above the foramen magnum. A "pure motor hemiparesis of face, arm, or leg is often due to a small, separate lesion in the posterior limb of the internal capsule, cerebral peduncle. Some brainstem lesions give rise to "crossed paralyses," consisting of ipsilateral cranial nerve signs and contralateral hemiparesis.

Subacute hemiparesis that evolves over days or weeks has a substantial differential diagnosis. A common cause is subdural hematoma, especially in elderly patients, even when there is no history of trauma. Infectious possibilities include parasitic infection, cerebral abscess, and meningitis. Weakness from initially and metastatic neoplasms may evolve over days to weeks.

Chronic hemiparesis that evolves over months is usually due to a vascular malformation, a chronic subdural hematoma. If an MRI of brain is normal, the possibility of a high cervical spinal cord lesion should be considered.

PARAPARESIS

An intraspinal lesion at or below the upper thoracic spinal cord is most commonly responsible, but a paraparesis may also result from lesions at various sites that disturb upper motor neurons especially parasagittal intracranial lesions and lower motor neurons anterior horn cell disorders, cauda equina syndromes due to complicity of nerve roots derived from the lower spinal cord, and peripheral neuropathies.

Acute paraparesis may not be concede as due to spinal cord disease at an early stage if the legs are flaccid and areflexic. Usually, however, there is sensory loss in the legs with an upper level on the trunk a disconnected sensory loss suggestive of a central cord syndrome. It is important to image the spinal cord. Compressive lesions, spinal cord infarction, an arteriovenous

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fistula or various vascular anomaly, and transverse myelitis, are among the causes.

Subacute or chronic paraparesis with spasmodic is caused by upper lower-limb sensory motor neuron disease. When there is related to lower-limb loss and sphincter involvement, a chronic spinal cord disorder is likely. If an MRI of the spinal cord is normal, MRI of the brain may be indicated. If hemispheric signs are present, a parasagittal meningioma or chronic hydrocephalus is likely and MRI of the brain is the initial test.

QUADRIPARESIS OR GENERALIZED WEAKNESS

Generalized weakness due to disorders of the CNS or of the motor unit. Although the terms quadriparesis and generalized weakness are often used equivalent, quadriparesis is used when an upper motor neuron cause is suspected, and generalized weakness.

Acute quadriparesis with onset duration may result from diseases of upper motor neurons. Onset period of hours to weeks may, in addition to the above, be due to lower motor neuron diseases. Guillain-Barré syndrome is the common lower motor neuron weakness that developing over days to 4 weeks; the finding of an elevated protein level in cerebrospinal fluid is helpful but may absent early in the period of course.

Sub-Acute or chronic quadriparesis When quadriparesis due to upper motor neuron disease duration over weeks, months, or years, the distinction between disorders of cerebral hemispheres, cervical spinal cord , and brainstem, is usually clinically possible. MRI is obtained of the clinically suspected area of pathology. EMG and nerve conduction studies help to differentiate lower motor neuron disease from myopathic weakness, which is proximal.

MONOPARESIS

This is due to lower motor neuron disease, with or without related to sensory involvement. Upper motor neuron weakness sometimes presents as a monoparesis of distal and nonantigravity muscles. Myopathic weakness is rarely limited to one limb of the body.

Acute monoparesis If the weakness is mainly in distal and nonantigravity muscles and not associated with sensory impairment or pain, focal cortical ischemia is likely diagnostic possibilities are like those for acute hemiparesis. Sensory loss and pain usually go with acute lower motor neuron weakness: the weakness is commonly localized to a single nerve root or peripheral nerve within the limb but sometimes reflects plexus involvement. If lower motor neuron weakness is suspected.

Subacute or chronic monoparesis Weakness and atrophy that develop duration of weeks or months are usually of lower motor neuron origin If they are related to sensory symptoms, a peripheral cause in the absence of such symptoms, anterior horn cell disease should be considered. In either case, an electrodiagnostic study is indicated. If weakness is of upper motor neuron type, a discrete cortical, and an imaging study is performed of the appropriate area.

Physiotherapy Exercises for Stroke Patients with Paralysis
Exercise for stroke patients with paralysis should involve passive exercise to help restore movement.

Active vs Passive Rehabilitation Exercise: -
Active rehabilitation exercise involves doing a movement on your own.

- Passive exercise involves assisting affected limbs through a movement. Passive exercise helps with paralysis recovery because it involves using non-affected side to move the paralyzed muscles. When rehabilitating heavier limbs, like the legs, passive exercise will require the help of a care giver, therapist, or family member. Also, if both sides of the body were affected by stroke, then assistance from another person will also be required. Passive rehab exercise helps parlays is recovery because it activates neuro plasticity, the mechanism that brain uses to rewire itself after injury. When stroke damages part of brain, neuroplasticity allows other parts of the brain to take over. Neuroplasticity is how you regain movement after stroke. For regaining movement after post-stroke paralysis, there is a need to practice passive stroke exercise repetitively, as much as possible**.** In the beginning, start with passive exercise. As you slowly regain small amounts of movement, you can eventually progress to active exercises. Progress can be very slow. However, once patients see twitches or tiny movements start to come back, it will motivate them to continue with their passive exercise.

List of exercises for paralytic subjects

- Arm & leg exercises
- facial exercises for bell's palsy
- wrist curl
- ball grip
- pinch & release
- finger exercises
- Hip Flexion with Hold Arm Punching Movement

Exercises for Mobility and Strength

- Range of motion exercises
- Resistance band exercises
- Weight-bearing exercises
- Functional exercises

Exercises for Balance and Coordination

- Single-leg standing
- Heel-to-toe walking
- Balance boards or BOSU ball training
- Reaction training

Exercises for Gait and Walking

- Treadmill training
- Overground walking
- Obstacle course training
- Gait training with assistive devices

Exercises for Cognitive Function

- Cognitive training
- Dual-task training

Approaches -

- Roods Approach

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- Bobath Approach/NDT
- MRP- Motor Relearning Program

AYURVEDA REVIEW

Pakşaghata/Pakşavadha (Paralysis)

Nidana (aetiology)

1. All the etiological factors mentioned for Vatavyadhi
2. Bloodletting therapy

If ignorant physician perform bloodletting therapy in too hot season & after excessive sudation therapy as a result blood flows out excessively resulting in the manifestation of Pakşaghata[6].

Pakşaghata may manifest in pregnant women, women after delivery, old people, emaciated persons & that caused by heavy bleeding and loss of sensation in the affected limbs should be refused for treatment[7].

Pakşaghata manifest due to injury to Lohita marma & Kakşadhara marma[8].

Samprapti & Lakşaṇa[9]

1. Aggravated Vata seizes power of half of the body i.e. on either right or left cause's dryness of Sira & Snayu and manifest symptoms like loss of movement, pain, and loss of speech. Vata causes contracture in one of the feet or hands with piercing pain & distress, is the characteristic feature of Ekanga roga. If the affliction of Vata is generalised, this is known as Sarvanga roga.
2. Excessively aggravated Vata inside the Dhamani's moves downwards, obliquely, and upwards and paralyses on either side of the body i.e. right or left by loosening the bonds of the bindings of the joints is called Pakşaghata & it is characterised by loss of functions in half portions of the body, unconsciousness, falls or dies because of being afflicted with Vata.

If Pakşaghata manifest by Vata alone is regarded as curable with great difficulty; if it is associated with either Pitta or Kapha Doşa then it becomes curable and while that caused by depletion of Dhatus is incurable[10].

Types of Pakşaghata:

Depending upon the body part involved,

1. Ekanga ghata: Monoplegia- in this state only one hand or leg get affected.
2. Adharanga ghata: Paraplegia- in this state both the lower extremities are affected.
3. Sarvanga ghata: Diplegia- most of the times this is congenital defect and both arms and legs get paralyzed.

Sadhyasadhyata

1.Paksaghata which has been developed only due to the vitiation of Vata doşa is kaşţasadhya.
2. If it is developed due to aggravation of Vata due to loss of tissues, then it is also kaşţasadhya.
3. The one that is develop due to vitiation of kapha & pitta along with Vata is Sadhya.
4. If it affects pregnant women, children, old people, and debilitated persons then it is incurable.
5. If it is painless type then it is also incurable[11].

Principles of treatment in Ayurveda[12]

The general line of treatment for all Vata disorders should be followed in pakşaghata. This includes use of ghrta, taila, vasa, and majja for the purpose of oleation, massage, ememas or nasya followed by fomentation. Food should consist of madhura, amla, lavaṇa in tastes and should posing nourishing quality. If there is vitiation of Siragata rakta, and pitta, one should use fomentation and purgative, which have slightly unctuous or oily in nature.

Following therapeutic approach are described in the classics for its management.

1. Medicated fomentation, which is oleous in nature.
2. Use of oleous purgatives
3. Sneha and sneha mixed purgatives are advised by Vagbhata.
4. Sharp purgatives and vasti therapy are advised by Bhavaprakasa.

Mechanics of Skeletal Muscle Contraction[13]

The Motor Unit

Each motoneuron that leaves the spinal cord stimulates multiple different muscle fibers, the numbers are depending on the type of muscle. All the muscle fibers stimulate by a single motor nerve fiber are called a motor unit. In general, small muscles that react fastly and whose control must be exact have only few muscle fibers in each motor unit. Conversely, large muscles that do not require fine control, may be have several hundred muscle fibers in a motor unit.

Muscle Contractions of Different Force-Force Summation

Summation means the adding together of individual tremble contractions to increase the intensity of all the muscle contraction. these occurs in two ways:

(1) by increasing the number of motor units contracting at the same time, which is called multiple fiber summation, and

(2) by increasing the frequency of contraction, which is called frequency summation, and which lead to tetanization.

Maximum Strength of Contraction. The maximum strength of tetanic contraction of a muscle intervene at a normal muscle length between 3 and 4 kilograms per square centimeter of muscle. Because a quadriceps muscle can at times have as much as 16 square inches of muscle belly, as much as 800 pounds of tension may at times be appeal to the patellar tendon.

Changes in Muscle Strength at the Onset of Contraction-The Staircase Effect (Treppe). When a muscle begins to contract after a long time of rest, its starting strength of contraction may be as little as one half its strength 10 to 50 muscle twitches later. That is, the strength of contraction increases to plateau, a phenomenon called the staircase effect, or treppe. Although all the feasible causes of the staircase effect are not known, it is believed initially to be caused by increase of calcium ions in the cytosol because of release of more and more ions from the sarcoplasmic reticulum with each successive muscle action potential and failure to recapture the ions.

Skeletal Muscle Tone[14]

Even when muscles are at rest position, a certain amount of tautness remains. This is called muscle tone. Because skeletal

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muscle fibers do not contract without an action potential to innervate the fibers. skeletal muscle tone results completely from a low rate of nerve impulses coming from the spinal cord. These in turn are manage partly by impulses transmitted from the brain to the appropriate anterior motoneurons and partly by impulses that arises in muscle spindles located in the muscle itself.

GENERAL MECHANISM OF MUSCLE CONTRACTION[15]

Muscle contraction occurs in the following sequential steps.

1. An action potential moves along a motor nerve to its endings on muscle fibers.
2. At each ending, the nerve secretes a small quantity of the neurotransmitter substance acetylcholine.
3. The acetylcholine acts on a local region of the muscle fiber membrane to open multiple acetylcholine-gated channels through protein molecules unsettled in the membrane.
4. Opening of the acetylcholine-gated channels permit large quantities of sodium ions to flow to the interior of the muscle fiber membrane. This initiates an action prospective in muscle fiber.
5. The action probable travels along the muscle fiber membrane in the same direction that action potentials travel through nerve membranes.
6. The action probable depolarizes the muscle membrane, and much of the action potential electricity also moves deeply within the muscle fiber. Here it causes the sarcoplasmic reticulum to liberation large quantities of calcium ions that have been stored within this reticulum.
7. The calcium ions initiate seductive forces between the actin and myosin filaments, causing them to slide beside each other, which is contractile process.
8. After a split second, the calcium ions are pumped back into the sarcoplasmic reticulum by a Ca^{+} membrane pump, and they stored until a new muscle action potential comes along: this removal of the calcium ions from the myofibrils causes muscle contraction to cease.

Musculoskeletal disorder & pain management

Manual Therapy

- Joint mobilization- Mulligan technique, Maitland technique kaltenborn technique
- Soft tissue mobilization - MFR

Exercise Therapy

- Strengthening exercises
- Range of motion exercises
- Functional exercises
- Stretching exercises

Modalities

- Heat therapy - HMP
- Electrical stimulation
- Ultrasound therapy
- Cold therapy
- Contrast bath
- TENS- transcutaneous electrical simulation
- IFT- interferential therapy
- Laser therapy
- IRR- infrared radiation
- FES- functional electrical stimulation
- NMES -neuromuscular electrical stimulation
- Short wave diathermy

AYURVEDIC REVIEW

Introduction

Musculoskeletal disorders (MSDs) affect bones, joints, muscles, and connective tissues, often resulting in pain, stiffness, inflammation, and functional disability. Ayurveda, the ancient Indian system of medicine, provides a comprehensive understanding of these disorders through the lens of dosha imbalance, particularly Vata dosha, and Dhatu (tissue) dysfunction.

Ayurvedic Perspective

1. Vata Vyadhi[16]: Most musculoskeletal disorders fall under Vata Vyadhi. Aggravated Vata impairs the functioning of Mamsa (muscles), Asthi (bones), Majja (marrow/nerves), and Sandhi (joints).
2. Sandhi-gata Vata (Joint Disorders): Characterized by pain, stiffness, swelling, and crepitus in joints.Closely parallels osteoarthritis in modern medicine.
3. Ama Vata (Inflammatory Joint Disorders): Caused by the accumulation of Ama (toxins) and aggravated Vata. Resembles rheumatoid arthritis, with symptoms like joint pain, fever, stiffness, and loss of appetite.
4. Mamsa-gata Vata: Vata affecting muscle tissue, leading to atrophy, spasm, or weakness.
5. Asthi-gata Vata: Degeneration of bone tissue due to aggravated Vata, leading to pain, brittleness, and bone deformities.

Etiology (Nidana)[17]:

Improper diet (Viruddha Ahara) Excessive exertion Suppression of natural urges (Vegadharana) Exposure to cold and dryness, Aging, day sleep, excessive fasting, Ama dosha, etc (natural Vata increase)

Vatavyadhi Samprapti[18]

Vata, pitta and kapha move through all channels of circulation. Due to subtle nature of vata it impels the remaining two dosas. The aggravated vata expel out provoked pitta & kapha dosas into different places of the body, & obstructs the channels of circulation leading to manifestation of various diseases and dries up the bodily tissue elements.

Above etiological factors aggravate Vata in excess and exacerbated Vata fills up the empty channels and moves greatly inside them or by getting enveloped by the other Doṣas, which have filled up the channels and produces different kinds of ailments affecting the whole body or a part of the body.

Vatavyadhi samanyarupa (General signs & symptoms of Vatavyadhi)[19]

The following signs & symptoms manifest, in Vatavyadhi are as follows: contraction, stiffness of joints; tearing pain in bones & joints; horripilation; delirium, spasticity of hands, back & head; lameness of hands & feet; hunch back; atrophy of limbs;

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insomnia, destruction of fetus, semen & menses; twitching sensation and numbness in the body; crookedness of head, nose, eye, clavicular region and back; splitting pain; pricking pain; distress; convulsion; unconsciousness; mental confusion and other features as per involvement of lesions.

Vatavyadhi a general approach of Management

Oleation, fomenatation, palliation and purification are included in general treatment of Vatika disorders[20].

1. Snehana karma (oleation therapy): Ghrta, taila, vasa and majja are preferred sneha dravyas, which are used in dhatukṣayajanya Vatavyadhi for oleation purpose after that anti-Vata regimen should be advised[21].

Properly performed oleation therapy nourishes the depleted dhatus as well as increases strength, digestive power, nourishment, and vitality in the body[22].

2. Brmhaṇa dietary items, Anuvasana vasti and snigdha drugs are strongly recomended for Vata aggrevation due to tissue loss, then after proper fomentaion should be given[23].

3. Svedana (fomentation): The affected part should be properly fomented after proper external oleation with anti Vata oil by various methods including Nadi, prastara, sankara sveda or whatever is feasible[24].

Properly perfomed Svedana karma pacifying various vatika disorders such as horripilation, pricking pain, Ayama, edema, body stiffness and tightness of the body. Side by side it also induces softness of the body parts[25].

The snehana and svedana therapy should be performed repeatedly in vatika disorders. By doing these measures the organs become soft in nature and any kinds of vatika disorders are not settled at this stage in the body[26].

4. Mrdu virecana (soft purgative): If Vatika disorders having greater strength of Dosas and they are pacified by above said measures, then soft purgative biopurificatory measures should be used in association with any kinds of oleous substances. Following formulations are preferred for this purpose.

a) Tilvaka siddha ghrta
b) Satala siddha ghrta
c) Eranda oil with milk[27].

5. Vatanulomana: By excessive use of Snigdha, Amla. Lavana and Uṣṇa etc in diet, the waste product gets accumulated and by occluding the various srotas may leads to obstruction to the path of Vata, hence the anulomana of Vata is essential to expel it out[28].

6. Niruha vasti : This is indicated in those persons having Vatika disorders who are week and not suitable for virecana karma. This type of vasti should be given with Dipana and pacana drugs and same drugs are used in diet with meal[29].

7. Nasya karma: Nasya and dhumapana are useful in vatika disorders. It means nasya measures are used in all types of vatika disorders[30].

CONCLUSION

The integration of physiotherapy with Ayurvedic principles offers a comprehensive and holistic approach to managing various health conditions, particularly those involving musculoskeletal and neurological disorders. While physiotherapy focuses on restoring movement and physical function through modern scientific techniques, Ayurveda emphasizes balance within the body through natural therapies, diet, and lifestyle modifications. This synergy not only enhances the effectiveness of treatment but also supports long-term wellness and prevention. Ayurveda offers a holistic and individualized approach to musculoskeletal disorders, aiming not just at symptom relief but at addressing the root cause through dosha balance, tissue nourishment, and detoxification. Integration of Ayurvedic therapies with physiotherapy or conventional treatment can offer improved outcomes and long-term relief.

Further research and clinical trials are essential to validate and standardize combined protocols, but the current evidence suggests that this integrative approach holds great promise for patient-centered, sustainable healthcare.

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20. *Agnivesha, charaka Samhita, priyavrat sharma, chaukhambha Orientalia Varanasi, chikitsa sthana volume 2, chapter no. 28, shloka no. 104.*
21. *Agnivesha, charaka Samhita, priyavrat sharma, chaukhambha Orientalia Varanasi, chikitsa sthana volume 2, chapter no. 28, shloka no.75.*
22. *Agnivesha, charaka Samhita, priyavrat sharma, chaukhambha Orientalia Varanasi, chikitsa sthana volume 2, chapter no. 28, shloka no.81.*
23. *Agnivesha, charaka Samhita, priyavrat sharma, chaukhambha Orientalia Varanasi, chikitsa sthana volume 2, chapter no. 28, shloka no.76.*
24. *Agnivesha, charaka Samhita, priyavrat sharma, chaukhambha Orientalia Varanasi, chikitsa sthana volume 2, chapter no. 28, shloka no.78.*
25. *Agnivesha, charaka Samhita, priyavrat sharma, chaukhambha Orientalia Varanasi, chikitsa sthana volume 2, chapter no. 28, shloka no.80.*
26. *Agnivesha, charaka Samhita, priyavrat sharma, chaukhambha Orientalia Varanasi, chikitsa sthana volume 2, chapter no. 28, shloka no.82.*
27. *Agnivesha, charaka Samhita, priyavrat sharma, chaukhambha Orientalia Varanasi, chikitsa sthana volume 2, chapter no. 28, shloka no.83.*
28. *Agnivesha, charaka Samhita, priyavrat sharma, chaukhambha Orientalia Varanasi, chikitsa sthana volume 2, chapter no. 28, shloka no.85.*
29. *Agnivesha, charaka Samhita, priyavrat sharma, chaukhambha Orientalia Varanasi, chikitsa sthana volume 2, chapter no. 28, shloka no.86.*
30. *Agnivesha, charaka Samhita, priyavrat sharma, chaukhambha Orientalia Varanasi, chikitsa sthana volume 2, chapter no. 28, shloka no.88.*