Integrative Approach of Vyayama and Panchakarma: Vis-A-Vis Physiotherapy Techniques

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ABSTRACT

Ayurvedic medicine is a kind of Indian traditional system of medicine that has been practiced for centuries. Treatment options in this system include different therapies of Ayurveda viz. Abhyanga (therapeutic oil massage), different varieties of Swedana (sudation), Vamana (therapeutic emesis), Virechana (therapeutic bowel evacuation), Basti (trans-rectal administration of processed Ayurvedic decoctions), Yoga, internal herbal and herbo-mineral medications, disease-specific dietary advice, etc. The consequence of therapies of Ayurveda works for the elimination of toxins from the body by the stimulation of srotas (micro-channels). In addition to the procedures of classical Ayurveda therapies, the patients desire to take physiotherapy for a speedy recovery from different ailments. It is observed that some patients benefited speedily from the adoption of exercise and manual physiotherapy procedures in an advanced way along with manual maneuvers run by Physiotherapists in addition to Ayurvedic treatments for those patients suffering from Frozen shoulder, varieties of paralysis, spasticity, brachial palsy, etc. The present review aims to describe the essentiality of an integrative approach of physio-therapeutic treatment with Ayurveda therapies to cure the ailment before than time required for individual treatment.

Keywords: Abhyanga, Basti, physiotherapy, Swedana, Vamana, Virechana.

I. INTRODUCTION

The public demands quick remedy through an Integrative treatment approach in different conditions where a single science fails to provide adequate treatment due to limitations in therapies. To help in the quick healing and rehabilitation of different ailments, exercise therapy is a sort of "hands-on" manual treatment based on each patient's unique medical history. The physiotherapist will provide the most effective therapy based on detailed assessment and examination. Ayurveda therapy in addition to Physiotherapy helps in relieving symptoms and restoring function, the therapy aims to cure the root of the issue. Physiotherapy uses a combination of electrotherapy and exercise therapy to treat patients suffering from various forms of paralysis [1].

The Ayurvedic therapies like Abhyanga (therapeutic oil massage) is a fundamental healing therapy for nourishment and revival of the tissues of the body which is conducted for 45 minutes per day and the duration is decided by the physician by using herbal oils customized according to the disease and healthy body. It has a vital role in healing different ailments. It provides psychological satisfaction to the normal and morbid individual [2].

Swedana (sudation/Medicated steam bath) is a traditional medicated steam bath that is disease-specific but can be prescribed for healthy individuals to maintain good physical health. Swedana softens the skin, clears the skin, decreases unwanted drowsy & sleep, and increases appetite [3]. Swedana is always followed by Abhyanga and this therapy helps in opening the skin pores and discharging the toxins out of the skin. It is of different types like Patra Pinda Sweda (PPS) i.e. steam bath by using medicinal plant leaves, Choorna Pinda Sweda (CPS) i.e. dry hot massage bath by using medicinal plant powder, Shali Shahtika Pinda Sweda (SSPS) i.e. steam bath by using Specific rice gruels [4].

Both Abhyanga (massage) and Swedana (sudation) are effective in painful joints, pain and stiffness in the whole body, musculoskeletal ailments, stroke (Ischemic/Hemorrhagic), circulating blood, and eliminating toxins from the body, nourishing skin, toning up the muscles and enhancing tissue strength [5].

When different therapies of Ayurveda and Physiotherapy are administered simultaneously, greater potentiality is achieved during the observation study in different clinical conditions. The value and outcomes of the therapy technique are congruent with the individual's goals. Physiotherapy and therapies of Ayurveda are designed specifically for persons who are unable to tolerate the rigorous of surgery, some postsurgical cases, rehabilitative conditions, spasticity, and paralytic conditions.

II. MATERIALS AND METHODS

This is a conceptual type of research where all kinds of references are collected from different Ayurvedic classics like Charaka Samhita, Sushruta Samhita, Astanga Hridaya, classical commentaries along with Physiotherapy texts and

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journals. All the materials are analyzed based on observation. Attempts have been made to explain the combined/integrative action of Ayurvedic therapy and Physiotherapy for the well-being of patients and normal individuals.

III. PHYSIOTHERAPY TECHNIQUES IN DIFFERENT CLINICAL CONDITIONS

A. Lower Limb Pain Management

There can be hand-on techniques and education to the people regarding sudden muscular neurological pain then how can they get rid of it. Some exercises help the patient to reduce pain. These are i) Straight leg raises ii) Hamstring Curls iii) Prone straight leg raises iv) Wall squats v) Calf raises vi) Step-ups vii) Side Leg Raises viii) Leg presses [6].

B. Sudden Pain Management

The main goal is to ensure that pain does not hinder you in any way, therefore start massaging the area where you are experiencing discomfort. This will aid in blood circulation and muscular relaxation. It is also a good idea to get up and walk about because sitting for an extended period can cause tissue to swell or go numb. Moving about helps relieve the discomfort by increasing muscular mobility. This is only true when the pain comes on suddenly and isn’t caused by an accident or a fall.

Stretching of muscles through the hamstring aids in immediate muscle relaxation, lower limb tension test may be performed to find the neurological intervention accordingly PNF technique taking stretching, positioning, and supporting aids help decrease the pain and cause. The pain management technique from pain killers includes i) physical therapy such as heat or cold packs, massage, hydrotherapy and exercise ii) psychological therapies such as cognitive-behavioral therapy, relaxation technique, and meditation iii) mind and body techniques such as acupuncture iv) community support group [7].

C. Musculoskeletal or Injury Related Pain

This occurs most frequently among sportsmen or as a result of an injury. The specialist will create a treatment strategy based on the appropriate diagnosis. Physiotherapy alone may be adequate in some circumstances, but it may also be effective when combined with other treatments. However, the kind and severity of the damage must be considered. Sarah N Casserley et al. described that “patient satisfaction with physiotherapy” in patients with (LBP) low back pain or musculoskeletal pain was deemed relevant. The article emphasizes multiple psychometric testing to confirm its validity and reliability as the survey instrument [8].

IV. AYURVEDIC TECHNIQUES OF EXERCISES

A. Isotonic Exercises (Vyayama in Ayurveda)

This is one method of muscular exercise when a contracting muscle shortens against contracting load during lifting a weight. Isotonic movements involve continuous vasoconstriction followed by vaso-relaxation, resulting in a reduction in peripheral vaso-resistance. As a result, both the systolic and diastolic blood pressures gradually fall. Jogging, swimming, brisk walking, cycling, and other similar activities are examples. Vyayama is the term used in Ayurveda which is essential for practice by strong persons who consume excessive fatty foods. It can be practised in all seasons to maintain self-health [9]. On the other hand, simple rhythmic body movements help to boost oxygen consumption, which improves the functioning of the cardiovascular system, and respiratory system and prevents ageing. Exactly like when a river flows with its usual active movement it does not allow any impure substance to lodge anywhere, the flow tries to clean the water similarly impurities increase in stagnated water without movement.

B. Isometric Exercises (Shrama in Ayurveda)

The exercise involves muscle engagement without movement. Isometric exercises, such as weight lifting, bodybuilding, rope climbing, and heavy exercises, involve sustained muscle compression followed by sustained vasoconstriction, increasing peripheral vascular resistance and, as a result, an increase in diastolic and systolic blood pressure. Isometric exercise could be compared with Sharma (laborious exercise) which is essential to increase power, strength, and stamina at a young age but must be avoided in the conditions like Ajeerna (indigestion), Jwara (fever), Udakodara (abdominal disease), Vatarakta (gout), Krodha (anger), Dukha (grief), Bhaya (fear), etc.[10]

C. Anaerobic Exercises (Yoga)

The type of exercise involves fast, high-intensity exercises that don’t make one’s body use oxygen like it does for cardiac activities like running, biking, walking, etc. Anaerobic activities break down glucose that’s already present in muscles for a form of energy. Yoga is a vast method of systematic acceleration of human physiological action to control over body and mind. Anaerobic exercise can be described as a component of Yoga.

D. Exercise Physiotherapy

It is the systematic execution of pre-planned physical gestures, postures, or activities that assist patients in (1) reducing risk, (2) improving function, (3) remediating or preventing impairment, (4) optimizing overall health, and (5) improving fitness and well-being [11]. Through the use of exercise and technology, physiotherapists help people regain muscle strength, joint mobility, and joint position sense after an injury or when undergoing rehabilitation from conditions such as Parkinson’s disease and stroke [12].

E. Therapeutic Massage

Abhyanga (Massage) is an ancient health-care procedure, traced back to Ayurvedic literature, and has been utilized for therapeutic purposes since the dawn of civilization. Massage employs "TOUCH" to apply pressure to the skin, muscles, tendons, and ligaments in all parts of the body. Which provides body and mind with tactile perceptual delight. Massage's goal is to help the person feel better by:

1. Relieving tension 3. Calming nerves
2. Promoting blood flow 4. Loosening muscle

F. Modes of Therapeutic Massage [13]

1) Stroking 4) Friction 7) Hacking
2) Effleurage 5) Wringing 8) Clapping
3) Kneading 6) Picking up 9) Shaking & Vibration
1) Stroking - Stroking is conducted by hand or just by the fingers. It entails the application of a relaxed hand over the patient's skin in a rhythm with the pressure that induces relaxation.

2) Effleurage - Effleurage is a technique for gaining relaxation and lymph drainage, which involves propagating, and moving the hands with pressure and movement.

3) Kneading - Kneading implies pinching and releasing the component to be massaged in a controlled manner.

4) Friction - Friction is a kind of movement made with the thumb or finger that adds strength to the tissue from the surface to the deep.

5) Wringing - The wringing procedure elevates the tissue and twists it to increase the elongating action.

6) Picking up - Picking up entails pulling tissues from the vertebral bodies and then releasing them after holding down.

7) Hacking - Hacking comprises beating the skin with the side of the hand while utilizing an extended forearm.

8) Clapping - Clapping is a technique that involves striking the skin with cupped hands.

9) Shaking and Vibration - Shaking and vibration are two different terms for modest movements and oscillations.

10) V. ADVANTAGES OF THERAPEUTIC FULL BODY MASSAGE [14]

A. Eliminates Muscular Pain and Muscle Contraction

When an injury without bleeding causes contraction “pain-spasms-pain” the cycle decreases after the massage therapy. Massage fulfils the nutritional and oxygen deficit of tissue and prevents the build-up of certain metabolic and toxin wastes.

B. Eliminates Long-Lasting Pain of Injuries

When an injury without bleeding causes contraction “pain-spasms-pain” the cycle decreases after the massage therapy. Massage fulfils the nutritional and oxygen deficit of tissue and prevents the build-up of certain metabolic and toxin wastes.

C. Eliminates The Effect of Surgery

Massage could be enhanced lymph flow and reduced the extent of lymph and toxin, which eliminates pain and swelling.

D. Enhances Flexibility

It could lose and relax the tightness of muscle by breaking up the bond that could form on the ligaments and tendons around the joints.

E. Enhances Posture

It softens some tissue of the body to make postural improvements.

F. Better Immune System

Massage permits the body to give more energy and resources through healing and restoration.

G. Reduces Migraine and Headaches

The muscle tension and pain stimulus involving the brain and head are reduced due to massage.

H. Enhances Digestion

It stimulates the parasympathetic response that affects the digestive response and rest. It enhances the absorption of nutrients and enhances the reduction of enzymes & hormones.

VI. CONTRAINDICATION OF MASSAGE THERAPY [15]

| TABLE I: DISEASE WISE CONTRAINDICATION OF MASSAGE THERAPY |
|---|---|---|
| Covid-19 | When you have nausea, or you feel dizzy | Unattended Migraines Unattended tumour |
| Blood disorders | Recent injuries/fractures | Unattended Migraines Rheumatoid arthritis |
| Active cancer | When having bruises, wounds, rashes | Undiagnosed Migraines |
| Herpes | Under the influence of alcohol or drugs | Rheumatoid arthritis |
| Undiagnosed pain | Deep vein thrombosis | High blood pressure |

VII. AYURVEDIC CLASSIFICATIONS OF SEASONAL MASSAGE THERAPY [16]

| TABLE II: SEASON WISE ANALYSIS OF MASSAGE THERAPY |
|---|---|---|
| Rutu (Season) | Sharira balu (Body strength) | Dosh shthiti (Position of bio-element) | Vyayama prama (Exercise measurement) |
| Shushira (Winter) | Shrestha (Superior) | Kaphasanchaya (deposition of Kapha) | Ardhashakti (half the power) |
| Vasanta (Spring) | Madhyama (Middle) | Kaphaprakopa (deposition of Kapha) | less than ardhashakti |
| Grisma (Summer) | Heena (Inferior) | Vataprasara (spreading of Pitta) | less than ardhashakti |
| Varsha (Rainy) | Madhyama (Middle) | Vataprakopa (deposition of Vata) | less than ardhashakti |
| Sharad (Autumn) | Heena (Inferior) | Pittaprasara (spreading of Pitta) | less than ardhashakti |
| Hemanta (Early winter) | Shrestha (Superior) | Ardhashakti |

1) Vata: Subtle body mechanical air of living beings
2) Pitta: Subtle body metabolic chemicals of living beings
3) Kapha: Subtle body fluids to maintain homeostasis (Dosha: Vata, Pitta, and Kapha are called three doshas as per Ayurveda classics)

Season wise analysis of massage therapy

Heavy massage can be prescribed in the winter season.

| TABLE III: SEASON WISE POTENCY OF THE MASSAGE |
|---|---|---|
| Season | Heart rate | Exercise |
| Jan-Mar | 120-140 | Heavy & moderate |
| Mar-May | 120-140 | Heavy & moderate |
| May-Jul | <120 | Light |
| Jul-Sep | <120 | Light |
| Sep-Nov | <120 | Light |
| Nov-Jan | 120-140 | Heavy & moderate |

VIII. DISCUSSION

A. Analysis of Benefits of Vyayama (Exercise)

According to Ayurvedic texts, langhana (fasting) is a way through which the body is lightened owing to Sharira laghuta.
(lightness of body & mind) which is brought by sanchita medokshaya (loosening of deposited adipose tissue). Jada bhava (inactiveness of the body) does not influence Sharira (body) or Manas (mind). If a person lives a sedentary lifestyle without getting adequate exercise, this behaviour leads to Medodhatu sanchaya (deposition of adipose tissues), and he will develop Medojanyaa vikara (disease related to lipids). Exercise has little effect on dhatu samayavastha (balanced seven bio-elements); instead, it eliminates Medodhatu (adipose tissues) that have accumulated excessively.

Due to kshaya of sanchitamedo dhatu (loss of deposited adipose tissue), all parts of the body become distinct and firm. Movements of the body parts lead to the increased and adequate blood supply to muscular tissue hence becoming healthy and strong. Blood circulation to skeletal muscles improves more in severe exercises. Udavartana (dry herbal powder massage) is prescribed in Ayurvedic classics to destroy the fat beneath the skin.

**B. Analysis of Indication and Contraindications of Vyayama**

If we consider doshik (bio-elements) variation exercise is mainly indicated in kaphaja vikara. But balyawastha (childhood) is kaphaja Kala (predominant period of bio-element: Kapha) where restricted exercises are indicated due to aparipakwata in dhatu (immaturity of bio-elements), asampurna of Bala (incomplete strength) because the child may not able to tolerate heavy exercise.

Exercise is contraindicated in old age people because it is the period of Vata dosha predominance. So that people may suffer from Vata vitiated vikara after exercise.

The people suffering from pitta janya vikara like digestive disorders or acid peptic diseases exercises are contraindicated to them.

**C. Analysis of Duration of Vyayama**

Exercise must be done in ardhashaktipramana (half of the total strength) of individuals. Some of the subjective matters that can be observed to advice anyone to stop exercise are sweat on the forehead and armpits, dryness in the mouth, tiredness, and fast and forced breath in the opened mouth. If one person shows these features, he should be asked to stop exercising immediately. Artha shakti pramana or duration varies from person to person.

It depends upon so many factors such as type of exercise, the strength of a person, season, Kala avastha (time factor), and can also be fixed by considering the objective parameters such as heart rate, blood pressure, etc., and thus the exact limitation and duration can be fixed. This varies from person to person and is finalized through observational study which is different in different geographical distributions.

**D. Exercises as per Ritu (Season)**

A person with a strong body built who consumes snigdhabhojana (unctuous diet) regularly should do regular exercise up to his ardhashakti level because he will tolerate it because of his energy. In Hemanta (early winter), Shishir (winter), and Basanta (spring) season body strength will be at its optimal level thus a person can tolerate a higher degree of Vyayama (exercise). It can be expressed that in srstha (higher energy) and madhyamabala (middle energy) Purusha can perform exercise purna balapramana (complete body capacity). But in other seasons like visarga Kala (summer, rainy & autumn) season one should perform the exercise as per his body’s permissible capacity i.e., he may reach up to Artha Shakti pramana (half the power).

**IX. Analysis of Limitations of Vyayama**

If any individual will do excessive exercise for a long duration, certainly he will be suffering from different kinds of diseases due to over fatigue. Ayurvedic classics have described Kasa (cough), Swasa (asthma), Chhardi (vomiting), and Gosha (emaciation) as complications of Vyayama (exercise).

**X. Pacify Nervous Irritation**

Abhyanga (therapeutic massage) plays a great role in pacifying and soothing the entire nervous system. The more regularly you do it, the stronger the effect will be. One can observe its sense of peace and tranquility, even the physical and psychological stress decreases in its regular practice. Abhyanga can help in maintaining more purity in the body and decrease nerve irritation.

**XI. Increase Levels of Endurance**

A great benefit of regular self-massage with herbal oil is increased endurance and stamina throughout the day. The result of massage therapy is, that increases metabolism, helps in nourishment, and maintains skin and muscle tone. It also tunes the functioning of internal organs and enhances the body’s ability to clean and eliminate toxins.

**XII. Improves Sound Sleep at Night**

Intermittent night awakening due to irritability of the brain could be reduced by practicing Ayurvedic Abhyanga therapy before going to bed. It provides a sound sleep at night.

**XIII. Detoxification Action of Abhyanga**

Performing Abhyanga with warm oil daily is a great way to detoxify and loosen toxins from the soft tissues in the body. If we take advantage of this benefit and follow it up with daily exercise, then Abhyanga can support weight management and complements a daily workout by toning the muscles and getting blood circulation.

**XIV. Physiotherapeutic Exercise**

Physiotherapy exercises always emphasize the restoration of physical activities and maintenance of strength, endurance, stability, mobility, and flexibility by employing manual techniques or the use of instruments as per the decision of the physiotherapist concerning the condition of the patient. The aim is to recover an injured patient to a full functioning pain-free state. Here, there is no need for any massage oil or drugs to perform exercises, only exercise techniques are enough to treat the patient.
XV. THE COMBINED ACTION OF PHYSIOTHERAPY AND PANCHAKARMA

Panchakarma is the method of five types of biopurification where oleation massage therapy and sudation are the pre-operative work of Panchakarma. This treatment is aimed at treating the diseases from their root, however, as per doshik predominance the treatment method, drug combination, and treatment principle change. Physiotherapy exercises are the techniques used by the physiotherapist either in a manual way or through instruments to strengthen the muscle with stimulation of the nerve. It is observed that when Panchakarma therapy was administered along with physiotherapy in Vata vitiated conditions like hemiplegia, paraplegia, frozen shoulder, disc-prolapse, spondyloysis, etc. the results are encouraging with the small duration of treatment.

XVI. CONCLUSION

Physiotherapy and Panchakarma have the objective to prevent and cure multiple ailments. Everyone should engage in regular exercise with the guidance of a physician, taking into consideration of all relevant components. Those who exercise daily will undoubtedly get several benefits. The Panchakarma technique, followed by massage therapy and sudation, is the most effective and proven method for treating ailments at their underlying cause, as recommended by the Ayurvedic classics. Along with Panchakarma, physiotherapy has been recommended for certain patients. Consequently, we discovered that we obtained the desired results in a short period. Patient satisfaction was much significantly higher in patients who received physiotherapy in addition to Ayurvedic treatment.

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