

Development and validation of Integrative therapy module for sports rehabilitation

Dr. Suchitra Patil¹ Dr. Amit Singh² & Dr. R. Nagarathna³

1. Associate Professor, Department of Yoga and life science, S-VYASA University.
2. Professor, S-VYASA University, Prashanthi Kutiram, Bangalore Karnataka, India.
3. Chief medical Director, Swami Vivekananda Yoga Anushandhana Samsthana, Bangalore, India.

Email: suchitra@svyasa.edu.in

Abstract

Background: Studies have proven that Ayurveda, yoga, Naturopathy therapies improves strength, range of motion, and flexibility after sports injury and also resulted in good improvement in physical and psychological rehabilitation of sports persons

Objective: To develop and validate the integrative therapy module involving Ayurveda, Yoga and Naturopathy for sports rehabilitation.

Methods: The integrated therapy module consisting Ayurveda therapies like Abhyanga, Sweda, internal medication; Naturopathy therapies like hydro therapy, mud therapy, IAYT module consisting- Loosening exercises, Asanas, Pranayama, Meditation was developed based on earlier research available. The validation was done by 20 experts of Ayurveda, yoga, naturopathy each. Data was analysed using the methods of Lawshe's formula: $CVR = (N_e - N/2) / N/2$.

Results: 40 integrated module practices were selected for validation, 37 practices had a CVR score of ≥ 0.7 indicating high score validity.

Conclusion

The integrated therapy module of yoga, naturopathy and Ayurveda has been validated for sports rehabilitation.

Key words: Yoga, Ayurveda, Naturopathy, sports rehabilitation

Introduction

Major joint and ligament dysfunction globally is frequently caused by sports-related injuries. Given how competitive and profitable the sports business is for athletes,

There has recently been a rise in sports-related injuries in addition to players' intense physical and emotional commitment. (1-3) Sports-related injuries have become more physically and

psychologically taxing as a result. There is ongoing pressure on wounded athletes to get back to their games as soon as possible in contemporary competitive sports. As such, the recovery process following sports injuries calls for greater attention than standard therapy. Due to the physical and psychological demands of competing at the highest level of sport, athletes and damaged tissues should get treatment using a highly organised sports-specific approach.

Any sport can have acute or overuse injuries, which can arise from a variety of sources.[4] Fractures, muscles, and ligaments can all be affected by sports-related injuries. damage to the musculoskeletal make about 80% of all sports-related injuries and are the most prevalent kind.[5,6] The most prevalent type of injury among athletes is a joint injury, particularly one to the knee. Depending on the cause of damage, the elbow, hip, and back can potentially sustain injuries in addition to the knee.

According to Kujala et al., these injuries require both surgery and nonoperative care, as well as a protracted recovery time. [7] Yoga and physical therapy can help to improve musculoskeletal flexibility, stability, muscular strength, and balance. These exercises help wounded athletes recover, which raises awareness of the benefits of therapeutic yoga and physical and psychological I level. He added that when yoga and physiotherapy are used in conjunction with each other for recovery, the biological and psychological aspects that have a favourable impact on the biopsychological results that is noteworthy. Still, both Whiting[9] and Ravi[10] have shown positive results from including yoga into their recovery regimens.

The Vata dosha is vitiated by excessive activity, including sports, according to Ayurvedic literature, and this is what causes the majority of physical suffering. One type of traumatic diathesis that may occur from sports injuries is the induction of Vata dosha. Which causes discomfort where it is experienced. To prevent irreversible harm to a bodily component, sports injuries need to be treated with extra caution. Greater advantages from actively pursuing the activity are received by athletes using Ayurvedic therapy methods. Sportspeople frequently suffer from the following

injuries when participating in sports. The notion of Marma was restricted to military science in ancient literature such as the Vedas and Ayurvedic classics. Marma points were primarily seen as lethal, meaning that damage to them resulted in debility or even death as they are the seat of Prana (vital energy). Given that Prana affects a person's physical, mental, emotional, and spiritual aspects, it is reasonable to conclude that Marma represents the key nodes of the psycho-neuro-endocrine-immune pathways that may be altered to control a person's bodily, mental, and spiritual activities. [11]

In the modern era, Marma chikitsa, a therapy used by a small number of practitioners, has emerged as a new dimension in Ayurvedic nonpharmacological treatment. Marma chikitsa involves directly stimulating these Marma points through the application of heat, pressure, vibrating tendons, pinching, or application of hot or cold pastes, oils, and ointments on Marma depending on the type of Marma.

Hydro therapies essentially include mechanically stimulating the body with a range of pressures, temperatures, and the advantageous effects of buoyancy and water resistance. The body's reactions to warmth, cooling, and local mechanical stimulation (such as showers and hydromassage) as well as the body's reaction to submersion in water because of the water's soothing and resistive properties are the most significant impacts of hydrotherapy. In general, the objectives of the many hydrotherapy techniques may be summed up as aiming to improve coordination and mobility, lessen chronic pain and inflammation, and treat muscular tension problems [12–16].

The benefits of mud treatment include bodily cooling. It eventually flushes out the

body by diluting, absorbing, and expelling poisonous chemicals. It is beneficial in constipation, tension headaches, high blood pressure, skin conditions, etc. can all benefit from the usage of mud. For headaches and excessive blood pressure, mud packs are also placed to the forehead. In order to relieve his constipation, The research comprised 23 individuals with symptoms that persisted for more than three months and who were diagnosed with knee osteoarthritis based on the American College of Rheumatology's diagnosis criteria. Twenty-three patients who met the criteria set out by the American College of Rheumatology (ACR) for knee osteoarthritis were enrolled in the trial and were given bilateral mud treatment. According to Sen C. et al. (2010), the study demonstrated that Mud-pack therapy is a noninvasive, complication-free, and reasonably priced alternative technique for the conservative treatment of knee osteoarthritis.[17]

Methodology

Development: Based on scriptures and available literature Integrative therapy module for sports rehabilitation was developed. Which consisted 4 Ayurveda, 3 Naturopathy and 30 Yoga rehabilitation practices .

Validation: 60 specialists that meet the requirements made up the panel that designed the integrated module, and they will be gathered to assess its content validity. Experts with clinical backgrounds (up to ten years) in naturopathy, yoga

therapy, and Ayurveda will also be deemed qualified. It will be possible to create a personalised protocol with procedures backed up by research findings and classic literature. For the purpose of assessing the content validity, a panel of sixty experts who meet the aforementioned criteria will be constituted. Yoga specialists will also include professionals in Ayurveda, Naturopathy, and Yoga treatment with up to ten years of clinical expertise. They should furthermore be utilising the techniques that will be incorporated throughout the module.

A panel of experts with clinical experience and at least five years of patient handling experience will be requested to comment on the inclusion of items for validation in order to determine the content validity ratio (CVR). The entire module will then be given to these experts. The suggested module's practices will be evaluated by these specialists using the following three-point rating system.

- a. Essential (1): extremely crucial for sports rehabilitation
- b. Helpful but not necessary (2): Excellent for enhancing overall health, but not necessary for sports rehabilitation
- c. Not necessary (3): Not required for sports rehabilitation

Information on the specialists:

The twenty Ayurvedic specialists hail from Sushrutha Ayurveda College, located in Prashanthi Kutira, Jigani, Karnataka. The SVYASA at Prashanthi Kutira, Jigani Karnataka is home to 20 professionals in yoga and naturopathy.

Experts Qualification	No of experts	No of years of experience
BAMS, MD(ayu)	17	6years
BAMS,MD(yoga)	7	7 years
BNYS	5	5 years
BNYS,MD(yoga)	6	5years
BNYS,MD(naturopathy)	5	5years

Results

Sl no	Specific Practice	Ne	N	N/2	Ne-N/2	CVR
1	Abhyanga	18	20	10	8	0.8
2	Sweda	18	20	10	8	0.8
3	Balarishta	17	20	10	7	0.7
4	Shilajatu and Swarna Bhasma	13	20	10	3	0.3
6	Acupressure POINTS :	14	20	10	4	0.4
7	Hydrotherapy	16	20	10	6	0.6
8	Cryotherapy	17	20	10	7	0.7
9	Finger strengthening exercise	19	20	10	9	0.9
10	Wrist rotation,bending	19	20	10	9	0.9
11	Elbow strengthening exercise	19	20	10	9	0.9
12	Shoulder rotation.movement	20	20	10	10	1
13	Toe bending	20	20	10	10	1
14	Ankle bending	18	20	10	8	0.8
15	Knee rotation	18	20	10	8	0.8
16	Hip rotation	18	20	10	8	0.8
17	Surya namaskara - 3 rounds 05 Min	20	20	10	10	1
18	Asana: Tadasana - 2Round	13	20	10	3	0.3
19	Ardha kati chakrasana	18	20	10	8	0.8
20	Ashwasanchalanasana	18	20	10	8	0.8
21	Adhomukha Shwanasana	18	20	10	8	0.8
22	Parivritta trikonasana	17	20	10	7	0.7
23	Veerasana	17	20	10	7	0.7
24	Janu shirshasana	18	20	10	8	0.8
25	Balasana	18	20	10	8	0.8
26	Pashchimottasana	18	20	10	8	0.8
27	Supta baddha konasana	17	20	10	7	0.7
28	Pawan-Muktasana – 3Round	17	20	10	7	0.7
29	Bhujangasana	18	20	10	8	0.8
30	Makarasana	19	20	10	9	0.9
31	Shavasana -1 round	19	20	10	9	0.9
32	Pranayama: (each 3 minutes) Nadi shuddhi Pranayama	19	20	10	9	0.9
33	Ujjayi Pranayama	20	20	10	10	1
34	Bhramari Pranayama 12 Min	19	20	10	9	0.9
35	DRT	19	20	10	9	0.9
36	MSRT	19	20	10	9	0.9
37	PET	18	20	10	8	0.8

Discussion

An integrated treatment module including yoga, naturopathy, and Ayurvedic therapies

for sports rehabilitation has been developed; its validity and reliability have been documented in this study. For

validation, thirty-two integrated module practices items were chosen. Sixty specialists (20 representing the fields of yoga, naturopathy, and Ayurveda) verified the program. High score content validity was indicated by thirty four practices with a CVR score of ≥ 0.4 .

Strength, balance, and range of motion are all enhanced by yoga [18], and these qualities are crucial for sports rehabilitation. Through the practice of yoga poses that focus on certain joints and muscle groups, athletes can progressively expand their range of motion. Therefore, athletes with joint-related ailments or aching muscles benefit most from certain positions. Yoga entails maintaining a variety of positions that call for the simultaneous use of several muscle groups. Postures assist athletes restore physical stability following injuries by strengthening muscles and enhancing balance.

During sports rehabilitation, pain is a frequent problem. Physical injury-related pain is primarily accompanied by chronic deep muscular tension that negatively impacts the microcirculation in the muscles and the viscera below. Poor posture, inactivity, and discomfort are all made worse by a sedentary lifestyle. [19] Athletes can better control their perception of pain and lessen its severity by practicing yoga or meditation, which promote attention and relaxation. This is when breathing exercises, meditation, and relaxation poses come in handy. A recent randomized controlled study also found that yoga

therapies enhanced psychological well-being and decreased pain.

It has been demonstrated that cryotherapy, which involves applying cold to the skin around injured soft tissues, reduces pain by lessening pressure on pain receptors and cell necrosis. It also reduces swelling by lowering blood pressure and temperature through vasoconstriction, which lessens cellulite permeability, cellular diffusion, neutrophil migration, and nerve signal conduction and transmission [20]. Applying cold compresses to the knee joint has been shown to widen blood vessels, improve blood flow, trigger the release of endorphins and encephalins, and lessen pain by preventing the transfer of pain stimuli. These effects have been linked to the relief of pain, erythema, oedema, and localised inflammatory response

The purpose of Abhyanga (massage) is to let the body to undergo tremendous strain and alleviate tiredness. Acharya Charaka describes this after Vyayama (exercises). Massage is seen as beneficial by contemporary medicine as well. Discharging inflammatory exudates from injuries in their early stages may be beneficial, . In order to aid with haematoma reabsorption and to promote blood flow in the afflicted areas, connective tissue massage is helpful in the therapy of soft tissue injuries. In order to prevent the spread of lactate, which causes delayed onset muscle soreness (DOMS), a mild massage is helpful. [21.22]

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