ISSN 2456-3110
Vol 6 · Issue 4
July-Aug 2021

Journal of Ayurveda and Integrated Medical Sciences

www.jaims.in

JAIMS

An International Journal for Researches in Ayurveda and Allied Sciences

Maharshi Charaka
Ayurveda

Indexed

Journal of
Ayurveda and Integrated Medical Sciences
ISSN 2456-3110
ORIGINAL ARTICLE July-Aug 2021

To develop and validate an Integrated Yoga Module for Basketball Players

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ABSTRACT

Basketball sport required high-level of fitness-related components, heart rate, blood lactate, aerobic capacity, anaerobic power and psychological demands from an athlete. From scientific evidence it has been observed that yoga helps in develop the entire psycho physiological component without giving physical stress to the body if it is practiced in proper manner. However, a validated Yoga module for basketball player is unavailable. The IYM for basketball players is prepared after doing detailed and systematic review of classical and contemporary yogic texts and earlier research evidence. The content validity of IYM for basketball players was presented to SMEs and evaluated by an experienced panel comprised of 30 yoga experts who satisfied the inclusion criteria. Data analysis exhibited that out of 85 yogic practices, 45 yogic practices showed substantial content validity. According to lawshe's method, 0.33 is the critical value of CVR (minimum CVR value) required for validation with 30 SMEs. The current study proposes that the IYM for Basketball players is valid with good content validity. However, future research studies must determine the efficacy and feasibility of the developed module.

Key words: *Injury Prevention, Overtraining, Performance, Yoga for Athletes, Yogic Training*

INTRODUCTION

Basketball is considered an intermittent high-intensity court-based and multifaceted team sport (Stojanović et al., 2018; Castagna et al., 2010). As it is a team sport, largely based on the technical, tactical, motor, physiological (anaerobic metabolism) (Castagna et al., 2009; Hoffman et al., 1999), a high degree of physical fitness (agility, speed, strength of upper body and lower body, maximal aerobic power, aerobic endurance and muscular power) (Noyes et al., 2012; Ben Abdelkrim et al., 2010), mental preparation of the team and somatic build (Gryko et al., 2019).

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Submission Date: 03/07/2021 Accepted Date: 11/08/2021

Access this article online

Quick Response Code

Website: www.jaims.in

DOI: 10.21760/jaims.6.4.9

In a basketball game, around 4500-5000m are covered during a 40 min game by each player with a heterogeneity of multidirectional movements at variable velocity and jumping and there are approximately 1000 activities performed by every player, consequential in change of movement in every 2 seconds, around 20% are sideward actions and forward-backward movements are above 40% (Ben Abdelkrim et al., 2007; McInnes et al., 1995). Both aerobic and anaerobic metabolic systems seem to be involved throughout a game to execute such movements (Alemdaroğlu, 2012; Narazaki et al., 2009).

In the game of basketball, the speed of players changing continuously, all the tactical actions such as defensive and offensive transitions (de Araujo et al., 2014) and technical movements like shooting, rebounding, lay-ups, jumping, fast-breaks, blocking, passing, and high-speed play, require energy from aerobic and anaerobic system (Pojskić et al, 2015; de Araujo et al., 2014). Anaerobic energy system contributes approximately 80% of the energy during match-play (Yilmaz, 2014). Basketball sport mostly depends on anaerobic metabolism and (adenosine triphosphate-phosphocreatine) ATP-PCr as its primary source. However, the aerobic capacity plays a crucial in the process of recovery than directly affect the performance of athletes (Hoffman et al., 1999; Hoffman, 2003).

Petway et al. (2020) reported HR_{max} in the ranged from 187-198 BPM (Beats per minute) with a mean of 190 BPM in elite basketball athletes, 192 – 195 BPM with a mean of 194 BPM for youth basketball players and HR_{max} with mean of 199 BPM in youth match. Matthew & Delextrat (2009) studied, mean blood lactate concentration in basketball athletes in competition was a bit above 50% of maximal response (51.5-55.9%). Some studies found that basketball athletes at different position have different VO_{2max}. Every research has different value for VO_{2max} as there are so many factors – internal or external for the variance. A study recorded VO_{2max} was 65.2 mL/kg/min in athletes of American University (Tavino et al., 1995), 45.3±5.9 mL/kg/min in (Gocentas et al., 2004), and the data collected for VO_{2max} was 53.0±4.7 mL/kg/min in another (Caterisano et al., 1997). In collegiate basketball players, mean value of VO_2 (oxygen consumption) were 36.9±2.6 mL/kg/min (Narazaki et al., 2009).

Challenges

Training for longer period of time with inadequate recovery time for physiological and psychological results in exhaustion and declined performance capacity which is usually known as overtraining (Kellmann, 2010; Schober, 2018). The outcome of overtraining can be seen as staleness, overtraining syndrome or burnout syndrome (Lehmann et al., 1997; Halson, 2003) which results in reduction in athletes' performance (5% or more) for a longer period of time (Weinberg & Gould, 2011). The risk of inflammation and chronic muscle damage happens since reactive oxygen species are being produce by these responses, which contribute to muscle fatigue and oxidative stress (Bessa et al., 2016). Raised cortisol levels are considerably associated with depressed mood in the course of overtraining periods (O'Connor et al., 1989).

The requirement of high-intensity motion and physiological stress on the basketball players throughout the game may develop as fatigues which lead to declination in their performance output or injury. Therefore, fatigue can hinder the performance of athletes (Edwards et al., 2018; Taylor et al., 2012), deteriorates skills and coordination of a player (Uygur et al., 2010). Muscle fatigue influence the shooting precision and coordination, negatively. As fatigue increased the height of jump shot at the basket decreased and impaired the kinetic function (Millet et al., 2004; Erčulj & Supej, 2009).

Physically and physiologically, athletes may experience muscle soreness, muscle fatigue, reduction in appetite, weight loss, immune system deficiency, imbalance between parasympathetic and sympathetic nervous system, depletion in the storage of energy, tissue injury, excessive releasement of cytokine, differential catecholamine sensitivity, resting heart rate increases, muscle damage, inflammation, increases in cortisol level and testosterone level, and reduction in maximal power output performance (Purvis et al., 2010; Schober, 2018).

Researcher found that the stressors that an athlete encounter is of broad range like competitive stressors, organizational stressors and personal stressors. Competitive stresses involve performance pressure, preparation, poor performance in game, injuries, expectation, competitiveness, and self-presentation (McCormick et al., 2018). Carr (2003) asserted that when the athlete performs poorly then he is unable to achieve the goals that he has set, which may lead to anxiety and frustration. Organizational stresses involve teammates and leadership problems, organizational and environmental issues, team and cultural issues, personal and performance issues. Personal stressors involve family problems, work-life

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conflict, and the death of loved one (McCormick et al., 2018).

Due to high arousal level, athletes experience cognitive anxiety (negative self-talk, negative self-image, unable to focus, inattentiveness and athletic performance worries) (Khan et al., 2017), somatic anxiety (physical feedback, nervousness, muscle tension and high HR) (Khan et al., 2017; Weinberg & Gould, 2011), muscular tension and biochemical changes (result in uncontrolled tension) (Weinberg & Gould, 2011; Carr, 2013). Neural activity for longer period causes increase in brain adenosine concentration which is responsible to lower the desire to do exercise (Lovatt et al., 2012), as a result decrease in athletic performance (Schiphof-Godart et al., 2018). Rahayuni (2019) argued that social pressure, peer pressure, hope and expectation are psychological challenges projected towards the athlete by external factors of surrounding or environment. Consequently, it possibly affects the athlete negatively at cognitive, emotional, and behavioral level such as strain, stress, depression or inability to cope up with expectations of team.

Some research studies investigated that impaired balance is one of the risk elements of injury in the basketball and many other sports (Plisky et al., 2006; Han et al., 2015). Injuries such as sprains, and strains of muscle, ligament, and tendon, are because of poor balance (Brachman et al., 2017). Sprain is the most frequent kind of injury that occur (27.8%), 21.8% inflammatory conditions come after and then strain (21.8%) (Drakos et al., 2010). Overtraining, physical fatigue, high-speed collision (accident between athletes), and muscle imbalances, are physical factors that act as primary cause of sport injuries. Though, psychological factors like, stress level, personality traits, and disposing attitude recognized as psychological precursor to physical injury (Weinberg & Gould, 2011).

Yogic training

Yoga is a method of mind-body fitness which includes an amalgamation of muscular movement and mindful awareness of the breath, the self, and energy (Collins, 1998; Woodyard, 2011). It has been found that with other training method yoga can be a vital component of athletic training program (Broad, 2012; Iftekher et al., 2017). Yoga differs from other typical forms of exercise training as it requires multi-structural involvement that gives a difficult task to the body in various ways (Iftekher et al., 2017; Kaminoff and Matthews, 2007). The four major system of the human body which are locomotor system, cardiopulmonary system, nervous system, and endocrine system, positively influenced by yogic practices like asana and *Pranayama*. The combination of mind, body, and breath control creates a basis for the psycho physiological effects of yoga (Raub, 2002).

Many researchers study that enhancement of muscular endurance, hand-grip strength (Madanmohan et al., 1992), flexibility (Ray et al. 2001b;), balance (Polsgrove et al., 2016), maximum work output, VO_{2max} (Raju et al., 1997), forced vital capacity (Bhole et al., 1970), and decrease in body fat (Bera & Rajapurkar, 1993). Practicing yoga also enhances physiological variables of athletic performance in terms of anaerobic performance, aerobic performance, cardiovascular endurance (Ray et al., 2001a; Balasubramanian & Pansare, 1991; Bera & Rajapurkar, 1993), and lactate or anaerobic threshold (Ray et al., 2001b). Selvamurthy et al. (1998) concluded excessive stress-induced sympathetic over-activation become controlled due to equilibrium move towards parasympathodominace. It has seen the level of epinephrine, norepinephrine and stress reduced and due to this systolic blood pressure decreased by 3.7%.

Anaerobic or lactate threshold and submaximal exercise improved by the yogic practices in YG (yoga group) for ten months training as compared to controlled group (Ray et al., 2001b; Tyagi & Cohen, 2013). Raju et al. (1994) observed oxygen consumption per unit work reduced in YG and YG was able to reached higher work rate than NYG (non-yoga group) after Pranayama and yogic training. Therefore, development of work capacity even with exercise of high-intensity after yoga practice. The study Raju et al. (1994) and Ray et al. (2001a) also noticed that

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anaerobic/lactate threshold shifted near higher workload of exercise. This led to enhancement in aerobic capacity and the decreased lactate level caused low muscular fatigue and helped to reduced physical effort.

Psychological Aspect of *Yoga*

Chung et al. (2012) noticed improved quality of life (QOL) and declination in anxiety blood pressure in experimental group through meditation. Parasympathetic nervous system and gamma amino-butyric acid (GABA) both become stable with the support of yoga intervention and their function enhances the area of the brain that regulate response to threat (Streeter et al., 2012). Declination in norepinephrine output because of reduction in stimulation of locus coeruleus, result in relaxation, quiescence and decreased heart and respiratory rates. Decreased corticotrophin-releasing hormone and cortisol attributable to reduction in input of norepinephrine to paraventricular nucleus of hypothalamus. Both the meditation and yoga asanas help in better mood and physiological relaxation (Thirthalli et al., 2013). Brain GABA levels and parasympathetic nervous system improved significantly after practicing yoga as autonomic nervous system influenced by yoga. Yoga practices can be used as a treatment for depression and anxiety as these disorders occurred due to low GABA levels (Streeter et al., 2007; Streeter et al., 2012).

Yogic training declines stress and modifies the function of HPA (Hypothalamic Pituitary Axis) by affecting cortisol secretion (Streeter et al., 2012). It reduced the perceived stress by the cerebro-hypothalamic or cortico-limbic pathway through influencing the cortical areas that influence the neurotransmitter and hormonal release (Mahajan, 2004). Cognitive functions such as learning, vigilance, memory, concentration (Galantino et al., 2008), attention (Van Yperen, 2003), perceptual efficiency and reaction time improved by yogic practices (Stueck & Gloeckner, 2005). Yoga also enhances mood state (Khalsa et al., 2012) and emotional health (Gillen & Gillen, 2008).

Yoga for *Injuries*

No injuries are associated with integrating yoga program in the pre-season high-volume training (Brunelle et al. 2015). Thus, this indicated possibility to incorporate yoga in high-volume training. Regular yoga practice delayed the onset of muscle soreness, a form of muscle trauma at the connective tissue and cell (Ravi, 2016), the experience of pain by reducing activity of sympathetic nervous system, declination in stress markers (cortisol etc.) and inflammatory markers (interleukin-II, tumor necrosis factor, CRP etc.), increases strength, cardio respiratory capacity and flexibility circulation, decreases social isolation, strengthens networks that support physical activity, enhances awareness of physical and mental states and rise serotonin and melatonin levels (McCall, 2013; Wren et al., 2011).

Integrated Yoga therapy improves knee joint proprioception (Hasan et al., 2020), walking pain, tenderness and range of knee flexion as supplementary to conventional physiotherapy (Ebnezar et al., 2005). Reduction in muscular tension and associated nerves are soothed and tranquilizer by practicing asanas as it includes passive stretching (Gore, 2008). Yoga intervention elevates the mental fatigue threshold of an individual and may reduce the rate of injuries due to lack of balance (Hasan et al., 2020), improves landing mechanism, dynamic and semi-dynamic balance and lower extremity functions (Haidary et al., 2020).

Materials and Methods

Development of IYM

A purpose-built yoga module comprised of yoga practices supported by reviewing ancient yogic texts and scientific research studies. IYM was developed by considering the physical demands, physiological profile and psychological skills, all the psycho physiological challenges basketball players face on and off court, and match activity profile of basketball players, and with the aims of delivering an efficacious and feasible solution. The preliminary yoga module

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was comprised of 85 yoga practices. The process of the development of the IYM is given below (fig.1).

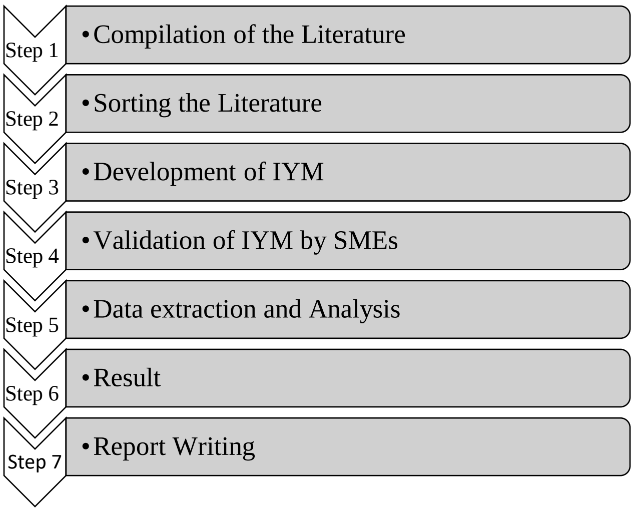

Figure 1: Process of IYM development

Inclusion and Exclusion criteria

Subject matter experts (SMEs) with clinical experience, viz. Doctor of Medicine degree in Yoga, Doctorates in Yoga with minimum 5 years' experience, or a Master's degree in yoga (MSc Yoga)/yoga therapist, with a minimum of 7 years' experience after post formal education. Doctors or Doctorates with less than 5 years of experience and Yoga Therapists with less than 7 years were excluded.

Validation of the IYM by experts

Validation process was executed by setting out an intensive group discussion on the online meeting platform due to the pandemic (COVID-19), by requesting 30 SMEs with clinical experience [who have either a doctorate or Doctor of Medicine degree in Yoga, with a minimum of 5 years' experience or a degree in yoga (MSc Yoga)/yoga therapist, with a minimum of 7 years' experience]. These experts were requested to validate the practices in the proposed module on a three-point scale as follows: i) not essential, ii) useful but not essential and iii) essential. Data were analyzed using Lawshe's method of CVR (Content Validity Ratio) after the validation. For calculating the CVR, the panel of experts was requested to share their opinion on the requirement of the comprised items.

Data extraction and Analysis

The content validity ratio was calculated by using Lawshe's Method (1975), if more than half of the experts indicate that a domain is "essential", then that domain has the minimum content validity. The mean CVR represents the overall content validity.

The data that was collected from the SMEs was then sorted to compute the numbers of experts deemed the item as 'essential' (N_e), to calculate the CVR of each item to check the validity, by applying Lawshe's Formula of Content Validity Ratio.

Lawshe's formula: $\boldsymbol{CVR} = \frac{N_e - \left(\frac{N}{2}\right)}{\frac{N}{2}}$

For the current study,

N = 30 (total number of yoga experts included in the study)

N_e = Number of experts agreeing for an item "essential"

$N/_2$ = 30 / 2 = 15

$N_{Critical}$ = 20 (Minimum number of experts required to agree an item "essential")

$CVR_{Critical}$ = 0.33

P value = Probability of success ($p \leq 0.05$)

Result

The constructed IYM for Basketball player contains total 85 yoga practices and it has been validated by 30 experts. The content validity ratio calculated for all 85 yogic practices by applying the Lawshe's method. According to lawshe's method, 0.33 is the critical value of CVR (minimum CVR value) required for validation with 30 SMEs. Therefore, to assess the content as "valid", the critical valve for CVR must be equal or above 0.33 (≥ 0.33) for all the mentioned yogic practices.

Therefore, data analysis exhibit that among 85 yogic practices, 40 yogic practices showed significant content validity ratio means 40 yogic practices attain CVR value above or equal the CVR (≥ 0.33), which indicates high content validity ($p \leq 0.05$). These practices are considered to be "essential" for basketball players (listed as in Table 1). Those yogic practices obtained CVR value below 0.33 (<0.33), denoting low content validity and these practices were used as complementary poses for important postures to align the body and mind (Table 2).

Table 1 indicates the list of all 'essential' Yogic Practices that fulfilled the minimum Lawshe's CVR value and demonstrated as 'Valid IYM for Basketball Players' approved by 30 Yoga Experts. All 45 yogic practices (Table 2) had CVR value below 0.33 (<0.33).

Table 1: Items with CVR value 0.33 and above (≥ 0.33)

SN	Item	N_e	CVR
1.	Jogging (Slow Jogging, Forward Jogging, Backward Jogging, Side Wise Jogging)	26	0.73
2.	Forward and Backward Bending	26	0.73
3.	Side Bending	22	0.46
4.	Twisting	26	0.73
5.	Greevasanchalana (Neck Movements)	20	0.33
6.	Scandasanchalan (Shoulder Movements)	24	0.6
7.	Katisanchalana (Waist Movements)	22	0.46
8.	Janusanchalana (Knee Movements)	25	0.67
9.	Padasanchalana (Ankle Movements)	25	0.67
10.	Hands in & out breathing	24	0.6
11.	Hands Stretch Breathing	24	0.6
12.	Ankle Stretch Breathing	28	0.86
13.	Tiger Breathing	24	0.6
14.	Straight leg Raise Breathing	22	0.46
15.	Suryanamaskar (19 Dynamic & 1 Slow)	26	0.73
16.	Vritta Janushirasana	22	0.46
17.	Trikonasan	24	0.6
18.	Parivritta Trikonasana	20	0.33
19.	Chakrasana	20	0.33
20.	Paschimottanasana	25	0.67
21.	Vakrasana	20	0.33
22.	Ushtrasana	21	0.4
23.	Gomukhasana	20	0.33
24.	Pawanamuktasana	23	0.53
25.	Veerabhadrasana	23	0.53
26.	Shalabhasana	20	0.33
27.	Setubandhasana	22	0.47
28.	Utthanpadasana	21	0.4
29.	Halasana	20	0.33
30.	Sarvangasana	22	0.47
31.	Shavasana	22	0.47
32.	Nadishuddhi Pranayama	25	0.67
33.	Bhastrika	23	0.53
34.	Bhramari	26	0.73
35.	IRT	24	0.6
36.	QRT	27	0.8
37.	DRT	28	0.87
38.	Cyclic meditation	25	0.67
39.	Kapalbhati	24	0.6
40.	Trataka	23	0.53

Table 2: Items with CVR value below 0.33 (< 0.33)

SN	Item	N_e	CVR
1.	Pawanmuktasana Kriya	19	0.27
2.	Dog Breathing	15	0

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3.	Rabbit Breathing	10	-0.33
4.	Shasankasana Breathing	15	0
5.	Adho Mukha Shvanasana	17	0.13
6.	Shulinasana	10	-0.33
7.	Malasana	17	0.13
8.	Natarajasana	12	-0.2
9.	Dandasana	16	0.07
10.	Gandirasana	17	0.13
11.	Konasana	17	0.13
12.	Tadasana	16	0.07
13.	Tuladharasana	19	0.27
14.	Vrikshasana	18	0.2
15.	Shahmrugasana	10	-0.33
16.	Markatasana	18	0.2
17.	Padahastasana	18	0.2
18.	Bhadrasana	16	0.07
19.	Ardha kati Chakrasana	17	0.13
20.	Ardha Matsyendrasana	18	0.2
21.	Marjariasana	10	-0.33
22.	Matsyasana	9	-0.4
23.	Shasankasana	15	0
24.	Hanumanasana	17	0.13
25.	Bhujangasana	18	0.2
26.	Dhanurasana	19	0.27
27.	Garudasana	17	0.13
28.	Naukasana	17	0.13
29.	Navasana	19	0.27
30.	Mayurasana	15	0
31.	Bakasana	16	0.07
32.	Koormasana	18	0.2
33.	Kukkutasana	16	0.07
34.	Matsyendrasana	17	0.13
35.	Utthana Koormasana	14	-0.07
36.	Makrasana	15	0
37.	Ujjayi	8	-0.47
38.	Shitali	15	0
39.	Sheetkari	11	-0.27
40.	Yoga Nidra	17	0.13
41.	Om meditation	18	0.2
42.	Jal Neti	17	0.13
43.	Sutra Neti	9	-0.4
44.	Vaman Dhauti	14	-0.07
45.	Nauli	10	-0.33

Discussion

This yoga module has been validated by 30 qualified experts who satisfied the study criteria. Among 85 yogic practices subjected to validation, 40 had a CVR score above or equal the CVR critical (≥0.33) and were taken in the final yoga module. Until now, earlier scientific studies have not focused on the validation of an IYM for basketball players that may be used as cross-training.

The study was conducted in two phases: 1) designing a yoga module for basketball players and 2) validation of the yoga module for basketball players from experts.

In the validation phase, 30 yoga experts who satisfied the study criteria are from Swami Vivekananda Yoga Anusandhana Samsthana (SVYASA), Bangalore and Lakulish Yoga University (LYU), Ahmedabad, participated and contributed in the present study by giving deeper insight with their experience and expertise.

For all 85 yogic practices, the CVR was calculates in the yoga module. Out of all practices, 40 yoga practices with CVR above or equal 0.33 (≥ 0.33) included in the validated IYM (table 1). Hence, excluding 45 yogic practices, the 40 yogic practices considered essential for yoga module for basketball players.

Shithilikarna Vyayama (loosening practice) develops stamina of the body and improves mobility of joints. *Sukshma Vyayama* is the only set of yogic practices include every body part such as joints, muscles and organs, and enhances endurance, improves lungs volume, flexibility of ligaments, and mobility of joints (Madankumar, 2018).

Asana position helps in strengthen ankles and feet, quad and musculature around the knees, hamstring, calves' muscles, and quadriceps, and also improves body balance. Inverted postures and sitting postures strengthen the muscles of abdomen, back and biceps, improves lungs efficiency, and enhance the spine flexibility. Other poses like supine and prone also helps in building the abdominal muscles, making the spine flexible, increases ROM of spine, lower limb muscles and back (Uma et al., 1989; Telles et al., 2014).

Pranayama increases endurance and strength of muscles of respiratory system by doing inhalation and exhalation regularly for longer duration (Raghuraj & Telles, 1997). It enhances the autonomic system to vagal tone (parasympathetic) dominance (Shashikiran et al., 2015; Pal, 2015) and positively influences respiratory (Beutler et al., 2016) and cardiovascular functions (Jain, 2016).

Surya Namaskar (sun salutation) is methods which stretches and pressurize several muscles consecutively and carrying out movement by numerous joints of the body and an individual experience many benefits in a short period of time (Sinha et al., 2004; Kirkwood et al., 2005). Campbell et al. (1994) asserted *Surya Namaskar* helped in developing strength and it is equivalent to resistance training as continuous contraction of many groups of muscle by it.

Trataka enhances the cognitive tasks performance in an individual (Talwadkar et al., 2014). Raghavendra and Ramamurthy (2014) examined improvement in vagal tone and reduction in breath rate and HR. They also observed low frequency component of HR variability and high frequency component is increased by practicing *Trataka*. *Kapalabhati* enhances cognitive and motor performance, attention and memory (Joshi & Telles, 2009; Telles et al., 2014; Gupta et al., 2019). It also helps in metabolic activation (Telles et al., 2015), sympathetic arousal (Raghuraj et al., 1998) and reduction in anxiety (Telles et al., 2019).

Meditation (*Dharana* and *Dhyana*) helps in improving creativity, enhancing energy, intelligence, decrease in insomnia, anxiety, psychosomatic diseases and enhancement of overall health (Parnabas et al., 2014). By doing meditation, glucocorticoids and oxidative stress reduced, and low reaction rate between hormones and stressors (Sudsuang et al., 1991; Jevning et al., 1978; MacLean et al., 1997).

Relaxation technique also facilitates in decreasing anxiety and stress. This assists in the improvement of depression, stress and anxiety. Relaxation techniques help the athlete by enhancing concentration, self-confidence, performance, decrease stress, blood pressure and stress (Parnabas & Mahamood, 2012; Pragman, 1998; Weinberg & Gould, 2011; Parnabas et al., 2014).

Strengths of the study

The yoga module comprised of manifold yogic practices such as *Sukshma-Vyayama, Shat-Kriya, Asanas, Pranayama, Dharana* and *Dhyana* and it is developed scientifically through evidence-based research and various classical and contemporary yogic texts. Hence, the nature of yoga module is integrative instead of focusing on any particular yoga limb.

Experts selected for the validation process were from different schools of yoga, some having been exposed to multiple schools of yoga, ensuring that the module was not confined to any one school of yoga. This kind of study is useful to generate awareness about yoga for specific-sport movements, athletes' health and mental benefits. For investigations of scientific sport studies, the results of this study would offer a significant base for directing future trials.

Limitations of the study

It's a first attempt to develop a validated yoga module for basketball players, and yogic practices, duration of practices the order has to be tested by a randomized control trial (RCT) to prove its efficacy. All the practices do not have research proven background. Further study to investigate the feasibility of the IYM is needed. Hence, once this protocol goes for RCT can become a curtain raiser for future.

Conclusion

IYM comprises 85 yogic practices for basketball players and it has been validated by 30 yoga experts. It showed that amidst the 85 yogic practices, 40 were found to be essential (CVR ≥0.33) and 45 were found to be not essential (CVR <0.33). The present IYM is a valid module for basketball players. However, further research is needed to investigate the efficacy and feasibility of the developed module.

Acknowledgement

Author acknowledge Lakulish Yoga University (LYU), Ahmedabad, for granting permission to carry out this work. The author thanks all the experts from LYU and Swami Vivekananda Yoga Anusandhana Samsthana (S-VYASA) for their value time, opinion and inputs to validate the module.

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How to cite this article: Kritika Rathod, Vijay Kumar PS, Sahana AU, Tresha Rathod. To develop and validate an Integrated Yoga Module for Basketball Players. J Ayurveda Integr Med Sci 2021;4:58-71. http://dx.doi.org/10.21760/jaims.6.4.9

Source of Support: Nil, **Conflict of Interest:** None declared.

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