Athlete Perspectives on 8-Weeks of Yoga Practice

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Abstract

Introduction: Over the past few decades yoga participation has been enjoyed by a wide range of individuals, including athletes looking for new and effective ways to improve performance. With little evidence to suggest the positive impact that yoga may have on athletic endeavors, such participation is met with varied success. **Methods:** For this qualitative inquiry 19 male college athletes (baseball and soccer players) participated in a weekly yoga program for 8 weeks which included a 60 minute class with both asanas and pranayama; and they were interviewed by researchers upon the completion of the 8 week program using semi-structured interview questions. **Results:** In an effort to identify best approaches this study looked at perceptions of athlete's (N=19) reflection in taking part in 8-weeks of yoga.

Findings from this inquiry suggest that overall, athletes saw yoga as being as beneficial for joint flexibility and range of motion, improved body awareness, improved ability to concentrate, sense of relaxation, and a sense of support from the coaching staff. Interestingly, soccer players (n=9) believed they were more energized while baseball pitchers (n=10) believed they gained a greater comradery with teammates. When considering reflection themes overall, athletes reported benefits in stress management and physical ability, however, they were less likely to report gains in athletic performance and social interactions. **Conclusions:** As the Yoga Sutra denotes how the practice of yoga enhances connections between mind, body and spirit, it would seem that the opportunities for the benefits in yoga in athletics is at best being underutilized. Practitioners wanting to more readily assist athletes may want to consider the demands of a specific sport and proactively assist athletes to integrate holistic gains to performance.

Keywords: yoga, sport, athlete, mind-body, performance reproductive health goals.

Introduction

The popularity of taking part in mind-body therapies in the United States has seen large growth over the past few decades (Wang, Li, Choudhury, & Gaylord, 2019). Even with the advent of new techniques and technologies used for fitness, such as Fitbit, energy food, breathable and waterproof fabric; yoga, an ancient practice discussed in the Bhagavad Gita,

has exploded in popularity. For instance, yoga studios, specialized classes, and specialized clothing proliferate, and it is glamorized by celebrities and athletes (Broad, 2013). Likely reasons for this expanding interest may be found with reported gains in the management of chronic diseases as well as the multitude of health benefits associated with yoga (Patwardhan & Lloyd, 2017). In the west, the type of yoga being used is raja yoga—the yoga that focuses on developing the mind and utilizes poses and movements to cultivate mind-body connection (Walters, 2003; Vivekananda, 1918).

Such benefits related to chronic disease include a reduction in blood pressure (Wolff, Sundquist, Lönn, & Midlöv, 2013), reduced impact of arthritis (Ghasemi, Golkar, & Marandi, 2013), reduced depression (Shapiro, Cook, Davydov, Ottaviani, Leuchter, & Abrams, 2007), improved management of multiple sclerosis (Hassanpour-Dehkordi & Jivad, 2014) and management of type II diabetes (McDermott et al., 2014). Benefits related to health include, improved body composition (Bera & Rajapurkar, 1993), stress management (Szabo, Nikhazy, Tihanyi, & Boros, 2016), improved reaction time (Begum et al., 2012), reduced muscle soreness (Boyle, Sayers, Jensen, Headley, & Manos, 2004) improved functional capacity (Akhtar, Yardi, & Akhtar, 2013), improved flexibility and strength (Lau, Yu, & Woo, 2015).

Additionally, it is suggested that athletes may enjoy improved core stability, increased flexibility, reduced muscle soreness, enhanced fitness, and reduced risk of injury (Denholm, 2017; Ryba & Kaltenborn, 2006). As such athletes from a variety of sports (Wold, 2016) such as basketball (Youngmisuk, 2018), football (Smith, 2014), surfing (Hontz, 2009), winter

sports (Wroth & Whittaker, 2011) and golf (Anderson, 2019) have adopted yoga into their training routine. While there is support to suggest a benefit of athletic performance with yoga (Polsgrove, Eggleston, & Lockyer 2016), actual applications of yoga to performance is lacking. Despite clear associations, athletes taking part in yoga may find that such activity is done as an alternative training to help with stress, improve flexibility in a relaxed setting.

Those who practice yoga, will find Patanjali's *Yoga Sutra* to be the perfect manual on how to practice, tune, and employ the instrument that we call the human body. Collated around 400 CE, Patanjali's *Yoga Sutra*, details a raja yoga that transcends the mere physical realm and provides benefits far beyond enhanced flexibility and improved posture. Most importantly, its central aim is to quiet the distractions of the wandering mind and outside world to truly connect mind and body as a fully functioning system (White, 2019). Simply stated, the modern application of yoga is, at best, being underutilized by focusing on its physical rewards while eschewing the greater mental rewards. While the benefits of yoga are bountiful, the application of this practice to athletics needs greater clarity. In particular, the intent of traditional yoga asana practice is for improved health; in contrast athletic pursuits require maximizing the potentiality of the body.

In an effort to begin discussion on best ways to offer yoga as way to enhance athletic performance, the aim of this study was to gain insights how athletes perceived the influence of yoga on athletic performance.

Methods

During a fall semester, male athletes (N=19) from a Division II university took part in a yoga study. Study had approval from the university review board (This study was approved by University of Southern Indiana Human Subjects Review Board on 09/07/2009). Individuals taking part in the study were free from injury, able to complete their regular athletic practice and had little to no experience with yoga. After being explained the risks and benefits of participation in the study, participants took part in 60-minute yoga sessions that met twice a week for 8 continuous weeks.

Members of two different sports teams—men's baseball and soccer—participated in the study. The baseball group consisted of pitchers (n=10) with an average age of 20.4 (+/- 1.1). The soccer group (n=9) consisted of members of the soccer team without regard to position played. Prior to the study, the coaching staff of each team agreed to allow athletes to readily include yoga in their regular sport-specific training. To accommodate the schedules of both teams, the research team scheduled separate yoga sessions for group 1 (baseball) and group 2 (soccer). For example, sessions for the baseball pitchers (group 1) were held on the field after team practice, while the soccer team (group 2) met in the morning before classes.

A 200-hour certified (Yoga Alliance) yoga instructor led all yoga sessions. The yoga instructor offered classes in a hatha-flow format due to its ease for beginners. Practiced at a slow pace, while completing a series of asanas (poses) related to targeted muscles of the hips and low back. Throughout this time period, as participants acclimated to the poses and format of class offerings, sessions progressed in level of difficulty. Such

progression consisted of more specific cueing, as well as, inclusion of inversion and balancing poses.

Upon the conclusion of the yoga training sessions, the researchers set an interview time with each subject. These meetings consisted of researcher-led discussion where researchers recorded subject responses to the post-session questionnaire. The research team targeted its questions to gain insights from the participants' reflections on taking part in 8-weeks of yoga and the potential impact of yoga on sport performance. Questions asked included a description of current physical training routine, currently injuries, previous yoga experience, advantages and disadvantages of taking part in a regular yoga practice, difficulties of regularly attending a yoga, potential ways yoga improves psychological and emotional well-being, ways in which yoga enhancing sport performance, potential ways yoga may enhancing concentration during competition, potential ways yoga increases body awareness, the positive and less positive experiences yoga. During this time the researcher offered no additional encouragement or follow-up response. The format of this interview process was based on the constructs of Fishbein and Ajzen's Theories of Reasoned Action and Planned Behavior (1969, 1975), where semi-structured questions are intended to prompt top of the head reflection of the yoga training experience.

Analysis of responses was done by two reviewers. First, the subject responses were identified by salient phrasings. Then the researchers tallied similar phrasing for each subject. For example, a subject reporting benefits in concentration and posture were given a score for each. Regularity of views was determined through the number individual responses in comparison the

group and reported as a percentage value and then ranked. Additionally, all the scored responses were grouped into common themes. Ranked values and thematic responses are discussed in the results.

Reflections from taking part in 8-weeks of yoga training were analyzed in two different ways. First, a rank ordering of the percentage of similar responses was completed for all subjects (combined) as well as disaggregated for each sport (soccer and baseball). These same responses were also used for second analysis by grouping of common responses into related themes. These responses are also presented for all athletes as well as for each sport.

With the reflection data collected, salient insights on taking part in 8-weeks of yoga training were identified. Note, each subject was given only one score for a remarkable reflection. For example, a single score for flexibility would be given for the athlete expressing an improvement in shoulder range of motion and improvement in low back flexibility. With a total of 18 salient observations identified, a response percentage was calculated for a combination of both sports, as well as, for each individual sport. A second approach used to interpret the athlete yoga reflections, consisted of organizing related responses in groups or thematic categories.

Results

Considering these data, the most commonly held beliefs and the least commonly held beliefs that athletes had about taking part in 8-weeks of yoga were identified. Specifically, the researchers focused on those views that had 50% or greater response by all athletes and a sport-specific response of 70% or higher (Figure 1). These ranges resulted in seven commonly held beliefs.

The most common belief by athletes was seen as improved flexibility and range of motion (95% combined, 100% soccer and 90% baseball). Improved body awareness was the second most reported benefit (84% combined, 78% soccer, and 90% baseball). Third most frequent response was a sense of support from the coaching staff (74% combined, 78% soccer, and 70% baseball). A sense of enhanced ability to relax was the fourth most common belief (69% combined, 78% soccer, and 60% baseball). An enhanced ability to concentrate and center the mind was the fifth most common observation (52% combined, 44% soccer, and 60% baseball). The sixth most common response was an enhanced comradery amongst teammates (46% combined, 11% soccer, and 80% baseball). An enhanced sense of being energized was the seventh most common belief about taking part in a yoga by these athletes (44% combined, 78% soccer, and 10% baseball).

Figure 1: Athlete's most common beliefs about yoga

In contrast, the least commonly held beliefs of the impact of yoga on athletic performance were seen as those scores that had less than 20% response by all athletes which resulted in five beliefs. The fifth least reported belief about taking part yoga was an enhanced injury prevention (16% combined, 22% soccer, 10% baseball). Improvements in posture were the fourth least common belief about yoga benefits (11% combined, 11% soccer, and 10% baseball). A sense of increased calmness in game play was the third least common belief (10% combined, 0% soccer, and 20% baseball). The second most reported observation was belief that others (friends, family, peers) may not see yoga a commonly accepted type of training (10% combined, 0% soccer, and 20% baseball). The least commonly held belief

about the benefit of taking part in yoga for athletic performance was a sense of enhanced self-efficacy (6% combine, 11% soccer, 0% baseball).

Figure 2: Athlete's least common beliefs about yoga

Interpretation of the athlete yoga reflections through theme analysis and organization into related responses revealed four thematic categories: I. Stress Management, II. Physical Impact, III. Athletic Performance, and IV. Social Interactions. Observations related to Stress Management included those factors that had influence on the cognitive domains associated with athletic performance. Reported factors that may influence cognitive process included reduction in anxiety, sense of calmness, enhanced control of breath, improved concentration, and centering thoughts and a greater sense of relaxation (39 combined, 19 soccer, and 20 baseball). Athlete observations related to the physical impact of yoga were simply those factors

related to the body. The changes associated with yoga in this theme included an increase in balance, increased flexibility and range of motion, improved coordination and efficacy of movement, improved posture, and an improved body awareness (45 combined, 23 soccer, and 22 baseball). Interestingly, athletes also reported a variety of factors related to social engagement. Observations related to this category included an enhanced support from the coaching staff, enhanced comradery with teammates, an improved self-efficacy and minimal negative acceptance from friends, peers, family on the practice of yoga for sport (24 combined, 15 soccer, and 19 baseball). In terms of an actual impact on sport performance, athletes reported a reduction in injury, improved recovery and reduced soreness, feeling more energized, and an overall improvement in game play (26 combined, 9 soccer, and 17 baseball).

Theme	Combine d	Soccer	Baseba ll
I. Stress Management	39	19	20
II. Physical Impact	45	23	22
III. Athletic Performance	24	15	9
IV. Social Interactions	26	9	17
TOTAL	134	66	68

Table 1: Thematic responses of athletes on beliefs about yoga

Discussion

At the start, the investigators hypothesized that yoga is not adopted effectively. This was noted by the inability of athletes to clearly articulate descriptions specifically how yoga may impact performance as well as a dearth of research related to this topic. Unsurprisingly, athletes struggled to make connections between stress management, physical ability, social interaction and athletic performance. This was seen with more common responses related to the practice of yoga alone and less common responses on athletic improvement.

When comparing these findings to past work, it is interesting to note that athletes did not report improvements such as enhanced fitness, recovery and injury prevention. Such differences might suggest a few notions. The first is that athletes may not necessarily gain the same benefits from taking place in yoga as tends to be purported in the literature. Also, different needs for yoga exist for different sports, for different reasons. Finally, previous studies typically targeted a general population and these findings have been applied to athletes.

Limitations

While the results of this study are informative, they are tempered by some limitations. This study has a small total sample size (N=19), and the sample size from each sport was also small. While completed at the same time, the athletes completed the yoga study during different seasons; baseball players participated in their off-season, and soccer players participated in the study during their season. The other key difference had to do with the grouping of athletes in each sport. The baseball players all played

the same position, pitcher, while soccer players coming from a variety of positions participated. On the one hand, limiting one half of the study to baseball pitchers made sense from a physical standpoint (all participants complete similar physical motions and have similar physical and mental stresses), but, as a team, the soccer players have different stresses. Finally, the survey response rate was not at 100%. In a small sample size study, a perfect response rate would have been ideal.

There were a few limitations in the implementation phase of the study. The instructor did not always take attendance or follow a consistent format, so there may have been variations between sessions, and not all sessions have attendance records. The athletes also completed sessions at different times of day. The researchers were trying to be respectful of the athletic training and preparation schedule, so they implemented the study in the least invasive manner: working within the framework of the seasons and at times that coaches designated as acceptable.

Application

It appears that a general ignorance about the practice of yoga is an issue for the athlete taking part in it. Hence, they may struggle to readily identify the multitude of benefits for athletic performance. To maximize such connections, it would appear that coaches and support staff should be informed of the potentialities of yoga through mind, body, spirit and how such enhancement could be applied to sport. In this way, sport programming may be offered more holistically as to provide richer opportunities to enhance benefits from yoga sessions, as well as, providing more opportunities for optimizing sport performance. It may also be helpful for the instructor to more

deeply consider the demands of sport on the athletes when developing a class sequence. Such factors could include physical demands, joints utilized, inter and intra communication and mood state. In such cases this may be helpful for the yoga practitioner to work more closely with the coaching staff, identify sport-specific features to proactively educate the athlete.

In unifying views of training that include yoga, the practitioner can be a guide in helping athletes make holistic connections. For example, the instructor working with basketball players may discuss how the benefits of a particular pose is related to athletic performance and why it is done. This could be done in chair pose, where the direction is given on visualizing the preparation of a jump shot with perfect alignment as they are squatting down with arms lifted holding a basketball. This discussion would also examine how yoga can help relax a stressed player in key game situations and quiet external distractions. In this way, athlete-yoga combinations are prompted, giving rise to more directed and to specific outcomes such as slowing breath to increase focus as to maximize performance.

Coaches and athletes are continually looking for ways to increase athletic performance. As of late, reports of athletes taking part in yoga to enhance performance are becoming more popular. While a wide range of studies have indicated that various health and physical benefits can be achieved through yoga, rarely are studies done on an athletic population. When considering the view of the athlete taking part in yoga, overall there appears to be a positive opportunity. There are, however, some difficulties in the athletes' understanding how to best transfer this type of training to athletic performance. By bettering understanding this need, practitioners

may adjust class events to more greatly meet athletic needs. Additionally, researchers interested in connections between athletics and yoga may want to more deeply explore this relationship. Future work may include having a structured progression of sessions for athletes compared to a different group that had input on connection to athletic performance.

Conclusion

When considering the reported athlete observations in terms of remarkable features and as related themes, a deeper understanding of the perceived impact of yoga emerges. An analysis through rank ordering of remarkable insights illustrated that, in general, athletes most commonly perceive that taking part in yoga resulted in gains in joint flexibility and range of motion, improved body awareness, improved ability to concentrate, sense of relaxation, and a sense of support from the coaching staff. Differences between sports for the most common beliefs about yoga were seen with the soccer players more frequently reporting a feeling of being more energized, and baseball pitchers regularly reporting an enhanced comradery with teammates. Similarly, from the least common beliefs about yoga data, athletes generally saw few gains in balance, posture, self-efficacy, injury prevention and recovery.

A thematic representation of athlete observations resulted in the identification of 4 categories. Observations related to stress management and physical ability tended be the most common reflections of taking part in yoga. Differences between thematic responses could be seen with the baseball pitchers tending to view improvements in social interactions as more closely related to taking part in yoga than athletic performance. In

contrast more soccer players reported gains in athletic performance over enhanced social interactions. Interestingly, both sports had roughly the same total number of responses.

As such, future directions for this line inquiry might be aimed at best ways offer instruction athletes in the yoga setting or ways to assess the impact of yoga on athletic performance. Attempting to investigate yoga instruction could include inquiry on the impact of different yoga programming or how to best connect yoga approaches to athletes and coaches. Attempting to assess the impact on yoga on athletic performance might include looking at game statistics or determining the relationship of yoga and sport specific traits, such as, speed, balance, and power.

Overall, these findings suggest that athletes tended to highly value participating in yoga training as a part of athletic preparation. In general, these athletes saw gains in physical ability and stress management but differed on social and athletic performance benefits. Such differences may be due to the nature of the sport, where baseball pitchers must perform on positive internal dialogue and soccer players rely on working as a team, and the physical demand of play soccer is greater than the pitcher pitching a given number of innings.

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Appendix

Figure 1: Athlete's most common beliefs about yoga

Figure 2: Athlete’s least common beliefs about yoga

Table 1: Thematic responses of athletes on beliefs about yoga

Theme	Combined	Soccer	Baseball
V. Stress Management	39	19	20
VI. Physical Impact	45	23	22
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TOTAL	134	66	68