

Original Article

**An appraisal of agility in athletes engaged in indigenous and Non-indigenous games of India**

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**Abstract**

Optimal performance requires a combination of technical and tactical abilities as well as a high degree of physical fitness. In the fast paced, shifting, and random competitive environment, agility becomes a critical performance quality allowing athletes to quickly respond to changing movement demands. Agility helps performance in activities that require change of direction quickly whilst keeping balance, strength, speed and body control. Agility is a crucial skill in the vast majority of sports but little is done directly to develop agility in athletes at different levels of participation. The rural population of India, comprising about 70 per cent of the country's total population possesses higher level of physical fitness, physiological and morphological status than the people residing in urban areas. Several different games like Kabaddi and Kho-kho are played in the country with their origin in ancient times. Playing such games may aid in the promotion of physical prowess and multilateral motor development. The sports of western origin became popular due to their distinguishing features, utility and having convinced their importance extensively. Indigenous games of India have been largely unstudied and it would appear timely pertinent to pursue research in a systematic manner. The purpose of this study was to evaluate the agility of athletes engaged in indigenous and non-indigenous sports of India to elucidate any differences in performance of the athletes. The study was confined to seventy eight athletes representing Kuvempu University in different sports disciplines during 2012-13 through purposive random sampling. The Illinois agility test, a fitness test designed to test one's sport agility was used in the present investigation. The participants completed the testing at several different venues where coaching camps for inter-University competitions were scheduled. Apart from descriptive statistic such as mean and standard deviation, 't' test for paired samples was employed for comparison of agility in athletes engaged in indigenous and non-indigenous sports. The results of this cross sectional study indicate that there is higher agility in sports persons representing indigenous games as compared to non indigenous games. A detailed discussion on findings is ensued and practical implications enlisted.

**Key Words:** indigenous sports, agility, Kabaddi, Kho-Kho, Physical Fitness.

**Introduction**

The performance of a sportsperson largely depends upon his or her physical fitness apart from other attributes. Not merely skills but also anatomical and physiological characteristic will contribute to the success of the player as well as of the team<sup>(1)</sup>. Optimal performance thus requires a combination of technical and tactical abilities as well as a high degree of physical fitness. In the fast paced, shifting, and random competitive environment, agility becomes a critical performance quality allowing athletes to quickly respond to changing movement demands.

The current paradigm of speed development is undergoing change in the sport science community, wherein a greater emphasis is being placed not just on acceleration, top speed and speed endurance training, but also on change of direction speed drills<sup>(2; 3; 4; 5; 6)</sup>. Agility helps performance in activities that require change of direction quickly whilst keeping balance, strength, speed and body control. Agility is not just about the speed with which an individual can change direction. But it is also defined by the grace and fluidity of movement. Agility is a crucial skill in the vast majority of sports but little is done directly to develop agility in athletes at different levels of participation. With focused and specific practice, all athletes are capable of improving agility.

**Defining agility**

At present, there is no consensus among the sports science community for a clear definition of agility. Agility has classically been defined as simply the ability to change direction rapidly<sup>(7; 8; 9)</sup>, but also the ability to change direction rapidly and accurately<sup>(10; 11)</sup>. In more recent publications, some authors have defined agility to include whole-body change of direction as well as rapid movement and direction change of limbs<sup>(12; & 13)</sup>.

Agility is the ability to change the body's position quickly and this requires along with speed itself a combination of different attributes such as good balance, co-ordination, reactions, muscular power, strength and endurance.

**Improving agility**

Speed and agility training can help bridge the gap between traditional strength workouts performed in the gym and more functional specific movements. This is sound justification for athletes and coaches to include some form of agility training in the comprehensive program. If used and trained correctly improved agility can benefit and enhance not only a high sports performance specific program but also any program whether the emphasis is general fitness, injury prevention, rehabilitation or even weight loss.

Specificity is the key to direct improvement, however with young and developing individuals it is important to focus on future goals as well. Long term development requires a wide spectrum of skills and components of fitness to be incorporated within a training program. Maintaining the athletes' interest is another challenge to any sports coaches. Speed and agility training puts much stress on the muscles and other soft tissues, the energy systems and just as importantly the neural system.

Training is a long-term process and loading and recovery can become boring. Planning variety into the athlete's training program has become crucial. Serious training regimes can be very demanding, time consuming with ever increasing volume and intensity. Such a high volume of work can be monotonous and boring. Such a situation needs to be avoided. This is possible if the coach is knowledgeable and has a large resource of activities to be used periodically. Research is expanding in the field of sports science and an important aspect is the investigation of novel games, techniques and methods of training.

**Indigenous games of India**

The rural population of India, comprising about 70 per cent of the country's total population possess higher level of physical fitness, physiological and morphological status than the people residing in urban areas, seems to be a pillar of strength in the Country's sports arena<sup>(14)</sup>.

Physical education and sports in India have held great importance throughout India's history for a number of reasons. Several different games are played in the country with their origin in ancient times. Often they are played during festivals for physical development and recreational entertainment. Playing such games may aid in the promotion of physical prowess and multilateral motor development.

**Kho-Kho:** Kho-Kho ranks as one of the most popular traditional sports in India. Like all Indian games, it is simple, inexpensive and enjoyable. It does, however, demands physical fitness including endurance, speed and agility. Dodging, feinting and bursts of controlled speed make this game exciting and fun. To catch by pursuit - to chase, rather than just run - is the capstone of Kho-Kho.

**Kabaddi:** Kabaddi is a team sport, which requires both skill and power, and combines the characteristics of wrestling and rugby. It was originally intended to develop self defence, in addition to responses to attack, and reflexes of counter attack by individuals, and by groups or teams. It is a rather simple and inexpensive game, and neither requires a massive playing area, nor any expensive equipment.

**Statement of the problem**

The progress in research made by the western countries in their sports is well established internationally. The sports of western origin became popular due to their distinguishing features, utility and having convinced their importance extensively. The details of such games were made known to the world and the world accorded its approval for having proved their usefulness. Indigenous games of India have been largely unstudied and it would appear timely to pursue research in a systematic manner. This initial research study examines the potential benefits of indigenous games, their distinctive features and importance.

**Objective of the study**

The purpose of this study was to evaluate the agility of athletes engaged in indigenous and non-indigenous sports of India to elucidate any differences in performance of the athletes.

**Methods****Selection of the Subjects**

The study was confined to seventy eight athletes representing Kuvempu University in different sports disciplines during 2012-13 through purposive random sampling. Necessary ethical approval was obtained from competent bodies for the inclusion of human subjects in the present investigation. The indigenous sports included Kho-Kho (N=12) and Kabaddi (N=12); and Non indigenous sports included Badminton (N=5), Handball (N=12), Hockey (N=16), Softball (N=15) and Volleyball (N=6).

**Selection of test items**

The Illinois agility test, a fitness test designed to test one's sport agility<sup>(15)</sup> was used in the present investigation. It is a simple test which is easy to administer and requires little equipment. We assessed the ability to turn in different directions and at different angles. The goal of the test was to complete a weaving running course in the shortest possible time. Standard testing procedures were followed for the assessment of agility<sup>(16)</sup>.

### Statistical Techniques

The present study included employment of descriptive statistic such as mean and standard deviation. Mean scores were compared by 't' test for paired samples on agility of athletes engaged in indigenous and non-indigenous sports.

### Results

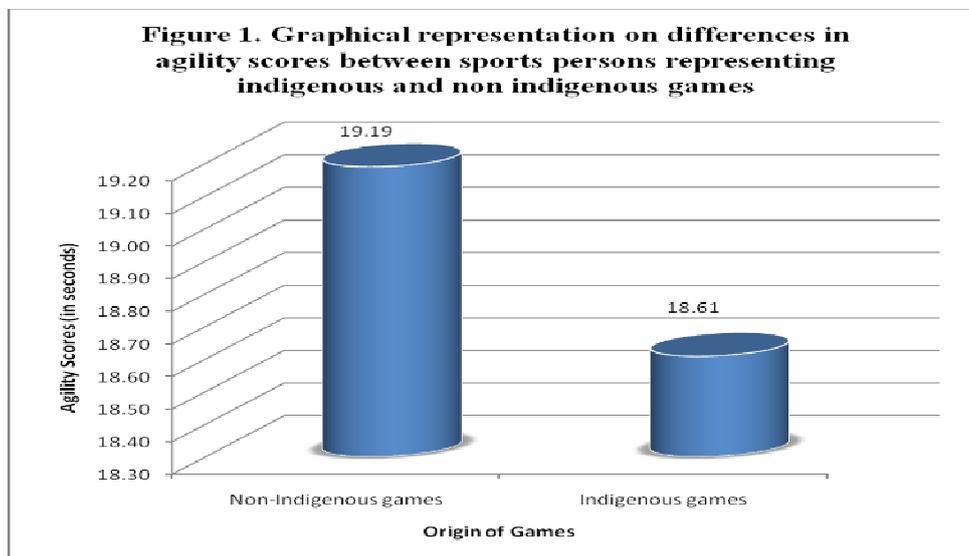
Mean and Standard Deviation of agility scores of subjects representing different games disciplines are provided in table 2.

**Table 2: Mean, Standard Deviation and 't' scores of agility performance for subjects engaged in indigenous and non indigenous games.**

Origin of games	Agility run Scores(in seconds)	't' score
Indigenous	18.61 ± 0.79	3.908*
Non Indigenous	19.96 ± 1.49	

\* The mean difference is significant at the .05 level.

The mean group scores on agility of sports persons engaged in indigenous versus non indigenous sports differed significantly in the present cross sectional investigation. In the present context, sports persons engaged in indigenous sports (18.61 ± 0.79) exhibited higher agility than those representing non indigenous sports (19.19 ± 1.34). The above results are graphically represented in figure 1.



### Discussion

Indigenous sports of India like Kabaddi and Kho-Kho have significant value for enhancing physical fitness capabilities however there is a paucity of research completed to date. This is one of the first scientific examinations of these sports seeking to profile athletes compared to non-indigenous sports in India. Interestingly we found that as a group, athletes from indigenous sports exhibited faster agility performance than athletes involved in more traditional western sports. While it cannot be stated that playing indigenous games produces more agile athletes. The results do suggest that performance in a structured agility test is well developed in these athletes and this may be a reflection of the movements involved in indigenous games. As such these games could be promoted to use in the training regimes and fitness activities for development of all athletes. The sports of the modern society such as Cricket and Football which are not indigenous to the tribal people of India have started finding greater acceptance amongst children<sup>(17)</sup>. In future, attempts have to be made to popularize indigenous sports of India and gain acceptance amongst children of non indigenous origin.

Multifarious activities have to be accomplished in order to develop certain physical fitness capabilities. This aspect has to be particularly kept in mind while formulating fitness program for sports persons belonging to different sports disciplines. Multi-discipline players are better than the single discipline players in power, strength and agility<sup>(18)</sup>. Hence, opportunity has to be created for athlete to involve in different sports and games during warm up and conditioning. The reason for higher agility in sports persons representing indigenous games as compared to non indigenous games may be attributed to multifarious and multi dimensional movements involved in indigenous sports of India selected for the study. However, the socio-economic, cultural and demographical background of the subjects was a limitation.

## Conclusion

The finding of the present study suggests that the agility in sports persons engaged in indigenous sports is higher than their non indigenous sports counterparts. Kho-Kho and Kabaddi or similar games can be included in conditioning programmes to improve agility. Inclusion as warm up games can be beneficial in breaking monotony and reducing resulting boredom. Indigenous games of India are cost effective, feasible and easy to play and may have excellent application in school physical education programmes. Indigenous games like Kho-Kho and Kabaddi can be an excellent means to develop agility.

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