Effect Of Suspension Training On Selected Skill Related Fitness Parameters Among Senior Athletes

Mr. Shaik. Hassan Jany, Ph.D Research Scholar, Alagappa University College of Physical Education, Alagappa University, Karaikudi, Tamilnadu, India

Dr. C. Vairavasundaram, Assistant Professor, Alagappa University College of Physical Education, Alagappa University, Karaikudi, Tamilnadu, India

Abstract:

Few studies have reported on the amount of suspension training changes in speed, agility and balance, and no studies of this nature have focused on senior athletes. This study was to investigate the effect of suspension training on selected skill related fitness parameters among senior athletes. Methods: Thirty subjects (mean age = 65 years, range 55–79 years) participating in the senior athletes were randomly selected for participation in this study. The selected 30 senior athletes were selected from Alagappa sports foundation only. All the selected subjects were healthy and physically fit. In this study Thirty (30) subjects, of senior athletes were randomly selected in suspension training and in control group, fifteen (15) in each group. The suspension training intervention consisted of 30-40 min/day, 5 days in a week till eight weeks in the Alagappa sports foundation only. Skill related fitness variables completed of the both groups at zero time and after eight weeks of suspension training intervention group in control group (no suspension training). In the present study Speed (10.22), Agility (15.10) and Balance (7.44) were changed significantly. Speed, Agility and Balance after regular practices suspension training is beneficial for senior athletes. Therefore suspension training covered in this study are beneficial for the senior athletes.

Keywords: Suspension Training, Skill Related Fitness, Senior Athletes

Introduction:

The average life expectancy is increasing globally. According to the World Health Organization’s (WHO) World Report on Ageing and Health, for the first time in history, most people are expected to live into their 60s. As the older population continues to grow, the concept of healthy aging has become a major focus in an attempt to ensure well-being and quality of life in the later years of life. The WHO defines healthy aging as the process of developing and maintaining the functional ability that enables well-being in older age (Jared M. Gollie 2020).

WHO World Report on Ageing and Health depicting the hypothetical trajectories of physical capacity in (1) senior athletes, (2) after injury, and (3) in the presence of physical inactivity or disease with aging. Given that senior athletes demonstrate superior functional
capabilities compared with their sedentary counterparts, this athletic subgroup of aging adults represents a truly unique example of those who are aging exceptionally well.

It has been argued that highly trained older athletes provide the most optimal model to understand the physiological processes of human aging. The premise for this argument is based on the absence of physical inactivity as a confounding factor in such individuals; thus, the observed longitudinal decrements in performance are solely the reflection of the aging process. Understanding the reasons behind the inevitable declines in athletic performance nonetheless are essential for effective intervention design to ensure safe and competitive sports participation in senior athletes.

In the year 2017 the National Senior Games Association will be celebrating 30 years of their first competition. In that initial event, which was held in St. Louis, Missouri, close to 2500 competitors older than the age of 50 participated in 15 sports. In the year 2015, the number of participants grew to almost 10,000 athletes (David A et al., 2017). With the well-discussed aging of the population more individuals older than the age of 65 will have the opportunity to participate in a variety of fitness activities and competitive sports.

Suspension training (ST) combines dynamic and static training by suspending specific parts of the body with a suspension sling to improve the stability and coordination of muscle groups. In recent years, ST has attracted more and more attention from scholars, coaches, and athletes for its positive effect on muscular strength, speed, agility and balance function. (S. Borreani et al., 2015) Increasingly, ST has also been applied in competitive sports training and injury prevention.

Nonetheless, while ST has been applied to a wide range of activities, studies of its application to senior athletes were not found in the currently published literature. The purpose of this study was to explore the effects of suspension training methods of skill related fitness parameters by applying ST to senior athletes. As a result, this research can serve as a reference for future improvements of senior Athlete’s strength training.

In this study, we hypothesized that suspension training would exhibit benefits to the development of speed, agility and balance would be more effective in improving senior athletes.

**Methods:**

**Experimental Design**

Randomized controlled pre and posttest design was used for the study. Subjects visited two times to the lab. At the first visit, subjects were familiarized to the study protocols. At the second visit subjects performed pre and posttest speed, agility and balance values before and after suspension training program. Subjects participated suspension training program. Before and
after, they performed speed was used to measure 30mts dash test in 1/100 of the seconds, agility was used to measured shuttle run illinois agility test in 1/100 of the seconds and balance was used to measured by stork stand test in 1/100 of the seconds. The test was applied three times as before warm-up, after immediately warm-up, and after immediately suspension training program. Thirtysenior athlete voluntarily participated in this study as subject. Subjects divided two groups as suspension training group (n=15), and control group (n=15). Subjects separated two groups randomly method. The subjects age ranged from 55 to 79 years.

**Training protocol:** suspension training exercise intervention consisted of 30-40 min exercise namely; squat with heel raise, trx single leg hip hinge, trx crossing balance lunges, trx single leg squat, tree pose with chest stretch, trx plyometric lunges, trx pistol squat (single leg squat), trx wall row, trx single leg burpees, trx triple threat abdominals, trx row to extended plank, trx single hand push up, trx chin up, trx hand stand and trx handstand push ups.

**Statistical analysis:** The data were analysed using statistical package for social sciences (SPSS) for windows version 16.1. Paired t-test was carried out between suspension training and control groups. To find out significance difference between the means of pre and post test of the groups and are presented in table I & II.

### Table-I

**TABLE SHOWING COMPARISON OF DIFFERENCE IN PRE TREATMENT AND POST TREATMENT SCORES AMONG SUSPENSION TRAINING.**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Test</th>
<th>Mean</th>
<th>Mean Difference</th>
<th>Std. Error of the mean</th>
<th>DF</th>
<th>‘t’</th>
<th>Table value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Skill Related Fitness Variables</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Speed</td>
<td>Pre test</td>
<td>7.05</td>
<td>0.96</td>
<td>0.96</td>
<td>14</td>
<td>10.22*</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Post test</td>
<td>6.09</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Agility</td>
<td>Pre test</td>
<td>17.16</td>
<td>2.93</td>
<td>0.96</td>
<td>14</td>
<td>15.10*</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Post test</td>
<td>14.23</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Balance</td>
<td>Pre test</td>
<td>12.99</td>
<td>3.83</td>
<td>0.93</td>
<td>14</td>
<td>7.44*</td>
<td></td>
</tr>
</tbody>
</table>

2.145
Table I suggests the obtained ‘t’ values of the suspension training group on criterion measure of 10.22 (speed), 15.10 (agility), 7.44 (balance). The obtained ‘t’ values to be significant at 0.05 level for degree of freedom 1, 14 the required critical value was once 2.145. Hence the obtained ‘t’ values on the selected criterion variables greater than the required critical value, it was concluded that the suspension training programme produced enormous improvement mean difference.

Table II

<table>
<thead>
<tr>
<th>Variable</th>
<th>Test</th>
<th>Mean</th>
<th>Mean Difference</th>
<th>Std. Error of the mean</th>
<th>DF</th>
<th>‘t’</th>
<th>Table value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Skill Related Fitness Variables</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Speed</td>
<td>Pre test</td>
<td>7.12</td>
<td>0.03</td>
<td>0.096</td>
<td>14</td>
<td>2.02</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Post test</td>
<td>7.15</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Agility</td>
<td>Pre test</td>
<td>16.41</td>
<td>0.04</td>
<td>0.255</td>
<td>14</td>
<td>1.31</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Post test</td>
<td>16.37</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Balance</td>
<td>Pre test</td>
<td>14.74</td>
<td>0.06</td>
<td>0.52</td>
<td>14</td>
<td>0.71</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Post test</td>
<td>14.68</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table II suggests the obtained ‘t’ values of the control group on criterion measure of 2.02 (speed), 1.31 (agility), 0.71 (balance). The obtained ‘t’ values to be significant at 0.05 level for degree of freedom 1, 14 the required critical value was once 2.145. Hence the obtained ‘t’ values on the selected criterion variables less than the required critical value, it was concluded that the control group no differences.

Discussion:
As our result study experimented the effect of suspension training on skill fitness parameters among senior athletes. The results of this study indicated that suspension training is more efficient to bring out desirable changes over the speed, agility and balance of senior athletes. The finding of the present study had similarity with the findings of the investigators referred in this study. Mathisen et al., (2014) the training sessions with short superior pace bouts at maximum effort, interspersed with adequate recovery time, results in improvements in both in linear superior pace (acceleration) and in agility performance in adolescent female athletes. Bonnette et al., (2011) indicate that a two-day a week sprint, plyometric and agility training program over four weeks can have positive results on the speed, endurance and power of soccer players. Athletics coaches and trainers should consider implementing an agility, plyometric and suspension training program for the development of speed, agility and balance in their athletes, even if they have a limited amount of time for training outside of athletes practice.

Conclusion: suspension training has significant effect on skill related fitness parameters such as speed, agility and balance. It means that suspension training increase speed agility also increase balance therefore increase the suspension training to given the senior athletes.

References:


2. Mandava MY, Vairavasundaram C, Chotemiya MM. Effect of low intensity plyometric training on selected neuro muscular activities of school students.

3. Itoo JA, Vairavasundaram C. Influence of high altitude training on selected physical fitness variables on long distance runners.

4. Jany MS, Vairavasundaram C, Chotemiya MM. Effect of kettlebell training on selected physical fitness variables among students from alagappa university college of physical education.

5. Vairavasundaram C, Palanisamy A. Effect of Bulgarian bag training on selected physical variables among handball players. Indian journal of applied research. 2015 Mar;5(3).


