COMPARISON OF TACTICAL BEHAVIOUR EFFICIENCY BETWEEN U-12 AND U-13 YOUTH SOCCER PLAYERS

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INTRODUCTION

The study of team sports through the observation of players’ behaviour is not recent, having begun alongside with the constraints of expertise (GARGANTA, 2001). In Soccer, as well as in other team sports, tactical behaviour can be defined as the sequences of actions performed by players aiming to deal, by the most appropriate means, with match situations, considering the constraints of time, space and task (BOULOGNE, 1972; GARGANTA, 1997). Accordingly, the analysis of tactical behaviour should not be solely based on a particular action performed in isolation, but rather on general tactical patterns, which comprise all the typical characteristics of isolated actions of all players within a team (MAHLO, 1969).

In this respect, tactical behaviour analyses in Soccer have been led in recent years with the purpose of verifying the level in which this variable could be affected by other factors (SAMPAIO; MAÇÂS, 2012). Some researchers examined the association between tactical behaviour and contextual variables (i.e. match location and match status), and concluded that players’ behaviour can be influenced by these constraints in some degree (TAYLOR et al., 2008; LAGO-PEÑAS, 2009). Yet, there seem to be a lack of further researches over this subject by the perspective of behaviour efficiency, and how it could vary according to different age groups.

Thus, this study aims to compare tactical behaviour efficiency between players from U-12 and U-13 age groups.

Methods

Sample

The sample comprised 5,319 tactical actions performed by 100 youth soccer players from U-12 (34 players) and U-13 (66 players) age groups. U-12 players performed 1,873 tactical actions while those from U-13 age group performed 3,446.
Instrument

We used the System of Tactical Assessment in Soccer (FUT-SAT) (TEOLDO et al., 2010; TEOLDO et al., 2011), which enables the assessment of tactical actions performed by players with and without ball possession. Such assessment is based on ten core offensive (Penetration, Offensive Coverage, Depth Mobility, Width and Length and Offensive Unity) and defensive (Delay, Defensive Coverage, Balance, Concentration and Defensive Unity) tactical principles of the Soccer game.

Procedures

This study had the approval of the Ethics Committee from the Federal University of Viçosa (Of. Ref. Nr. 130/2011) and meets the norms established by the National Health Council (466/2012) and by the standards of the Declaration of Helsinki for researches with human beings (1996).

In FUT-SAT’s field test, participants are grouped in two teams, each one with three players and a goalkeeper (GK+3 vs. 3+GK). Players wore numbered vests of different colours, with the aim of facilitating their identification during video analysis. Players were asked to perform the test respecting the rules of the Soccer game, except by the offside rule (TEOLDO et al., 2011). Tactical behaviour efficiency was assessed through the accuracy of the tactical principles.

Material

Analyses were performed with the utilization of a laptop computer (DELL Inspiron N4030 Intel Core™ i3 processor). Video footage was converted into " .avi" files through Prism Video Converter.

Statistical Analysis

Descriptive analysis (frequency, means and standard deviation) was conducted. Kolmogorov-Smirnov test was performed to verify data distribution. For parametric data ANOVA One Way was utilized, while for non-parametric Kruskal-Wallis test was used. Significance level was set to \( P<0.05 \).

We performed test-retest reliability for the observations, respecting a 20-day interval for reanalysis, thus avoiding task familiarity issues (ROBINSON; O'DONOGHUE, 2007). For reliability calculation we used Cohen’s Kappa test. Analyses were verified through the reassessment of 906 tactical actions, or 17.34% of the overall sample, a value which is greater than the percentage (10%) suggested by literature (TABACHNICK; FIDELL, 2012). Intra- and inter-observer reliabilities displayed Kappa values that ranged from 0.814 (SE=0.028) to 0.987 (SE=0.006) and from 0.881 (SE=0.015) to 0.987 (SE=0.005).
respectively. These values are classified as "Almost Perfect" (0.81 - 1.00) by literature (LANDIS; KOCH, 1977).

RESULTS AND DISCUSSION

Table 1 presents values of means and standard deviation of the accuracy percentage of tactical principles performed by players from both age groups (U-12 and U-13).

<table>
<thead>
<tr>
<th>Accuracy Percentage</th>
<th>U-12</th>
<th>U-13</th>
<th>sig.</th>
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</thead>
<tbody>
<tr>
<td>OFFENSIVE</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Penetration</td>
<td>81.48±25.35</td>
<td>81.38±26.71</td>
<td>0.833</td>
</tr>
<tr>
<td>Offensive Coverage</td>
<td>92.93±10.62</td>
<td>93.45±10.05</td>
<td>0.831</td>
</tr>
<tr>
<td>Depth Mobility</td>
<td>94.59±18.80</td>
<td>80.39±34.69</td>
<td>0.065</td>
</tr>
<tr>
<td>Width and Length</td>
<td>92.45±11.01</td>
<td>90.48±12.44</td>
<td>0.317</td>
</tr>
<tr>
<td>Offensive Unity</td>
<td>84.37±25.99</td>
<td>85.62±23.91</td>
<td>0.883</td>
</tr>
<tr>
<td>DEFENSIVE</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Delay</td>
<td>78.73±18.45</td>
<td>62.58±27.97</td>
<td>0.005*</td>
</tr>
<tr>
<td>Defensive Coverage</td>
<td>94.92±17.41</td>
<td>83.37±30.30</td>
<td>0.038*</td>
</tr>
<tr>
<td>Balance</td>
<td>69.32±25.16</td>
<td>71.81±28.61</td>
<td>0.449</td>
</tr>
<tr>
<td>Concentration</td>
<td>95.06±13.78</td>
<td>92.29±15.31</td>
<td>0.192</td>
</tr>
<tr>
<td>Defensive Unity</td>
<td>88.17±14.78</td>
<td>83.81±19.08</td>
<td>0.323</td>
</tr>
</tbody>
</table>

Table 1: Means and standard deviation of accuracy percentage of tactical principles

Results displayed significant higher values of accuracy percentage of the defensive principles of Delay (P=0.005) and Defensive Coverage (P=0.038) from U-12 compared to U-13 age group. This means that U-13 players were significantly less efficient when performing these principles than U-12 players.

Such principles are related to space management inside the game centre (or closer to the ball), what may suggest that players from the U-12 age group were better at performing defensive actions closer to the game centre probably because players from lower age groups are slower in executing actions when in possession (WORTHINGTON, 1974; VÄNTTINEN; BLOMQVIST; HÄKKINEN, 2010). Thus, such limitation might have benefited players who were closer to the game centre, enabling them to easier recover the ball due to the increased time for decision-making (BECHARA, 2004; VÍLLORA et al., 2011).

CONCLUSION

It is concluded that tactical behaviour efficiency varies according to age group. Future studies should compare tactical behaviour efficiency between age groups where technical skills are expected to be fully developed.

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