ANALYSIS OF LOWER LIMBS EXPLOSIVE FORCE IN EX-PLAYERS MEN AND WOMEN BASKETBALL MAPUTO CITY.
COMPARATIVE STUDY

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ABSTRACT

The aim of this study was to analyze the explosive strength of the lower limbs in male and female ex-basketball players of Maputo. The height of the subjects was determined by resorting to a home tape. To determine weight was used a digital anthropometric scale. To determine the values of the explosive strength of the lower limbs appealed to ErgoJump (1000 Digitime, DIGITEST Finland) platform. Data normality was verified using the Shapiro-Wilk statistical test and homogeneity of variances through the Levene test statistic. For comparison of groups it was applied the Mann-Whitney U test, and for the association between the parameters of the study we used the Spearman correlation. The significance level was 5%.

Keywords: Basketball, Strength, Explosive Force, Elasticity Index.

INTRODUCTION

Ugrinowitsch et al., (1998) have studied the performance of jump vertically into several categories in basketball and volleyball equipment jump vertical jump test. The vertical jumps require a combination of several elements for excellent performance. Thus, the physical element that presents the greatest contribution to the performance of the vertical jump is one that interacts with anthropometric, technical, tactical environmental and perceptual elements, therefore Newton, signaled in that direction by stating that significant changes in the results of vertical jump performance are characterized by changes in neuromuscular function, such as maximum strength, the ability of the elongation cycle and explosive strength of the lower limbs.

MATERIALS AND METHODS

The sample was comprised of 4 athletes, 2 female and 2 male. The height of the subjects was determined by resorting to a home tape. To determine weight was used a digital anthropometric scale. To determine the values of the explosive strength of the lower limbs it was appealed to Ergo-Jump (1000 Digitime, DIGITEST Finland) platform. The ergometer used was connected to a timer that recorded the flight time (tv), starting from which is derived a set of formulas proposed by Komii and Bosco (1983), to calculate the elevation of the center of gravity and the height reached by subject.

\[ V_f = V_i + g \quad \text{ou} \quad V_f = V_i^2 + 2 \cdot g \cdot (V_f - V_i) \]

\[ ECG = g \cdot t_v^2/8 \]

\[ V_f = V_i + g \quad \text{ou} \quad V_f = V_i^2 + 2 \cdot g \cdot (V_f - V_i) \]
To test the influence of the upper limbs in the vertical jump were used two techniques (Asmussen & Bonde-Petersen, 1974; Komi & Bosco, 1978), namely the contractile component and the elastic component (SCM) (performing the jump in static position semi-squat with hands on waist).

Data normality was verified using the Shapiro-Wilk statistical test and homogeneity of variances through the Levene test statistic. For comparison of groups it was applied the Mann-Whitney U test, and the association between the parameters of the study we used the Spearman correlation. The significance level was 5%.

RESULTS

Table 1 shows the mean values and standard deviations of the jump in the contractile component, the elastic component and the index of elasticity are presented.

<table>
<thead>
<tr>
<th>Group</th>
<th>Elastic Component (SE)</th>
<th>Contractile component (SCM)</th>
<th>Index of Elasticity (Δh)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>32.3±2.3</td>
<td>33.7±3.4</td>
<td>1.4</td>
</tr>
<tr>
<td>2</td>
<td>28.3±2.6</td>
<td>29.2±2.5</td>
<td>0.9</td>
</tr>
</tbody>
</table>

Compared to females, the results of the male group were significant which means that the boys jumped more than girls. The action of the contractile component of the lower limb muscles of boys was higher. Moreover, major component elastic as a corollary intervened as potentiated the jump.

CONCLUSIONS

Analyzing the results of our study we observed that the differences demonstrated a high potential of the lower limb muscles of male group of 1.4 relative to females 0.9.

Relative to the index of elasticity (Δh), resulting from the difference found from the values obtained in SCM and (SE) the and provides us with data on the elastic potential of the muscles by the effect caused by prior stretch (Δh = SCM - SE), the male group showed the value of 1.4, and the girl group, the value of 0.9.

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REFERENCES
