The Body Height and Top Team Handball Players

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Summary

The aim of this study is to contribute to the theory of the selection process of top team handball players. The basic working method is a retrospective, descriptive analysis of the body height of players from twenty-six top events (ECh, WCh, and OG). The aggregate results are contained in two tables. On average national team players are distinctively taller in comparison to the general population. The importance of the body height is different in relation to various playing positions. The increase of the average body height in top teams is achieved above all by means of unaffected and calculated selection. The “secular growth acceleration” within the general population is irrelevant. However, with the increase in body height, problems with the development of coordinative ability of the players also increase. Therefore, it is wise to use not only the taller players but also some “smaller” players for the composition of top handball teams.

Key words: Team Handball, Body Height, Players Specialization, Secular Acceleration

Introduction

Playing performance in team handball has multidimensional character. Non-standard match situations, defending by the opponent and the various demands of the playing roles (goalkeeper, back court player, defender on the wing, etc.) complicate the definition of the ideal composition of different skills and abilities on a top level. This means that the idea of physical ability for playing position is highly individual and situation related. The relevance of individual predispositions is therefore relative and variable, and to a certain extent predispositions are compensable or substitutable. It is possible to compensate some competence insufficiencies with other skills.

Body height belongs among biomechanical determinants, where longer extremities correlate to a larger body weight. Taller body height can bring advantage to a direct duel with an opponent, by stealing, throwing and handling of the ball.

Problem

We are looking for the answer to the following question: “What is the body height of top handball players“?

Looking at the situation a posteriori and on the basis of theoretical speculation, we presume that the above average body height of overwhelming majority of handball players is the consequence of a unaffected or deliberate selection process. This is closely connected with several particular hypotheses:
- The body height of national team averages is higher than the average of the general population.
- The importance of the body height depends on the playing position of the player
- The average body height of the national team players increased faster than the average height of the general population.

Aim

The aim of this study is to contribute to the theory of the selection process of top team handball players.

Method

The basic working method is a retrospective, descriptive analysis of the body height of players from top events (ECh, WCh, and OG). Procurable data, a total of 26 events (European Championship - ECh, World Championship - WCh and Olympic Games - OG), covering a time scale of the 1970's to present has been analysed.

Results

The cumulative results are contained in two tables: Table 1 - 15 men’s competitions and Table 2 - 11 women’s competitions.

Discussion

The entry of handball in the Olympic programme (men 1972, women 1976) was a meaningful marker in the development of top handball. The accent on successful national representation can also be seen in the sequential increase in body height of those in the groups observed. In addition, we recognise the diminishing percentage of “smaller” players and the increase in players standing at 190cm or over (men) and 180cm or over (women). Moderate variations are affected through the number of participating teams, through type of competition (ECh, WCh, OG) and understandably by age category.

The teams from Africa and Asia (not mentioned in the table) are comparably “smaller” than the majority of European Teams. In 2007, using the Men’s World Championship as an example, the average height of the winning team – Germany – was 194cm, 15th Korea had an average of 187cm and Kuwait (18th) had an average of 184cm. In the same year at the Men’s U19 WCh, 1st Denmark had a height average of 191cm, Bahrain (8th) averaged at 181cm and 11th Korea had an average of 182cm. At the Women’s U18 WCh in 2006, the winning team – Denmark – had an average of 175cm, 2nd Korea averaged out at 172cm and Japan (7th) had an average height of 167cm. Body height averages amongst the three best ranked teams are, as a rule, bigger than the average in single competitions.

Individual differences are often extreme; see for instance 2002 Men’s ECh (from 166cm to 214cm) or Women’s 18 ECh (from 149cm to 198cm). Nevertheless, there are extraordinary exceptions. The reasons for this lie mostly with insufficient player
selection or the ability of key players who compensate a lack of height through other positive skills.

The body height averages of all national teams surveyed are above those of the respective general populations (see sources: 3, 23, 25). The body height average of 18-year-old Czech boys in 2001 was 180.1cm and girls 167.2cm. But approximately 90% of the Czech population in this age group was below the average of European national handball teams in this age category.

From the procurable data, it is with difficulty only possible to distinguish the players from the playing functions. However, some sources (9, 12, 17) state that the tallest players are found in the positions of goalkeeper, back players and line players. Following on from this are the middle backs (playmakers) and the "smallest" are the wings players. At the 2007 Men’s WCh (the body height average of all players inclusive goalkeepers was 189.2cm) the goalkeepers average was (n = 61) 190.6cm. But first 16 teams had a goalkeeper average of (n = 40) 193.2cm and the last 8 teams (n = 21) 185.7cm.

In the 20th century, so-called “secular growth acceleration of population” was estimated at approximately 1cm according to different research over the course of 10 years (6). However, for various reasons this figure fluctuated (26). Based on the latest Czech research (25) concerning adolescent girls, the result for positive secular growth trend in body height is no longer to be found. Monitored growth of average of body height by best players is therefore possible to explain from secular growth acceleration of population only from very small part. Much more has come to light here e.g. the factor of the selection of players with favourable somatic qualifications.

Table 1: Body Height of Top Male Handball Players

<table>
<thead>
<tr>
<th>Competition</th>
<th>N.T.</th>
<th>N.P.</th>
<th>Aver.</th>
<th>A-B3</th>
<th>Min</th>
<th>Max</th>
<th>179</th>
<th>189</th>
<th>190</th>
<th>L</th>
</tr>
</thead>
<tbody>
<tr>
<td>1970 WCh</td>
<td>16</td>
<td>256</td>
<td>184.6(6)</td>
<td>26.8</td>
<td>56.8</td>
<td>16.4</td>
<td>14</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1972 OG</td>
<td>16</td>
<td>256</td>
<td>185.2(6)</td>
<td>18.0</td>
<td>64.4</td>
<td>17.6</td>
<td>14</td>
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<tr>
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<td>250</td>
<td>186.2(6)</td>
<td>18.6</td>
<td>62.4</td>
<td>18.8</td>
<td>14</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>1976 OG</td>
<td>12</td>
<td>166</td>
<td>188.1(6)</td>
<td>12.1</td>
<td>50.6</td>
<td>37.3</td>
<td>14</td>
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</tr>
<tr>
<td>1978 WCh</td>
<td>16</td>
<td>253</td>
<td>186.3</td>
<td>187.5</td>
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<td>17</td>
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<tr>
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<td>191.1</td>
<td>192.5</td>
<td>166</td>
<td>214</td>
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<td>254</td>
<td>191.1</td>
<td>192.4</td>
<td>176</td>
<td>214</td>
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<td>11</td>
</tr>
<tr>
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<td>396</td>
<td>189.2</td>
<td>192.0</td>
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<td>209</td>
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<td>186.4</td>
<td>190.0</td>
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<td>209</td>
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<td>53.1</td>
<td>31.3</td>
<td>A</td>
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<tr>
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<td>189.6</td>
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Table 2: Body Height of Top Female Handball Players

<table>
<thead>
<tr>
<th>Competition</th>
<th>N.T.</th>
<th>N.P.</th>
<th>Aver.</th>
<th>A-B3</th>
<th>Min</th>
<th>Max</th>
<th>169</th>
<th>179</th>
<th>180</th>
<th>L</th>
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<tbody>
<tr>
<td>1978 WCh</td>
<td>12</td>
<td>169</td>
<td>171.2</td>
<td>172.1</td>
<td>158</td>
<td>187</td>
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<td></td>
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<tr>
<td>2000 ECh</td>
<td>12</td>
<td>198</td>
<td>176.2</td>
<td>178.3</td>
<td>161</td>
<td>194</td>
<td>15.9</td>
<td>49.5</td>
<td>34.6</td>
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</tr>
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<td>8(24)</td>
<td>124</td>
<td>175.9</td>
<td>177.9</td>
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<td>16.1</td>
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<tr>
<td>2006 WCh-18</td>
<td>11</td>
<td>174</td>
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<td>173.8</td>
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<td>15</td>
</tr>
</tbody>
</table>

Legend:
N.T. = number of observed teams, [8(24) = best 8 teams from 24]
N.P. = number of observed players
Aver. = body height average of all players, [(8) = average of players from 8 best teams]
A-B3 = body height average of three best teams
Min = smallest player
Max = tallest player
179 (169) = proportion of male (female) players in percent with body height of up to 179 cm (to 169 cm)
189 (179) = proportion of male (female) players in percent with body height from 180 to 189 cm (from 170 to 179 cm)
190 (180) = proportion of male (female) players in percent with body height 190 cm (180 cm) and more
L = resources: number according to literature index or A (unpublished matters from the author)

Conclusion

Based on the acquired available data and its analysis, it is not possible to reject any of afore mentioned hypotheses. The players in top handball teams are on average taller than the average population. The importance of body height is different depending on the player’s function. Likewise the longitudinal increase of body height average by national teams was in progress faster than the secular growth acceleration of population. Accordingly, when the selection of top handball players is based on body height, then only approximately 25% of the general population (the tallest) would be eligible. In spite of the importance of the body height factor for the playing performance of top players, it is not possible to ignore also other relevant factors (coordination, speed, power, mental ability) that can compensate for insufficient of the body height. It appears probable that in due proportion with the player’s body height, the problems with coordinative and speed capabilities increase. For this reason it is advantageous to compose a team not only exclusively of tall players, but also some players that are relatively “smaller”.

Literature


(Táborský, status 22.09.2007)