# BUILDING AND STANDARDIZING THE BATTERY A PHYSICAL MOTOR TEST OF THE NATIONAL CENTER FOR HANDBALL PLAYERS 

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#### Abstract

: Physical and motor abilities are the cornerstones of the sport of the handball game, which requires its practitioners to possess high physical and mobility abilities. The researchers work in the Ministry of Youth and Sports as test supervisors in order to avoid the existence of an integrated battery to measure the physical and motor abilities of the National Center for Athletics Therefore, the researcher built a battery of physical and motor test to benefit from the test of the Center's players.


Keywords: Building - standardizing- handball.

## INTRODUCTION

Physical and motor abilities play a large role in the handball game, and the fact that this game of the games, which is characterized by roughness and the need for a great physical and mobility capabilities, which is one of the factors to reach the upper levels and the specialists of sports Shann rely on the correct scientific foundations that drive the wheel Progress is one of the most important scientific foundations, which is the use of tests and measurements. Tests and measurements are one of the most important factors to identify the level of development of the players as well as to identify the effectiveness. Here, Fartousi et al. (2015) points out that " The use of tests and measurement has played a major role in the evaluation and thus progress in physical education because it is a helpful factor in guiding students to know the
strengths and weaknesses of the physical qualities to be evaluated. "(Fartousi, 2015 , P. 17)

The purpose of this research is to build and standardize a physical and motor test battery to benefit from the knowledge of the level of the players of the National Center for the care of sports talent handball, as the researcher, through being a member of the Central Tests Committee at the National Center for Sports Talent noted that most of the batteries used in the center Do not meet all the requirements as most of them rely on non-domestic test batteries and standards do not apply to Iraqi players.

The researcher relied on many previous studies including Anwar (2013), in which a test battery for the basic skills of handball was built for students of the second stage at the Faculty of Physical Education at Salahuddin University. In another study (Muhammad,
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2012) (Jameel, 2013) through the method adopted by the researcher in building the battery as well as benefiting from the study (Janabi, 2009) and study (Rajab, 2013) in the construction of the battery Current.

## MATERIALS AND METHODS:

## Research Methodology:

The researcher used the descriptive method in the survey method to suit the nature of the research.
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## Search community and sample:

The research community consists of the players of the National Center for the care of sports handball in Baghdad and the provinces who are in the ages of 1617 years and the number of (80) players.

## Nomination of physical and motor pulses tests:

)80 (\%as a condition for acceptance of the test. Table (1) represents the results of the agreement of the experts on the physical and mechanical tests, and then the development of these measurements in the analysis for the selection of The most appropriate of which is according to statistical processing in the method of global analysis.

Table (1): For special physical fitness tests under consideration
$\left.\begin{array}{|l|l||l|l|l|l|}\hline \begin{array}{l}\text { the } \\ \text { agreement\% }\end{array} & \text { Experts } & \text { the exams } & \begin{array}{l}\text { Special physical } \\ \text { abilities }\end{array} & \text { sequence } \\ \hline 86.66 & 13 & 14 & \begin{array}{l}\text { 1. Throw a medical ball to the farthest } \\ \text { distance by one arm }\end{array} & \begin{array}{l}\text { Explosive force of } \\ \text { the arms of the arms }\end{array} & \\ \hline 93.33 & 12 & \text { 2. Throw a medical ball from sitting on a } \\ \text { chair with arms }\end{array}\right)$
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| 80\% | 12 | 3. Pull on the muzzle for minutes |  |  |
| :---: | :---: | :---: | :---: | :---: |
| 80\% | 12 | 1. Jump to the top of the place for a minute | The power of the two men | 6 |
| 86.66 | 13 | 2. The two men have a long jump for the longest distance |  |  |
| 80\% | 12 | 3. Partition for maximum left and right distance for a minute |  |  |
| 80\% | 12 | 1. Test run (20 m) from high start. | Transition speed | 7 |
| 86.66 | 13 | 2. Test run (30 m) from the high start |  |  |
| 80\% | 12 | 3. Test run (40 m) from high start |  |  |
| 100\% | 15 | 1. Make Zakazak | Fitness | 8 |
| 100\% | 15 | 2. Multi-lateral run |  |  |
| 93.33 | 14 | 3. Slope-shaped slings (8) |  |  |
| 86.66\% | 13 | 4. Shuttle Run |  |  |

Scientific foundations for physical and motor tests:
The researchers extracted the scientific bases for the tests that were identified for the variables of the study in question by applying the tests on a sample of the players from the non-research sample and the number of (12) players.

Table (2): Stability and self-honesty and objectivity of physical and motor tests used in research

| Objectivity | Self- <br> honesty | Stability | Physical tests used in research | sequen <br> ce |
| :--- | :--- | :--- | :--- | :--- |
| 0.800 | 0.890 | 0.820 | Throw a medical ball to the farthest distance by one <br> arm | 1 |
| 0.820 | 0.920 | 0.850 | Throw a medical ball from sitting on a chair with arms | 2 |
| 0.880 | 0.890 | 0.800 | Throw a handball to the farthest distance | 3 |
| 0.830 | 0.850 | 0.710 | Vertical Jump Test - Sargent | 4 |
| 0.700 | 0.850 | 0.710 | Test the wide jump of stability | ( |
| 0.910 | 0.940 | 0.880 | Vertical jump test for higher rate | 6 |
| 0.890 | 0.950 | 0.910 | Tri-jump test with feet exchange of stability. | 7 |
| 0.790 | 0.840 | 0.700 | Test the front and press 15 seconds | 8 |
| 0.770 | 0.880 | 0.780 | Test the pull of the forearm by 15 seconds | 9 |
| 0.880 | 0.900 | 0.820 | Medical Ball Throw Test | 10 |

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| 0.910 | 0.960 | 0.920 | Test the hatch for the maximum distance1010 left and <br> right | 11 |
| :--- | :--- | :--- | :--- | :--- |
| 0.980 | 0.900 | 0.810 | Front leaning for min | 12 |
| 0.950 | 0.890 | 0.800 | Pay in parallel to min | 13 |
| 0.870 | 0.900 | 0.810 | Drag on the mind for a minute | 14 |
| 0.770 | 0.900 | 0.810 | Jump to the top of the place for a minute | 15 |
| 0.880 | 0.890 | 0.790 | Jump the two legs for the longest distance repeatedly | 16 |
| 0.900 | 0.840 | 0.710 | Divide for the maximum left and right distance for a a <br> minute | 17 |
| 0.700 | 0.950 | 0.910 | Test ran (20 m) from the high start. | 18 |
| 0.850 | 0.950 | 0.910 | Test ran (30 m) from the high start | 19 |
| 0.890 | 0.950 | 0.900 | Test ran (40 m) from the high start | 20 |
| 0.870 | 0.710 | 0.710 | Zaqzak ran | 21 |
| 0.780 | 0.870 | 0.750 | Multi-stream streaming | 22 |
| 0.920 | 0.860 | 0.740 | Slope winding (8) | 23 |
| 0.780 | 0.880 | 0.770 | Shuttle Run | 24 |

In order to verify the validity of the tests in the research, the researchers extracted the level of ease and difficulty by presenting the statistical description of the candidate tests in the research field where the mean, standard deviation and torsion coefficient of the candidate tests were found. Table 3 shows that all torsion values are less than $1 \square$ ) This indicates that the tests used are distributed in a moderate distribution and that the tests on one level of difficulty show that the test is suitable if its distribution is normal and that the tests do not constitute severe torsion (Salah al-Din, 2000, p. 76)

Table (3)

| Calculated t value |  | Lower grades |  | High grades |  | Name of test | seq uen ce |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Values of signific ance | T | $i \pm p$ | S | $i \pm p$ | S |  |  |
| 0.000 | 18.000 | 0.000 | 16.000 | 0.229 | 16.947 | Throw a medical ball to the farthest distance by one arm | 1 |
| 0.000 | 13.435 | 0.229 | 4.947 | 0.229 | 5.947 | Throw a medical ball from sitting on a chair with arms | 2 |
| 0.000 | 37.000 | 0.000 | 30.000 | 0.229 | 31.947 | Throw a handball to the farthest distance | 3 |
| 0.000 | 21.892 | 1.264 | 251.526 | 1.827 | $\begin{aligned} & \hline 262.00 \\ & 0 \end{aligned}$ | Vertical Jump Test - Sargent | 4 |
| 0.000 | 32.505 | 0.375 | 230.157 | 0.478 | $\begin{aligned} & \hline 234.00 \\ & 0 \end{aligned}$ | Test the wide jump of stability | 5 |


| 0.000 | 21.769 | 0.229 | 34.947 | 0.315 | 36.894 | Vertical jump test for higher rate | 6 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 0.000 | 20.000 | 0.000 | 14.000 | 0.229 | 15.052 | Tri-jump test with feet exchange of stability. | 7 |
| 0.000 | 20.000 | 0.000 | 4.000 | 0.229 | 5.053 | Test the front and press 15 seconds | 8 |
| 0.000 | 20.000 | 0.000 | 3.000 | 0.229 | 4.053 | Test the pull of the forearm by 15 seconds | 9 |
| 0.000 | 22.317 | 0.315 | 31.105 | 0.419 | 33.790 | Medical Ball Throw Test | 10 |
| 0.000 | 37.000 | 0.000 | 2.000 | 0.229 | 3.947 | Test the hatch for the maximum distance 1010 left and right | 11 |
| 0.000 | 37.000 | 0.000 | 12.000 | 0.229 | 13.947 | Front leaning for min | 12 |
| 0.000 | 20.421 | 0.918 | 23.211 | 1.264 | 30.526 | Pay in parallel to min | 13 |
| 0.000 | 22.137 | 0.315 | 22.105 | 0.607 | 25.579 | Drag on the mind for a minute | 14 |
| 0.000 | 37.000 | 0.000 | 18.000 | 0.229 | 19.947 | Jump to the top of the place for a minute | 15 |
| 0.000 | 27.153 | 0.958 | 51.158 | 0.817 | 59.000 | Jump the two legs for the longest distance repeatedly | 16 |
| 0.000 | 38.460 | 0.513 | 60.474 | 0.000 | 65.000 | Divide for the maximum left and right distance for a minute | 17 |
| 0.000 | 28.059 | 0.513 | 90.526 | 0.419 | 94.790 | Test ran (20 m) from the high start. | 18 |
| 0.000 | 37.000 | 0.000 | 2.000 | 0.229 | 3.947 | Test ran (30 m) from the high start | 19 |
| 0.000 | 14.473 | 0.452 | 2.263 | 0.229 | 3.947 | Test ran (40 m) from the high start | 20 |
| 0.000 | 37.000 | 0.000 | 3.000 | 0.229 | 4.947 | Zaqzak ran | 21 |
| 0.000 | 37.000 | 0.000 | 6.000 | 0.229 | 7.947 | Multi-stream streaming | 22 |
| 0.000 | 18.000 | 0.000 | 12.000 | 0.229 | 12.947 | Slope winding (8) | 23 |
| 0.000 | 25.107 | 0.943 | 18.000 | 0.612 | 24.474 | Shuttle Run | 24 |

Excellent ability for motor, physical and skill tests:
After the main experiment, the two researchers extracted the perfect honesty for the physical, motor and skill tests. After collecting and unloading the data for the tests of the variables concerned with the study on the building sample, the raw grades for each variable were arranged in descending order from the highest grade to the lowest grade. ) Of the highest grades (19) players and the same degrees of lower to show the ability of the tests selected to distinguish between the players of the building sample, as well as "one of the elements of honesty is the ability to test to distinguish between different capabilities." (Mashhadani, 2015, page 183) (T) is calculated using the statistical T test of the unallocated equal samples. After the statistical processing of the data, they were all shown to be highly discriminating between the upper and lower groups because the value of the significance at the freedom level of $-2=17$ is smaller than the significance of 0.05 and the two tables(4) Show that.

Table (4) shows the distinct ability of kinetic and physical tests

| Calculated t value |  | Lower grades |  | High grades |  | Name of test | seq <br> uen ce |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Values of signific ance | T | $i \pm p$ | S | $i \pm p$ | S |  |  |
| 0.000 | 18.000 | 0.000 | 16.000 | 0.229 | 16.947 | Throw a medical ball to the farthest distance by one arm | 1 |
| 0.000 | 13.435 | 0.229 | 4.947 | 0.229 | 5.947 | Throw a medical ball from sitting on a chair with arms | 2 |
| 0.000 | 37.000 | 0.000 | 30.000 | 0.229 | 31.947 | Throw a handball to the farthest distance | 3 |
| 0.000 | 21.892 | 1.264 | 251.526 | 1.827 | 262.000 | Vertical Jump Test - Sargent | 4 |
| 0.000 | 32.505 | 0.375 | 230.157 | 0.478 | 234.000 | Test the wide jump of stability | 5 |
| 0.000 | 21.769 | 0.229 | 34.947 | 0.315 | 36.894 | Vertical jump test for higher rate | 6 |
| 0.000 | 20.000 | 0.000 | 14.000 | 0.229 | 15.052 | Tri-jump test with feet exchange of stability. | 7 |
| 0.000 | 20.000 | 0.000 | 4.000 | 0.229 | 5.053 | Test the front and press 15 seconds | 8 |
| 0.000 | 20.000 | 0.000 | 3.000 | 0.229 | 4.053 | Test the pull of the forearm by 15 seconds | 9 |
| 0.000 | 22.317 | 0.315 | 31.105 | 0.419 | 33.790 | Medical Ball Throw Test | 10 |
| 0.000 | 37.000 | 0.000 | 2.000 | 0.229 | 3.947 | Test the hatch for the maximum distance 1010 left and right | 11 |
| 0.000 | 37.000 | 0.000 | 12.000 | 0.229 | 13.947 | Front leaning for min | 12 |
| 0.000 | 20.421 | 0.918 | 23.211 | 1.264 | 30.526 | Pay in parallel to min | 13 |
| 0.000 | 22.137 | 0.315 | 22.105 | 0.607 | 25.579 | Drag on the mind for a minute | 14 |
| 0.000 | 37.000 | 0.000 | 18.000 | 0.229 | 19.947 | Jump to the top of the place for a minute | 15 |
| 0.000 | 27.153 | 0.958 | 51.158 | 0.817 | 59.000 | Jump the two legs for the longest distance repeatedly | 16 |
| 0.000 | 38.460 | 0.513 | 60.474 | 0.000 | 65.000 | Divide for the maximum left and right distance for a minute | 17 |
| 0.000 | 28.059 | 0.513 | 90.526 | 0.419 | 94.790 | Test ran (20 m) from the high start. | 18 |
| 0.000 | 37.000 | 0.000 | 2.000 | 0.229 | 3.947 | Test ran (30 m) from the high start | 19 |
| 0.000 | 14.473 | 0.452 | 2.263 | 0.229 | 3.947 | Test ran (40 m) from the high start | 20 |
| 0.000 | 37.000 | 0.000 | 3.000 | 0.229 | 4.947 | Zaqzak ran | 21 |
| 0.000 | 37.000 | 0.000 | 6.000 | 0.229 | 7.947 | Multi-stream streaming | 22 |
| 0.000 | 18.000 | 0.000 | 12.000 | 0.229 | 12.947 | Slope winding (8) | 23 |

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| 0.000 | 25.107 | 0.943 | 18.000 | 0.612 | 24.474 | Shuttle Run | 24 |
| :--- | :--- | :--- | :--- | :--- | :--- | :--- | :--- |

Global battery-recovery (and kinetic) construction:
The matrix of 276 correlation coefficients (not computed to the diagonal cells) is shown in the matrix.
Table (5)
The values of the underlying roots and the percentage of variance and the cumulative variation of the results of the physical and motor tests under study

| Displays total contrast |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Values after rotation |  |  | Values before rotation |  |  | Initial self-values |  |  |  |
| $\overline{\%}$ <br> Cumulati ve percentage | \% <br> Importance of factors | \% Inkind values | $\overline{\%}$ <br> Cumulati <br> ve percentage | Importance of factors | \% In- <br> kind <br> values | $\overline{\%}$ <br> Cumulati <br> ve percentage | Importance of factors | Values in kind | Factors |
| 7.433 | 7.433 | 1.784 | 9.471 | 9.471 | 2.273 | 9.471 | 9.471 | 2.273 | 1 |
| 14.582 | 7.149 | 1.716 | 17.542 | 8.070 | 1.937 | 17.542 | 8.070 | 1.937 | 2 |
| 21.588 | 7.006 | 1.681 | 25.059 | 7.517 | 1.804 | 25.059 | 7.517 | 1.804 | 3 |
| 28.170 | 6.582 | 1.580 | 32.150 | 7.091 | 1.702 | 32.150 | 7.091 | 1.702 | 4 |
| 34.510 | 6.340 | 1.522 | 38.803 | 6.653 | 1.597 | 38.803 | 6.653 | 1.597 | 5 |
| 40.822 | 6.311 | 1.515 | 45.021 | 6.218 | 1.492 | 45.021 | 6.218 | 1.492 | 6 |
| 47.133 | 6.311 | 1.515 | 50.949 | 5.928 | 1.423 | 50.949 | 5.928 | 1.423 | 7 |
| 53.150 | 6.018 | 1.444 | 56.314 | 5.365 | 1.288 | 56.314 | 5.365 | 1.288 | 8 |
| 59.047 | 5.897 | 1.415 | 61.149 | 4.834 | 1.160 | 61.149 | 4.834 | 1.160 | 9 |
| 64.679 | 5.632 | 1.352 | 65.777 | 4.629 | 1.111 | 65.777 | 4.629 | 1.111 | 10 |
| 70.216 | 5.537 | 1.329 | 70.216 | 4.439 | 1.065 | 70.216 | 4.439 | 1.065 | 11 |
|  |  |  |  |  |  | 74.272 | 4.056 | . 973 | 12 |
|  |  |  |  |  |  | 78.095 | 3.823 | . 918 | 13 |
|  |  |  |  |  |  | 81.606 | 3.511 | . 843 | 14 |
|  |  |  |  |  |  | 84.746 | 3.140 | . 754 | 15 |
|  |  |  |  |  |  | 87.294 | 2.549 | . 612 | 16 |
|  |  |  |  |  |  | 89.769 | 2.474 | . 594 | 17 |
|  |  |  |  |  |  | 92.013 | 2.244 | . 539 | 18 |
|  |  |  |  |  |  | 93.763 | 1.751 | . 420 | 19 |
|  |  |  |  |  |  | 95.421 | 1.658 | . 398 | 20 |
|  |  |  |  |  |  | 96.805 | 1.384 | . 332 | 21 |
|  |  |  |  |  |  | 98.085 | 1.279 | . 307 | 22 |
|  |  |  |  |  |  | 99.169 | 1.085 | . 260 | 23 |
|  |  |  |  |  |  | 100.000 | . 831 | . 199 | 24 |

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Table (6) The global matrix of physical and motor tests under study before recycling

| The interpreter | P. 11 | P. 10 | P. 9 | P. 8 | P 7 | P. 6 | P. 5 | P. 4 | P. 3 | P. 2 | P. 1 | Measurement |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| . 719 | -.108- | -.351- | -.103- | . 102 | -.212- | . 199 | . 113 | . 026 | . 542 | -.178- | . 373 | A1 |
| . 735 | -.339- | . 143 | . 280 | . 348 | . 255 | -.028- | -.319- | -.219- | . 238 | . 341 | . 107 | B2 |
| . 695 | . 183 | . 076 | . 160 | . 041 | . 130 | . 512 | -. 173- | . 148 | . 250 | -.427- | .230- | C3 |
| . 650 | -.065- | -.030- | -.012- | -.426- | -.214- | -.307- | -.085- | . 299 | . 258 | . 075 | .393- | D4 |
| . 644 | . 254 | . 160 | . 449 | . 041 | -.221- | -.113- | -.062- | -.040- | . 188 | -.405- | . 290 | E5 |
| . 724 | -.017- | . 273 | -.267- | . 019 | . 054 | . 333 | . 313 | . 591 | . 002 | . 112 | . 064 | F6 |
| . 666 | -.270- | . 164 | . 072 | -.140- | -.331- | . 108 | -.276- | . 192 | . 233 | . 339 | . 371- | G7 |
| . 666 | . 018 | . 024 | . 076 | -.214- | . 014 | -.047- | . 180 | -.115- | . 729 | . 155 | .104- | H8 |
| . 802 | . 161 | -.326- | . 195 | -.367- | . 257 | -.078- | -.168- | . 397 | . 115 | -.082- | . 468 | 19 |
| . 731 | . 184 | . 159 | -.006- | . 414 | -.022- | . 023 | . 276 | . 575 | . 265 | . 085 | .125- | J10 |
| . 688 | . 055 | . 313 | -.097- | -.040- | -.004- | -.199- | -.335- | . 483 | -.137- | . 128 | . 395 | K11 |
| . 804 | -.040- | . 066 | . 254 | . 161 | -.057- | -.244- | . 504 | . 141 | -.128- | -.204- | .559- | L12 |
| . 595 | . 265 | . 127 | -.103- | . 051 | -.073- | . 150 | -.095- | -.120- | -.035- | . 552 | $\text { . } 371 \text { - }$ | M13 |
| . 706 | . 273 | . 511 | . 053 | -.094- | . 243 | -.121- | . 195 | -.250- | . 025 | -.057- | . 425 | N14 |
| . 785 | -.288- | -.164- | . 371 | . 269 | . 286 | . 104 | . 053 | . 358 | -.386- | . 206 | . 224 | 015 |
| . 701 | . 311 | -.423- | . 004 | . 034 | . 175 | -.451- | . 196 | . 184 | -.139- | . 167 | .265- | P16 |
| . 656 | . 114 | . 006 | -.103- | . 250 | . 346 | . 026 | -.132- | . 068 | . 321 | -.464- | .330- | Q17 |
| . 683 | . 085 | . 056 | -.247- | . 239 | -.427- | -.243- | . 328 | -.179- | -.018- | . 037 | . 414 | R18 |
| . 775 | -.098- | -.099- | . 173 | -.089- | -.558- | . 436 | . 184 | . 105 | -.300- | -.249- | . 139 | S19 |
| . 578 | . 128 | -.103- | -.064- | . 158 | -.206- | -.142- | -.199- | . 245 | . 265 | . 340 | . 417 | T20 |
| . 671 | -.336- | . 217 | -.149- | -.491- | . 272 | -.083- | . 291 | . 125 | -.043- | -.227- | . 116 | U21 |
| . 866 | . 417 | -.072- | . 161 | -.288- | . 115 | . 515 | . 147 | -.120- | -.139- | . 494 | . 006 | V22 |
| . 588 | -.163- | -.191- | -.350- | . 074 | . 314 | . 229 | . 337 | -.131- | . 237 | . 159 | . 183 | W23 |
| . 725 | . 125 | -.060- | -.471- | . 077 | -.006- | . 076 | -.507- | . 061 | -.274- | -.346- | .125- | X24 |
|  | 1.065 | 1.111 | 1.160 | 1.288 | 1.423 | 1.492 | 1.597 | 1.702 | 1.804 | 1.937 | 2.273 | The underlying root |

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Factor matrix after rotation:
Using the Varimax orthogonal rotation proposed by KESAR to increase the value of large spikes and reduce the value of small impurities through the dimensions of the axons that are not necessary to reach the best solution as shown in Table (7)

Table (7): The global matrix of tests under study after orthogonal rotation

| The interpreter | P. 11 | P. 10 | P. 9 | P. 8 | P 7 | P. 6 | P. 5 | P. 4 | P. 3 | P. 2 | P. 1 | Measurement |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| . 719 | . 465 | . 239 | . 179 | -.163- | . 051 | . 261 | . 291 | -.344- | -.021- | . 066 | . 329 | A1 |
| . 735 | . 046 | . 270 | -.366- | -.390- | -.151- | . 241 | -.532- | -.065- | . 066 | -.005- | .016- | B2 |
| . 695 | -.056- | . 064 | . 076 | -.180- | . 128 | -.018- | . 165 | . 035 | -.007- | . 777 | . 012 | C3 |
| . 650 | -.196- | -.195- | . 294 | . 253 | . 043 | . 129 | -.050- | -.067- | . 623 | -.001- | . 097 | D4 |
| . 644 | -.469- | . 165 | . 141 | -.133- | -.060- | . 289 | . 197 | -.272- | -.312- | . 151 | . 199 | E5 |
| . 724 | . 168 | -.252- | -.087- | -.093- | . 753 | -.069- | . 838 | . 142 | . 046 | . 018 | . 051 | F6 |
| . 666 | -.134- | . 087 | . 048 | -.248- | . 107 | . 105 | -.055- | . 119 | . 729 | -.007- | .074- | G7 |
| . 666 | . 194 | -.007- | . 396 | -.029- | . 021 | . 610 | -.197- | . 015 | . 195 | . 122 | . 082 | H8 |
| . 802 | -.042- | -.178- | -.145- | . 189 | -.041- | . 089 | . 058 | -.037- | -.067- | . 128 | . 822 | I9 |
| . 731 | -.012- | . 212 | -.042- | . 173 | . 772 | . 164 | -.045- | -.095- | . 042 | . 132 | .042- | J10 |
| . 688 | -.342- | -.095- | -.117- | -.167- | . 354 | -.273- | -.184- | -.060- | . 018 | -.249- | . 471 | K11 |
| . 804 | -.226- | -.122- | -.085- | . 468 | . 193 | . 231 | . 125 | -.183- | . 063 | . 114 | .596- | L12 |
| . 595 | -.017- | . 272 | . 125 | . 016 | . 097 | -.060- | -.221- | . 575 | . 226 | -.086- | .232- | M13 |
| . 706 | -.201- | -.248- | . 182 | -.220- | . 067 | . 201 | -.226- | . 106 | -.627- | -.130- | . 072 | N14 |
| . 785 | . 013 | -.005- | -.561- | . 063 | . 134 | . 015 | . 036 | . 011 | -.056- | -.056- | . 112 | O15 |
| . 701 | -.005- | . 080 | -.051- | . 510 | . 615 | -.006- | -.148- | . 058 | . 027 | -.088- | . 027 | P16 |
| . 656 | . 078 | . 056 | . 164 | . 107 | . 101 | -.113- | -.245- | -.293- | -.072- | . 649 | .113- | Q17 |
| . 683 | . 081 | . 207 | . 248 | -.041- | . 138 | . 051 | . 177 | -.220- | -.332- | -.596- | .058- | R18 |
| . 775 | -.088- | . 015 | -.116- | -.189- | . 021 | -.035- | . 842 | . 010 | . 025 | -.052- | .062- | S19 |
| . 578 | . 031 | . 383 | . 031 | -.069- | . 229 | . 669 | -.110- | -.061- | . 077 | -.312- | . 499 | T20 |
| . 671 | . 090 | -.594- | . 020 | -.049- | . 643 | . 061 | . 013 | -.138- | -.034- | -.033- | . 047 | U21 |
| . 866 | . 103 | . 039 | -.058- | . 019 | -.020- | . 160 | . 153 | . 883 | -.096- | . 040 | . 106 | V22 |
| . 588 | . 717 | -.095- | -.006- | -.046- | . 092 | . 117 | -.101- | . 054 | -.164- | -.033- | . 012 | W23 |
| . 725 | -.031- | . 068 | . 162 | -.027- | -.066- | -.793- | . 004 | -.106- | . 031 | . 209 | . 047 | X24 |


| 1.329 | 1.352 | 1.415 | 1.444 | 1.515 | 1.515 | 1.522 | 1.580 | 1.681 | 1.716 | 1.784 | The underlying root |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 5.537 | 5.632 | 5.897 | 6.018 | 6.311 | 6.311 | 6.340 | 6.582 | 7.006 | 7.149 | 7.433 | Contrast Ratio |
| 70.216 | 64.679 | 59.047 | 53.150 | 47.133 | 40.822 | 34.510 | 28.170 | 21.588 | 14.582 | 7.433 | Cumulative percentage |

Table (8): Represents the descending order of the first factor after rotation

| Saturation | Name of test | sequence |  |
| :---: | :---: | :---: | :---: |
| . 822 | Test the pull of the forearm by 15 seconds | 1 | First factor: |
| -.596- | Front leaning for min | 2 |  |
| . 471 | Test the hatch for the maximum distance of 10th left and right | 3 |  |
| . 777 | Throw a handball to the farthest distance | 1 | Factor 2: |
| . 649 | Divide for the maximum left and right distance for a minute | 2 |  |
| -.596- | Test ran (20 m) from the high start | 3 |  |
| . 729 | Tri-jump test with feet exchange of stability | 1 | Factor 3: |
| -.627- | Drag on the mind for a minute | 2 |  |
| . 623 | Vertical Jump Test - Sargent | 3 |  |
| . 883 | Multi-stream streaming | 1 | Factor 4: |
| . 575 | This factor has been neglected because it did not meet the conditions for interpreting the factors |  |  |
| . 842 | Test ran (30 m) from the high start | 1 | Factor 5: |
| . 838 | Vertical jump test for higher rate | 2 |  |
| -. 532 | Throw a medical ball from sitting on a chair with arms | 3 |  |
| -.793- | Shuttle Run | 1 | Factor 6: |
| . 669 | Test ran (40 m) from the high start | 2 |  |
| . 610 | Test the front and press 15 seconds | 3 |  |
| . 772 | Medical Ball Throw Test | 1 | Factor 7: |
| . 615 | Jump the two legs for the longest distance repeatedly | 2 |  |
| . 643 | Zaqzak ran | 3 |  |
|  | This factor was neglected because it was not satisfied with any physical and motor tests and tests that were saturated with this factor were neglected because of their saturation with greater impurities on other factors. |  | Factor 8: |

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| $-.561-$ | Jumping up the successive place for a minute has been <br> neglected this factor because it did not meet the conditions <br> of interpretation of factors | 1 | Factor 9: |
| :--- | :--- | :--- | :--- |
|  | This factor was neglected because it was not satisfied with <br> any physical and motor tests and tests that were saturated <br> with this factor were neglected because of their saturation <br> with greater impurities on other factors. |  |  |
| Slope winding (8) | Factor X: |  |  |
| .717 | Test the wide jump of stability | Factor 11: |  |
| $-.469-$ | Throw a medical ball to the farthest distance by one arm | 3 |  |
| .465 |  |  |  |

Ultimate battery extracted for physical and motor abilities:
Table (9): Shows the final battery units and their radiations on the factors

| Saturation | Name of test | Test code | Sequence of <br> the agent |
| :--- | :--- | :--- | :--- |
| .822 | Test the pull of the forearm by 15 seconds | I9 | 1 |
| .777 | Throw a handball to the farthest distance | C3 | 2 |
| .729 | Tri-jump test with feet exchange of stability | G7 | 3 |
| .838 | Vertical jump test for higher rate | F6 | 5 |
| $-.793-$ | Shuttle Run | X24 | 6 |
| .772 | Medical Ball Throw Test | J10 | 7 |
| .717 | Slope winding $(8)$ | W23 | 11 |

In order to demonstrate that each test in the extracted battery measures a capacity independent of the other capabilities, a test was adopted. In addition to the above, the researchers adopted another test, the alienation factor, as shown in Table (18)

Table (10): It shows the links between the physical and mobile battery factors

| الاختبارات |  |  |  |  |  |  | تسلسل الاختبار |  | Factor |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| W23 | J10 | X24 | F6 | G7 | C3 | I9 |  |  |  |
| 0.189 | 0.222 | 0.110 | 0.107 | 1.00 | 0.298 | 1.000 | Linking | I9 | 1 |
| 0.989 | 0.989 | 0.993 | 0.994 | 0.994 | 0.954 |  | Exile |  | 2 |
| 0.111 | 0.153 | 0.144 | 0.184 | 0.278 | 1.000 | - | Linking | C3 | $\begin{aligned} & 3 \\ & 5 \end{aligned}$ |
| 0.994 | 0.989 | 0.989 | 0.983 | 0.960 |  |  | Exile |  |  |


| 0.211 | 0.111 | 0.111 | 0.151 | 1.000 | - | - | Linking | G7 | 6 <br> 7 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 0.979 | 0.974 | 0.992 | 0.988 |  |  |  | Exile |  |  |
| 0.187 | 0.199 | 0.111 | 1.000 | - | - | - | Linking | F6 | 111 |
| 0.984 | 0.984 | 0,979 |  |  |  |  | Exile |  |  |
| 0.144 | 0.122 | 1.000 | - | - | - | - | Linking | X24 | 23 |
| 0.989 | 0.994 |  |  |  |  |  | Exile |  |  |
| 0.200 | 1.000 | - | - | - | - | - | Linking | J10 | 5 |
| 0.989 |  |  |  |  |  |  | Exile |  |  |
| 1.000 | - | - | - | - | - | - | Linking | W23 | 11 |
|  |  |  |  |  |  |  | Exile |  |  |

Discuss the tests from the global analysis:
Special physical and motor abilities are the goals of the players in sport in general and handball in particular, because the possession of handball for the abilities of the subject of research is one of the conditions of the game, especially that this target group is in a good stage of acquisition both physically and dynamically as well as the acquisition leads to the development of skills The mobility of the player as well as the plans and methods of play without them become the possibility of achieving the vocabulary of achievement is difficult, but may be impossible and show the importance of physical and motor capabilities, both public and private, linked to many vital areas such as intelligence and social achievement and maturity Emotional and physical strength, human production, physical and mental health, social growth, adaptation, late fatigue, stress, geriatric diseases, good use of spare time and unexpected emergency response.

The physical characteristics of the special play a crucial role in the implementation of the duties of the skills based on these qualities, and as the requirements of the game of handball is many and over two halves, the player must have some abilities and physical qualities and mobility to be able to solve the duties of the skill and planning and psychological strength and speed and handling and agility For some of the kinetic skills throughout the duration of the game, the physical preparation of the handball is the second stage of the player's preparation phase. This stage lasts from (4-6) weeks and is heavily based on the first stage of the preparation stage and the training To the specific specialization of the handball game, and is working on the development of fitness, taking into account the development of special muscle groups, which are more used in the game. "(Oreibi, 2004, page 208(

After the application of the tests on the rationing sample, the researcher extracted some descriptive statistics as shown in Table (19) and then extracted the standard degrees of the physical physics derived. The researchers extracted the Z-grade from the law used in the case of the unit of measurement of the test (time) and the equation as follows - the crude / standard deviation) and then this equation was introduced by extracting the standard score (T). (Hassanein, 2004, p. 154)

Table (11) shows the descriptive statistics of the research sample

| Torsion <br> coefficient | P | s | measruin <br> g unit | Physical measurements | seq <br> uen <br> ce |
| :--- | :--- | :--- | :--- | :--- | :--- |
| .192 | 1.5128 | 4.8000 | Repetitio <br> n | Test the pull of the forearm by 15 seconds | 1 |

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| $-.013-$ | 1.7610 | 30.6125 | cm | Throw a handball to the farthest distance | 2 |
| :--- | :--- | :--- | :--- | :--- | :--- |
| $-.169-$ | 1.6921 | 14.6500 | Repetitio <br> n | Tri-jump test with feet exchange of stability | 3 |
| .086 | 1.5325 | 30.9250 | cm | Vertical jump test for higher rate | 4 |
| .147 | 1.9550 | 21.7250 | a second | Shuttle Run | 5 |
| $-.198-$ | 2.6572 | 21.4500 | Repetitio <br> n | Medical Ball Throw Test | 6 |
| $-.213-$ | 1.3834 | 12.1000 | a second | Slope winding $(8)$ | 7 |

Table (12): Shows the standard scores (ZA and T)

| T | Z | Raw | T | Z | Raw | the test |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 57.93 | 0.79 | 6 | 38.1 | -1.19- | 3 | Pull the forearm with the arms 15 seconds |
| 64.54 | 1.45 | 7 | 44.71 | -0.53- | 4 |  |
|  |  |  | 51.32 | 0.13 | 5 |  |
| 52.2 | 0.22 | 31 | 35.16 | -1.48- | 28 | Throw a handball to the farthest distance |
| 57.88 | 0.79 | 32 | 40.84 | -0.92- | 29 |  |
| 63.56 | 1.36 | 33 | 46.52 | -0.35- | 30 |  |
| 52.07 | 0.21 | 15 | 34.34 | -1.57- | 12 | Triangular jump with the exchange of feet of constancy |
| 57.98 | 0.8 | 16 | 40.25 | -0.98- | 13 |  |
| 63.89 | 1.39 | 17 | 46.16 | -0.38- | 14 |  |
| 57.01 | 0.7 | 32 | 37.44 | -1.26- | 29 | Vertical Jump Up Rate |
| 63.54 | 1.35 | 33 | 43.96 | -0.60- | 30 |  |
|  |  |  | 50.49 | 0.05 | 31 |  |
| 43.48 | -0.65- | 23 | 63.94 | 1.39 | 19 | To test the shuttle runway |
| 38.36 | -1.16- | 24 | 58.82 | 0.88 | 20 |  |
| 33.25 | -1.68- | 25 | 53.71 | 0.37 | 21 |  |
|  |  |  | 48.59 | -0.14- | 22 |  |
| 48.31 | -0.17- | 21 | 33.25 | -1.67- | 17 | Medical Ball Throw Test |
| 52.07 | 0.21 | 22 | 37.02 | -1.30- | 18 |  |
| 55.83 | 0.58 | 23 | 40.78 | -0.92- | 19 |  |
| 59.60 | 0.96 | 24 | 44.54 | -0.55- | 20 |  |
| 63.36 | 1.34 | 25 |  |  |  |  |
| 43.49 | -0.65- | 13 | 65.18 | 1.52 | 10 | Slope winding (8) |



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