Appendices

Appendix A

Letter of Permission

Prof. Umeshraj Padamraj Paneru
Director of Physical Education
Annasaheb Waghire College, Otur.

To,
The secretary,
Maharashtra Handball Association,
Bhandara.

Subject: Regarding Permission and co-operation for data collection…..

Respected Sir,

With above cited subject I am bonafied student of Chandrashekhar Agashe College of Physical Education and Research center, I am working as Director of physical Education in P.D.E.A’S Annasaheb Waghire College, Otur. Due to the enthusiastic interest in Handball, I have decided to conduct a research in the field of Handball. I am doing my Ph. D. Studies related to senior Handball players and hence would like your help and cooperation from you. As a part of the study I have to conduct Tests on senior Handball players. I would like you to permit me to conduct the tests on the players. The topic of this study is “Development of Norms for Selection of Senior Male Maharashtra State Handball Players” The research is going to help for selection of senior Handball player of Maharashtra.

So kindly give me permission and possible help for data collection during Maharashtra State Handball Championship. Hoping for your kind consideration.

Thanking you.

Yours faithfully,

Mr. Umeshraj P. Paneru
Appendix B
College Permission Letter for Data collection

Chandrashekhar Agashe College of Physical Education, Gultekadi, Pune- 37

CAU/Ph.D.259/2009-10          Date: 10/12/2009

To,
The secretary,
Maharashtra Handball Association,
Sir/ Madam,
As per their Research work, our students are requested to collect data from your institution.
In this regard, we request your co-operation in providing the necessary information to our student of this college.
Name of the students:    Shri- Paneru Umeshraj
Course:    Ph. D. (Physical Education)
Date of Registration:   19th June, 2008.

Thanking You.

Yours Faithfully,

Dr. Nayana Nimkar
Appendix C
Acknowledgement letter

Prof. Umeshraj Padamraj Paneru
Annasaheb Waghire College, Otur
paneru. umesh@gmail.com
Ph.No. 9405019623

To,
The secretary,
Maharashtra state Handball Association,
Bhandara.

Subject: Acknowledgement letter

Respected Sir,

I Umeshraj Padamraj Paneru now am working as Director of Physical Education at Annasaheb Waghire College, Otur. I was completed my data collection on senior handball Players of Maharashtra during 38th state championship at Latur.
I will again come for data collection in next senior handball championship hope for similar positive response and support from your side. I am very thankful to you for allowing me to conduct the test on the players during competitions. This research would helpful to players and coaches, selection committee allied to my subject and I would be grateful if I would be of any help to you or association. I would personally come to meet you as soon as possible.
I am again thankful for your grate support and help and valuable time during data collection.

Thanking you.

Your sincerely,

Prof. Umesh .P. Paneru
### Appendix D

**List of Experts**

<table>
<thead>
<tr>
<th>Sr.No</th>
<th>Name of the expert</th>
<th>Designation and Address</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>Dr. Sopan Kangne</td>
<td>Redder, Chandrashekh Har Agashe College, Pune</td>
</tr>
<tr>
<td>2</td>
<td>Prof. Hemant Patil</td>
<td>Assistant Professor Pimpalgaon</td>
</tr>
<tr>
<td>3</td>
<td>Dr. Sudam Shelake</td>
<td>Associate Professor Shahu college Pune</td>
</tr>
<tr>
<td>4</td>
<td>Dr. Ameet Prabhu</td>
<td>Assistant Professor and national player Chandrashekh Har Agashe College, Pune</td>
</tr>
<tr>
<td>5</td>
<td>Prof. Yogesh Bodake</td>
<td>Assistant Professor and national Player Chandrashekh Har Agashe College, Pune</td>
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<tr>
<td>6</td>
<td>Mr. Shailes Bhagat</td>
<td>Principal, NIS Coach Krida probodhini Nagpuar</td>
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<td>7</td>
<td>Prof. Ashok Rajput</td>
<td>Secretary Maharashtra Handball Association</td>
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<tr>
<td>8</td>
<td>Mr. Vaibhav Wagh</td>
<td>International Player</td>
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<tr>
<td>9</td>
<td>Mr. Satish Dhodgde</td>
<td>National Player</td>
</tr>
<tr>
<td>10</td>
<td>Mr. Ajit Kakar</td>
<td>Air Force Handball team Coach</td>
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Appendix E

List of professional qualified technical assistance

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<tr>
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<td>Mr. Dnyaneswar Chimte</td>
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<td>4</td>
<td>Mr. Santosh Pacharane</td>
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<td>5</td>
<td>Mr. Ajay Dethe</td>
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<td>Mr. Dhairashell Deshmukh</td>
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<td>Mr. Manish Boraste</td>
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<td>8</td>
<td>Mr. Vikas Khelukar</td>
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<td>9</td>
<td>Mr. Ganesh Konde</td>
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<td>10</td>
<td>Mr. Umesh Bibve</td>
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Appendix F

Score sheet for the data collection

Name of Player:……………………………...  Date of Birth:…………………………
Address:…………………………………….. District:…………………………
Playing Position:…………………………....  Age:……………………………
No. of Participation at state:………………..  National:………………………….

1. Morphological Tests

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<thead>
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<th>Standing Height</th>
<th>Body Weight</th>
<th>Waist</th>
<th>Hip</th>
<th>Waist hip ratio</th>
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2. Physical Fitness Test

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<th>12 min un/walk</th>
<th>50 m dash</th>
<th>Shuttle Run</th>
<th>S.B.J.</th>
<th>Vertical Jump</th>
<th>Sit &amp; reach</th>
<th>Sit Ups</th>
<th>Push Ups</th>
<th>Gripe test</th>
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3. Handball Skill Test

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<tr>
<td>Accuracy Throw</td>
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<td>Speed pass</td>
<td>Trail 1</td>
<td>Trail 2</td>
<td>Total of two Trail</td>
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<tr>
<td>Agility Dribbling</td>
<td>Trail 1</td>
<td>Trail 2</td>
<td>Best Time</td>
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<tr>
<td>Footwork</td>
<td>Trail 1</td>
<td>Trail 2</td>
<td>Best trail</td>
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Signature of Investigator  Signature of Student
Handball is played on a court forty meters long by twenty meters wide (40m x 20m), with a dividing line in the middle and a goal in the center of either end. The goals are surrounded by a near-semicircular line that is generally six meters (6m) away from the goal. There is also a dashed near-semicircular line that is nine meters (9m) away from the goal. After a goal has been scored, the team conceding the goal restarts the game. Their players move to the center line. Once a player has the ball under control the referee will blow his whistle to restart play. All players of the team which are restarting the play must be behind the line on their own half or else the restarting throw will have to be retaken. Only the defending goalkeeper is allowed to step inside the six meter (6m) perimeter, though any player may attempt to catch and touch the ball in the air within it. If a player should find himself in contact inside the goal perimeter he must immediately take the most direct path out of it. Should a defender make contact with an attacker while in the goal perimeter, their team is penalized with a direct attempt at the goal, with only one attacker on the seven-meter line and the defending goalkeeper involved. The ball is smaller than a football in order for the players to be able to hold and handle it with a single hand (though contact with both hands is perfectly allowed). Some American versions use volleyball. It is transported by bouncing it between hands and floor much as in basketball. A player may only hold the ball for three seconds and may only take three steps with the ball in hand. After taking three steps the player will have to make a dribble with one hand in order to continue moving forward, but if the ball is held in both hands after making a dribble and the player makes another dribble, a free throw will be given to the other team for a "double dribble". There are many unofficial rule variations; a common American version allows only a single step with the ball, after which the player must pass the ball to another teammate or shoot. Ball movement and possession is similar to basketball. If the attacker commits an infraction, such as charging, the possession of the ball can be awarded to the defending team. Players may also cause the possession to be lost if they make more than three steps without dribbling or after stopping their dribble. However unlike basketball, the player may take three steps instead of two (pivoting on one foot is considered a step) and the ball must be "patted" down instead of the more controlled basketball method.
**Game play:** Standard match duration consists of two periods of 30 minutes each during which each team may call one time-out. Normal league games are usually allowed to end in a draw, but in knockout tournaments, such as the of the Olympics, two extension periods of 5 minutes are played, and if they also end in a draw another two times 5 minutes has to be played. If each of these ends in a tie after the extra time the winner is determined by an individual shootout from the 7-meter line, where each team is given five shots. The rules of the shootout is similar to the one of soccer, where, if a winner is not found within the first ten shots, the players return to the shooting, until one team has missed and the other scored. In two Olympic Finals of women's handball penalty shootout had to be used - both of them with Denmark participating (against Hungary in 1996 and South Korea in 2004); and both of them with Denmark as the winner. The game is quite fast and includes body contact as the defenders try to stop the attackers from approaching the goal. Only frontal contact by the defenders is allowed when a defender stops an attacker with his or her arms instead of his or her torso, the play is stopped and restarted from the spot of the infraction or on the nine meter line, with the attacking team in possession. The usual formations of the defences are the so-called 6-0, when all the defence players are within the 6 meter and 9 meter lines the 5-1, when one of the players cruises outside the 9 meter perimeter, usually targeting the center forwards; and the least common 4-2 when there are two such defenders. The usual attacking formation includes two wingmen, a center-left and a center-right which usually excel at high jumps and shooting over the defenders, and two centers, one of which tends to intermingle with the defence (also known as the pivot or line player, somewhat similar to the hole set (2-meter) in water polo), disrupting the defences formation, and the other being the playmaker (similar to basketball). The formations are very variated from country to country. The most common formation for the central European teams as well as the Scandinavian teams is 6-0, but it can alternatively be extended to a 5-1, if you want a man (usually the far wing is placed as a disturbance for the other team in the middle in front of the 9-meter perimeter) to disturb the play of the other team. Even more different the Ukrainian teams “HC Motor Zaporyshe” tends to play. As their basis of play they play a 3-3 formations with man marking all over their defensive area, which can make it really difficult for the attacking team to make any open chances. Primarily this formation is used by teams outside Eastern Europe only when behind with a few goals with a few minutes left, in the attempt to steal the ball faster. Goals
are much more common in handball than in most other sports usually, both teams score at least 20 goals and it is not uncommon to have a match end (say) 33-31. This was not true in the earliest days, when the scores were more akin to that of ice hockey, but as offensive play (in particular in terms of counterattacks after a failed attack from the other team) has improved, more and more goals have been scored after each match.

**Penalties:**
Penalties are given to players, in progressive format, if the contact between the players is particularly rough (even if it is indeed frontal) the referees may award a nine-meter free throw to the attacking team, or if the infraction was during a clear scoring opportunity, a seven-meter penalty shot is given. In more extreme cases they give the defender a yellow card (warning), a 2-minute penalty, or a red card (permanent expulsion). For rough fouls they can also order two-minute expulsions and a red card expulsion without having to warn the player, if a player insults the referee - either by touching him with the intention to push or with verbal abuse, or if a player kicks or hits an opponent deliberately, the referee can expel the player forming a cross over his head with his arms, which will tell the player that he/she will have to leave the game hall completely. Either a red card or an expulsion will if the referee does not regret his decision within twenty-four hours result in a quarantine for the player shown out. A team can only get three warnings (yellow cards); after that they will only be able to be penalised with 2-minute suspensions. One player can only get three 2-minute suspensions after that he/she will be shown the red card, and cannot participate in that game anymore. A red card from three 2-minute suspensions does not result in quarantine, such as a red card is a good thing. A Coach/Official can also be penalised progressively. After a yellow card and a 2-minute suspension, the red card is shown straight out, and unlike players, coaches cannot be shown a complete expulsion, but of course also be given match quarantine. When shown a 2-minute suspension a coach will have to pull out one of his players for two minutes - note: the players is not the one punished and can be substituted in again, because the main penalty is the team playing with a man less than the other. After having lost the ball during an attack, the ball has to be laid down quickly or else the player not following this rule will face a 2-minute suspension. Also gesticulating or verbally rejecting to follow the referee's order, as well as arguing with his/her decisions, will normally result in a 2-minute suspension. Alternatively, if it is done in
a very provocative way, a player can be given a 2-minute suspension if he/she does not walk straight out on the bench after been given a suspension, or if the referee considers the tempo deliberately slow.

**Advantage:** Refers to a referee's decision to not award a free throw or penalty throw to an attacking team that has been fouled if a better scoring opportunity would result from play continuing.

**Backline:** A line extending across either end of the court outside the goal posts. Also called the outer goal line.

**Centre Line:** The line dividing the court into two halves.

**Corner Throw:** A throw taken by the attacking team from a corner in the opponent's end, after a defender other than the goalkeeper has directed the ball over the back line.

**Court:** The term for the team handball playing area.

**Court Player:** A player other than a goalkeeper. Also known as a field player.

**Disqualification:** The expulsion of a player from the game for a serious infraction, indicated when the referee issues a red card. The offending player's team must also serve a two-minute suspension.

**Dribble:** To move with possession of the ball by bouncing it off the floor.

**Exclusion:** The expulsion of a player from a game for abusive action a player takes against an opponent or a referee. The offending player's team must play the rest of the game a player short.

**Extra Time:** Two five-minute periods played if the game is tied after regulation time.

**Field Player:** A player other than a goalkeeper. Also known as a court player.

**Four-meter Line:** The line four meters in front of a goal marking the furthest a goalkeeper may venture from the goal during an opponent's penalty throw. Also called the goalkeeper's restraining line.

**Free Throw:** A throws awarded to a team after a minor infraction committed by the opponent. The throw is taken from the spot where the infraction took place or from the nine-meter line, with defenders standing at least three meters away.

**Free-throw Line:** The dotted arc nine meters from the goal from which an attacking team takes a free throw when fouled inside the line. Also called the nine-meter line.

**Goal Area:** The area in front of the goal outlined by an arcing line six meters from the goal.

**Goal area Line:** The arc that outlines the goal area at a distance of six meters from the goal. Also called the six-meter line.
**Goal Line:** The line between the goal posts which the ball must cross completely for a goal to be scored.

**Goal Throw:** A throw-in taken by a goalkeeper after the goalkeeper or an opponent has directed the ball over the back line.

**Goalkeeper:** The player stationed in the goal area to prevent the opposition from scoring.

**Goalkeeper's restraining line:** The line four meters in front of a goal marking the furthest a goalkeeper may venture from the goal during an opponent's penalty throw. Also called the four-meter line.

**Green card:** Used by a team to request a time out.

**Jump shot:** A shot taken by a player leaping above defenders.

**Nine-meter line:** The dotted arc nine meters from the goal from which an attacking team takes a free throw when fouled inside the line. Also called the free-throw line.

**Outer goal line:** A line extending across the either end of the court outside the goal posts. Also called the "back line".

**Penalty line:** A line one meter wide, seven meters in front of the goal from which penalty throws are taken. Also called the seven-meter line.

**Penalty throw:** A shot taken from a line seven meters from the goal and defended only by the goalkeeper, awarded for serious infractions or illegal disruption of scoring chances. Also called a seven-meter throw.

**Pivot:** A playmaking midcourt player who directs the offence and tries to penetrate the defiance.

**Red card:** Issued by the referee to eject a player from the game.

**Referee-throw:** A ball the referee throws into the air between two players who can play it only after it reaches its highest point. Taken only when neither team is to blame for the ball going out of play.

**Seven-meter throw:** A shot taken from a line seven meters from the goal and defended only by the goalkeeper, awarded for serious infractions or illegal disruption of scoring chances. Also called a penalty throw.

**Seven-meter line:** A line one meter wide and seven meters in front of the goal from which penalty throws are taken. Also called the penalty line.

**Shoot-out:** A tie-breaker in which players try to determine a winner by taking penalty throws. Invoked if a game remains tied after extra time.
Six-meter crease: The arc that outlines the goal area at a distance of six meters from the goal. Also called the goal area line.

Suspension: The expulsion of a player from the game for a period of two-minutes for a serious infraction or unsportsmanlike conduct, usually following a warning.

Team time-out: one-minute stoppage in play requested by a team with a green card.

Throw-in: Awarded to a team after the opposing team has put the ball out of bounds over the sideline or when the defending team directs the ball over its own back line. The throw is taken from the spot where the ball left the court, except in the case of corner throws.

Throw-off: A throw taken by a player at the centre line to a teammate behind the line, used to begin play at the beginning of each half or after a goal.

Time-out: An interruption of play called at the referee's discretion and indicated with three short blows of the whistle, while he or she makes a "T" with the hands.

Wing: A player who usually plays along the sides of the court.

Yellow card: Issued by the referee to warn a player about an infraction.
Appendix H
Skill Test Diagrams

1) Diagram of front shoot

---50cm---  ---200cm---  ---50cm---

Fig. 1
Front Shoot Test
2) Diagram of accuracy throw

Fig.3.2 Accuracy Throw Test Diagram
3) Diagram of Speed Pass

![Fig.3.3 Speed Pass Diagram](image)

4) Diagram of agility dribbling

![Fig.3.4 Agility Dribbling Diagram](image)
5) Diagram of footwork

Fig.3.5. Footwork Test Diagram