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ORIGINAL

THE PERCEPTION FEMALE BASKETBALL PLAYERS WHO PLAY INTERNATIONALLY HAVE ABOUT THEIR DECISION MAKING

PERCEPCIÓN DE LAS JUGADORAS INTERNACIONALES DE BALONCESTO SOBRE SU TOMA DE DECISIONES

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ABSTRACT

In sport science, there is a lot of interest in researching the cognitive processes of athletes. Therefore, the present study attempts to analyse the decision making of high-level players through the perception that they have about their

formative process and, especially, in the tactical situations of offence related to 1-on-1 and 2-on-2 actions. The sample from this study is composed of 12 female players selected for the national team. The players were interviewed in regard to decision making in competition and their actions in 1-on-1 and 2-on-2 offence situations. The players are conscious of the importance of decision making. Differences between inside and outside players were found, and proposals for formation or development in this area are offered.

KEY WORDS: Decision making, women´s basketball, high-level competition.

RESUMEN

En las Ciencias del Deporte, existe gran interés por investigar los procesos cognitivos de deportistas. Por tanto, se pretende analizar la toma de decisiones en jugadoras de máximo nivel a través de la percepción que tienen sobre su formación y particularmente en las situaciones tácticas de ataque vinculadas a las acciones de 1x1 y 2x2. La muestra de la investigación está compuesta por 12 jugadoras seleccionadas para formar el equipo nacional. Se han utilizado entrevistas a las jugadoras, relacionadas con la toma de decisiones en la competición y con su actuación en las situaciones de ataque de 1x1 y 2x2. Las jugadoras son conscientes de la importancia de la toma de decisiones. Se encuentran diferencias entre exteriores e interiores y se ofrecen propuestas de formación en este ámbito.

PALABRAS CLAVE: Toma de decisiones, baloncesto femenino, alta competición.

1. INTRODUCTION

The study of decision making in sport is a fascinating topic due to the difficulty in studying it (Ruiz & Jiménez, 2006) as well as to being one of the most important aspects in numerous sportive specialties (Sáenz-López, Ibáñez, Giménez, Sierra & Sánchez, 2005). García, Ruiz, and Graupera (2009) denominate the sports in which there is a lot of decision making in a short time, sports of decisional preference. In this classification, basketball is placed as a sport utilising cooperation and opposition in which the motor actions that are carried out are fruit of a mental process that involves the abilities of perception and decision making (Águila & Casimiro, 20001; Tavares, 2002; Ruiz & Arruza, 2005).

The study of the characteristics and elements related to decision making and technical-tactical actions has opened a line of research that is of great interest in the sport sciences (Ruiz & Arruza, 2005). These authors highlight the need for carrying out studies that provide information about how athletes make decisions and how to best carry out their formative process.

Decision making is a cognitive element that is present in many or almost all circumstances in life (Dixit & Nalebuff, 1992). We make decisions, for example, about what types of food to eat, where to spend a free afternoon, what studies to undertake, and what sport to practice. All these actions have a person that selects and decides something, once he or she has perceived what is involved from a group of actions (Georges, 1993).

Therefore, we could define decision making as *"the mental process by which the person, after perceiving the surroundings, selects and plans a suitable response, compatible with the environment where it is found. This decision making is manifested through an action that can be compared with the objective or pattern that was initially proposed"* (Jiménez, 2007: 30).

Whenever a decision is made, there should be a number of options; which is to say, there have to be a number of alternatives in order to be able to choose, given that if there were not all these choices, the ability to decide would be insignificant. Another aspect to consider is the level of risk that is involved in making a decision. If the risk is high, the doubts and questions in the selection could be high, as well as the probability for error. Rumiati (2001) points out a third aspect, which refers to whether the person that decides something does it deliberately, which is to say, consciously. There are other elements to consider in regard to decision making, such as the fact that the level of knowledge that a person has is important in making a good decision. On the other hand, García, Ruiz and Graupera (2009) make reference to the influence of the feeling of satisfaction and confidence in a person´s own possibilities.

1.1. Decision making in sport

The majority of authors that have researched the cognitive processes in the realm of sport coincide in the importance of making correct decisions (Ruiz & Arruza, 2005; Cárdenas, 2003; Araújo & Esteves, 2009). Therefore, one of the indispensible factors for making a good decision is the ability to perceive (Tenenbaum & Bar-Eli, 1993). Perception is the starting point, since it is the mechanism where the channel of information begins, which ends in an observable action. Perception is a mental function intentionally related to detection, discrimination, comparison, recognition, and identification of stimuli (García-Albea, 1999).

Numerous studies have oriented their research in the area of perception in sport from various perspectives: perception and vision, expert athletes and their perceptive ability with regard to the most inexpert athletes, and anticipation in sport (Abernethy, 1991; Cárdenas, 2003; Castejón, 2002a; Ripoll, 1988; Ruiz & Arruza, 2005; Sampedro, Lorenzo & Refoyo, 2001; Tenenbaum, Yuval, Elbaz, Bar-Eli & Weinberg, 1993).

The perceptive ability of the athlete to focus on something that is relevant and ignore the information that is not important is crucial (Jiménez, 2007). This

aspect can allow the player to anticipate what will happen. This author observes that the ability to adjust the action with regard to the circumstances and to be able to evaluate whether the action was correct or not closes the cycle of cognitive components that are developed. Attention and memory fulfil an important role in the process as a whole.

1.2. Decision making in basketball

Basketball is a team sport in which the rhythm of the actions is rapid and dynamic, and it is necessary to perceive the situations that arise in the game with much clarity. It is very important to make the correct decisions, in spite of the short time that is available in most situations. Further, there are stages of large interaction between teammates and opponents, with the goal of achieving the objective of the game, and there are constant actions derived from decisions about what to do and when to do it. The activation of cognitive processes such as perception and decision making is necessary as it allows for the selection of the technical action that is appropriate at each step (Águila & Casimiro, 2001; García, Ruiz & Graupera, 2009; Iglesias, Moreno, Ramos, Fuentes, Julián & del Villar, 2002; Tavares, 2002; Jiménez, 2007).

Recent studies in basketball have looked at multiple elements related to cognitive processes, with a more or less direct relationship with decision making. Ruiz and Arruza (2005) carried out a detailed analysis about decision making among athletes and how to optimise this process in the development of training sessions.

The uncertainties regarding creating, becoming familiar with, and applying teaching models in basketball and technique that involve the acquisition and improvement of decision making are very important, and they offer clarity to instructors on how to obtain improvement during the game (Cárdenas & Pintor, 2001; Castejón & López, 2000; Dupré, 2001; Giménez & Sáenz-López, 2000; Hernández, 2001; Ibáñez, 2000; Iglesias, Cárdenas & Alarcón, 2007; Olivera, 2001; Sáenz-López, 2000; Tavares, 2002; Temprado, 1992; Temprado & Alain, 1999; Temprado & Famose, 1999).

The studies related to knowledge in basketball have tried to assess what degree of relationship exists between declarative and procedural knowledge, and what differences exist between beginners and those with more expertise (French, Nevett, Spurgeon, Graham, Rink & McPherson, 1996; French & Thomas, 1987; Temprado, 1992; Temprado & Alain, 1999; Temprado & Famose, 1999; Tenenbaum, Yuval, Elbaz, Bar-Eli & Weinberg, 1993; Thomas, French & Humphries,1986).

Regarding experts, their characteristics, how they make decisions, how they optimise their performance, and, in many cases, what differences and similarities exist between them and novice athletes, they are often sources of research in basketball (Abernethy, 1989; Buscá, Pont, Artero & Riera, 1996;

Castejón, 2002b; French, Spurgeon & Nevett, 1995; García, Ruiz & Graupera, 2009; Iglesias, Moreno, Ramos, Fuentes, Julián & Del Villar, 2002; Lorenzo, 2003; Moreno, Fuentes, Del Villar, Iglesias & Julián, 2003; Ripoll, 1988; Sáenz-López, Giménez, Ibáñez & Jiménez, 2007; Ruiz & Jiménez, 2006; Tavares, 2002).

1.3. 1-on-1 and 2-on-2 game situations in basketball

During a basketball game, there are numerous strategies and tactics that involve all five players, through developing different offensive or defensive systems. Authors such as Cárdenas and Pintor (2001) and Giménez and Sáenz-López (2000) believe that the optimal resolution of 1-on-1 and 2-on-2 situations in necessary to beat an opponent. These situations are very numerous. It is necessary for the players to have knowledge about the regulations and multiple technical resources on offence, with tactical resources that are, logically, related to the abilities of perception and decision making. Hernández (2001) indicates that much attention must be given to improving 1-on-1 skills.

A player´s options when he or she has possession of the ball are numerous. Maybe, for this reason, being able to perceive and select the correct option in a short time is not very easy at certain times, and the result of the selected action ends up being erroneous. In 1-on-1 situations, the player that attacks should shoot under the best conditions having beaten the defender. Two-on-two situations involve the collaboration with a teammate on offense and allow for tactical options related to the possibilities of passing, getting free from defence, defensive help, screens), etc.

We wanted to become familiar with what peak performance basketball players think about their ability to make decisions in these situations, as well as assess how they perceive their formative process in this aspect.

2. OBJECTIVES

Regarding decision making by the Spanish national women´s basketball team, the following was sought:

1.- To assess the formative process that peak performance players perceive about their decision making formation.

2.- To assess the perception that peak performance basketball players have regarding how they make decisions in the offensive phase of the game.

3.- To analyse these players´ perceptions about the decisions that they make in 1-on-1 and 2-on-2 situations.

4.- To evaluate whether there are differences between the players of different positions (point guards, small forwards, and centres) with regard to the perception of decision making.

5.- To suggest proposals for the formative process of female peak performance players regarding decision making.

3. MATERIAL AND METHOD

3.1. Design

Currently, numerous studies about decision making are based on an ecological focus (Gibson, 1979). They essentially suggest that the behaviours of the athletes should be understood as dynamic phenomena derived from the need to adapt to the environment (Araújo & Esteves, 2009; Araújo & Passos, 2008; Withagen & Michaels, 2005). For this reason, this kind of study has an interpretative perspective, since it is necessary to look deeper at the behaviours that could be overlooked with more standardised methods. A qualitative methodology utilising an interview as the instrument was used. For Thomas and Nelson (2007), this is relatively recent in the study of sport.

3.2. Subjects who participated in the study

The universe of reference consists of the Spanish female players that have played internationally. The conditions for selection of the players (n=12) included who have played internationally at the senior level as well as in the Spanish Women´s League. The sample is composed of the players from the national team at the 2008 Olympic Games in Beijing.

3.3. Instrument: the interview

The interview can be defined as an interactive verbal encounter between two people with the objective of accessing the interviewee´s perspectives of a topic that was previously selected by the interviewer (Marcelo & Parrilla, 1991: 23). Buendía (1994: 207-212) asserts that the interview demands the presence of the interviewer, who proceeds to ask the questions and systematically record the responses.

Following the suggestions by Cohen and Manion (1990), the semi-structured interview was utilised, since it allows the interviewer to look in-depth at certain topics depending on how the interview proceeds. For the interview´s design, recommendations by authors such as Patton (1983), Marcelo and Parrilla (1991), and Flick (2007) were followed: yes/no questions were avoided, the question was asked again if the interviewee did not respond, each question was introduced in order to give the interviewee time to think, and the interview was audio recorded.

Therefore, the material utilised included two audio recorders, and, for the posterior analysis, computers and a specific program that is mentioned later.

3.4. Procedure: coding and analysis

3.3.1. Interview Elaboration

In our case, the stages of the design and construction of the interview have been the following: initial study (other interviews from similar studies were analysed), creating a first version, expert review, pilot interview, and definitive composition of the interview (see appendix).

3.3.2. Selecting codes and dimensions

Data that are extracted from interviews do not offer enough information, Gil Flores (1994) asserts, if they are not organised and manipulated in some way. For that reason, the interviews were recorded on a magnetic tape and were literally transcribed on a word processor. These ideas are classified into dimensions which are then classified into certain codes that were previously established (chart 1).

DIMENSION	CODES	
PLAYER HISTORY PROFILE	Years of practice	PRAC
	Position	POS
	Played internationally in formative divisions	INFD
	Played internationally in senior division	INSD
FORMATION	Weekly training hours	WTHR
	Weekly hours per block	WHRB
	Formation per block	FOBL
	Priority block	PRBL
	Decision-making training	DMTR
1-on-1DECISION MAKING	1-on-1 decisions	DEC1
	1-on-1 important elements	ELE1
	Favourite movements	MOV1
	When	WHEN
2-on-2DECISION MAKING	2-on-2 decisions	DEC2
	2-on-2 important elements	ELE2
	Actions without the ball	AWOB
	Screen with ball	SCBA

Chart 1. Dimensions and codes.

3.5. Analysis of the data

After the literal transcription of the interviews and the definition and description of the codes, the first step of the qualitative analysis was to assign codes to the text. To make the treatment of the texts more objective when they are being codified, authors of qualitative research such as Flick (2007) recommend that this process be carried out by various coders and not only the principal investigator. In our case, the group of coders was composed of the four researchers of the projects, whose characteristics included: they had their doctorates, were licensed in Physical Activity and Sport Sciences, and they had the highest level of basketball coaching certification.

The training of this group of coders and the coding process consisted of:

1. Describing and becoming familiar with the list of codes.
2. Practicing coding together in two interviews to understand the process, and we confirmed that the agreement was very high.
3. Finally, the interviews were divided up between the coders such that each interview was coded by at least two researchers. The inter-coder agreement was greater than 85%.

The coded text was introduced into the AQUAD 5.0 computer program, which allowed us to work with qualitative data. This program facilitates the process of reducing and classifying the data. It facilitates the frequency of the codes as well as the text in each code so that the researchers can carry out the authentic qualitative analysis whose results are now presented.

4. RESULTS

We are going to present the results of the interview by analysing the codes of each of the dimensions that we have established, which are synthesised in chart 2.

PLAYER HISTORY	• Mean age of 25.8 years. The oldest player was 32 and the youngest was 19 years.
	• More than 10 years of basketball practice. The number of times they played internationally ranged from 20 to 147.
	• All players had participated at least one age division´s youth national team.
	• Balanced group: three players were very expert, five had a lot of experience, and four were very young.
FORMATIVE PROCESS	• Weekly training hours: approximately 20.
	• Weekly dedication to specific blocks: o Team tactics was what was most worked on in practices (60-80%). o Physical conditioning was also worked on frequently (20-25%). o Individual technical-tactical work (20%).
	• During the formative stage, the players claimed to have worked most on individual

	technique and tactics. In the senior division, team tactics had been worked on most. Physical conditioning was highlighted by five players; three of them had worked on it together with individual technique.
	• Prioritised block in the players´ formative process: o Team tactics was emphasised. o Secondly, individual technique and tactics. o In third place was physical conditioning.
	• Formative process in decision making: o The players believed that their formative process was good. o The coaches, in general, were important in their formative process. o Other players believed that each one´s talent is important.
1-ON-1 DECISION MAKING	• The majority of the players believed that they made good decisions. Four players thought that they did so sometimes. Only one player believed that with the national team she did not make good 1-on-1 decisions.
	• Key elements in 1-on-1: Defence, the current situation and the point in the game, the anticipation before receiving the ball, confidence, and the ability to react.
	• Favourite 1-on-1 movements: Large variety of specific actions. Lay-ups and pulling up to shoot were the most frequently cited. The inside players preferred to play 1-on-1 with their back to the hoop. Another player highlighted her versatility.
	• When they preferred to carry out their favourite movements: o When the defence were in place. o When they had "beat the defence".
2-ON-2 DECISION MAKING	• When the players are on offence and they do not have the ball, 50% believe that they make good decisions (the majority are inside players). The rest believe that they should improve this aspect.
	• 2-on-2 key elements: defence, the player with the ball.
	• Actions of the players when they are on offence and they do not have the ball (by order of preference): clear out to leave space for the player with the ball, look for an optimal position to receive a pass, screen, cut to the hoop, go for the rebound.
	• When the players screen, their priorities are: carry out a good screen by sealing off the defender and continue.

Chart 2. Summary of the results from the basketball players´ interviews.

4.1. Dimension: Player history

The profile of the sample includes: mean age of 25.8 years, while two of them were 32 years of age (players 2 and 6), and three were 19 years (players 1, 8, and 12). The age with which the players began to play ranged from 7 years (player 1) to 13 years (players 2 and 6). The mean was 10.1 years and the mode was 9 years of age. Therefore, the years of experience oscillated between 11 years (for player 8) and 22 years (for player 5).

Regarding their formative process, all had participated in at least one age division´s youth national team. Three players confirmed that they had played in all the youth age divisions (players 8, 9, and 10). The majority had played in international competitions as U16 and U18 players. The number of times that they had played internationally ranged from 20 times (for players 1, 8, 10, and 12, who debuted this year), 181 times for player 2, and 147 times for player 5. Certainly, it is a balanced group of three very veteran players, four very young players, and five with a lot of experience and an age near 25 years.

4.2. Dimension: Formative process

4.2.1. Weekly training hours

All the players stated that they trained an average of 20 hours weekly (approximately 4 hours/day). Five of the twelve players estimated that they practiced 15-20 hours. Some specified that it depends on the season of the year, because for the teams that play in the European competition during the week, training sessions change.

4.2.2. Weekly dedication per block

When asked how many weekly training hours they dedicate to each block (conditioning, team tactics, and individual technique and tactics), there was also complete agreement that team tactics are what is most practiced (60-80% of the time). Some players, such as players 2 and 10, believed that this block occupied almost the entire time.

Physical conditioning is the following block, with a frequency that ranges from 5 weekly hours (cited by players 6, 7, and 11) to 2 hours (cited by players 4, 5, 9, and 10). This is to say that the mean would be between 3 and 4 weekly hours. Some players, such as players number 2, 4, and 5 claimed to work on their conditioning on their own.

The block that was least worked on is individual technique and tactics. Some players, such as player 4, believed that they did not work on it in practice. The majority ranged from 4 to 6 weekly hours, while one player (player 11) believed that she spent approximately 10 weekly hours on it. Some players, such as players 2 and 12, claimed to work on technique and tactics on their own.

4.2.3. Formation by block

When asked which block they worked on most in their formative process, the majority (9 players) responded that they had worked on the individual technique and tactics block the most, especially when they were youth players. Four of them (1, 4, 5, and 8) claimed to have worked on individual technique a lot when they were young.

The second most cited block was team tactics. There were 9 players that believed that they had worked on it a lot, but four of them (players 4, 5, 10, and 11) specified that it has been mostly starting at the senior division with much less dedication to it in the formative stages.

The third block, physical conditioning, was highlighted by five players, three (players 4, 5, and 10) of whom claimed to have worked on it a lot when young, together with individual technique.

4.2.4. Block priorities

The last question in this dimension was which block they believe has been key for their success as a high-level player. Five players believed that all three blocks were important to be able to reach this level. However, we can emphasise that for ten players (including these five), team tactics, understood as the ability to "read the game" (players 3, 5, 7, and 8), fully develop the 5-on-5 game, and make decisions (player 1), etc., was the most important block for their success.

The second block was the individual technique and tactics, which was cited by nine players. Though some cited it as important, they recognised that there was another block that was somewhat more important (players 3, 7, and 12). Another player (player 1) highlighted its importance as the basis of her formation and later highlighted team tactics.

The third block was physical conditioning, cited by six players, including the five that highlighted all three blocks. Only player 12 cited this as the most important, and player 2 cited it as the second-most important for her.

4.2.5. Formation for decision making

In relation to how the players perceived their formative process regarding decision making, the majority believed that it has been good. At least 7 players believed that their coaches have helped them in their decision making, though they made interesting clarifications. For example, player 7 believed that basketball itself is improvisation and that you have to constantly make decisions. However, player 3 considered herself to be very talented and was grateful to her coaches, who have helped to monitor her to help her make better decisions. There are four players that responded doubtfully, affirming that some coaches have helped them, but others have not. Three players felt that it was innate, depending on the talent and genetics of each player. They recognised that it can be improved, but in the end, the player creates her own style and ability. Finally, player 4 emphasised that confidence is an essential element to be able to learn to make decisions.

4.3. Dimension: 1-on-1 decisions

4.3.1. 1-on-1 Decisions

When asked "Do you make good decisions when you play 1-on-1?", the majority answered affirmatively, although with clarifications. Four players (2, 5, 6, and 7, all outside players) responded confidently. Three others responded

that they normally make good decisions (player 10, shooting guard; player 12, a power-forward that is converting back to a forward; and player 3, another power-forward that plays outside a lot). Another four players answered that they sometimes make good decisions (player 11, who is a point guard; player 1, a young forward, and two centres, players 8 and 9). One player (player 4, a centre) recognised that with the national team, she is not able to play 1-on-1 well, though in club sport she can.

4.3.2. Important 1-on-1 elements

In the question of what elements the player considers important in 1-on-1 situations, the players offered responses that involved defence in some way or another. Nine specifically stated that you have to "read" the defence and act accordingly. There were two players that responded that you must evaluate the situation and the moment of the game. Another player replied that there has to be space without the help of other defenders. Player 2 went into detail, responding that you must read the situation before receiving the ball in order to be able to anticipate, and then later it depends on your confidence and ability to react.

4.3.3. Favourite movements

In this section, there were 10 different movements by 12 players. The favourite movement was the lay-up, which was selected by three players (1, a forward; 3, a power-forward; and 6, a shooting guard). The second movement, cited by 2 players, was pulling up and shooting (7, a shooting guard, and 11, a point guard), which was utilised by outside players and "small" players, likely to avoid blocked shots. The rest were movements specifically chosen by each player. It should be emphasised that almost all the inside players preferred to play with their back to the hoop: player 3 from the low post, player 4 chose to penetrate with her back to the hoop, player 8 preferred a hook shot with her back to the hoop, player 9 liked to dribble with her back to the hoop and then shoot, and player 12 preferred a reverse and half-hook. Player 2, a forward, considered herself versatile and capable of doing many things but she did not consider herself a specialist in anything.

4.3.4. When

When asked when to do these movements, five players responded that it depended on the defence, and four responded when you beat the defence, when you outnumber the opponent, or when spaces open up when the ball is moved. The two players that liked to pull up and shoot commented that they do it when they come off a screen.

4.4. Dimension: 2-on-2 decisions

4.4.1. 2-on-2 decisions

When asked if "you believe you make good decisions when you do not have possession of the ball", only six players responded affirmatively without clarifications, and, interestingly, five of them are all inside players. The majority of the outside players recognise that they should improve this aspect and that they remain very static (players 5, a point guard; 6, a shooting guard; and 7, a shooting guard).

4.4.2. 2-on-2 Important elements

When the players were asked, "What do you feel are the most important elements that influence your decision making in a game, when you don´t have possession of the ball?", nine players responded that it depended on the defence (all the outside players), two answered that they observe the teammate with the ball (player 8, a centre, and 12, a power-forward), and one claimed that what was important was the "timing" to execute a screen (player 9, centre).

4.4.3. Actions without the ball

The following question was "When your teammate has the ball, what actions do you do to favour a shot being taken?". Seven players responded that they would clear out to facilitate their teammate´s 1-on-1 (players 1, 2, 3, 6, 7, 10, 11, all outside players except 3, who is a power-forward). Also, seven players would move in an attempt to open the passing lanes in case their teammate with the ball cannot finish the 1-on-1 (1, 4, 5, 6, 7, 10, and 12, where there are three shooting guards and a point guard). The third most frequent possibility was to set a screen (players 3, 4, 8, 9, and 11, all inside players except one). Finally, there were two outside players that would cut (6 and 11) and a centre that would go in for the rebound (player 4).

4.4.4. Screen, player with ball

When asked, "regarding the screen, first, if you are the player with the ball, what are the priority actions for playing off the screen?", ten of the twelve players believed that the most important thing is to be aggressive, "attacking" the screen by taking the defender against it. Only two players (both centres, players 4 and 9) affirmed that they never do it. When asked what these actions depended on, all responded that they depend on the defence, and three of them added the importance of executing a good screen (players 3, 5, and 9). Player 2 added that it depends on the coach and, together with players 7 and 11, reading the situation.

4.4.5. Screen, player without the ball

When asked "if you are the player that executes the screen, what are the priority options for the screen, if you are the player without the ball?", all the players responded that the most important thing is to execute a good screen,

sealing off the defender of the teammate with the ball to later continue. Some outside players preferred to open themselves up after the screen (5, 6, and 10). When they were later asked on what these decisions depend, all agreed that they depend on the defence.

5. DISCUSSION

Beginning with the dimension of player histories, it is demonstrated that players had, on average, 16.6 years of playing experience. All had more than 10 years, which are what authors such as Ruiz and Arruza (2005) believe are necessary to become an expert athlete.

Further, the majority of the players trained approximately 20 hours weekly, and team tactics was the block to which by far the most time was dedicated. In their formative training, what they worked on the most was the block comprised of individual technique and tactics, especially when they were young. From the sample, at least five players believed that a block that was not what they had most trained was highly important in their success. Players 6 and 11 cited individual technique, when their formative process included more tactics. On the other hand, players 1, 5, and 8 had much more training in technique; however, they emphasised their tactical ability in their success. In previous studies, tactical ability has been highlighted above technique since decision making is key in the formation of the player (Jiménez, 2007; Lorenzo & Prieto, 2002; Ruiz & Jiménez, 2006; Sáenz-López et al 2005).

Along these lines, the majority of the players believed that they had received a good formation regarding decision making. Some specified that some coaches helped more than others and that it depends on the ability of the player. Lorenzo and Prieto (2002) highlight the need to develop one´s decision-making ability to achieve significant learning for athletes.

The majority of the players perceived that they made good decisions when playing in a 1-on-1 situation. In fact, it is shown that outside players demonstrated a lot of confidence in their 1-on-1 skills (only a point guard and a young wing guard had doubts). However, in general the inside players expressed the most doubts. Gómez, Lorenzo, Ortega, Sampaio, and Ibáñez (2007) confirm the differences that exist in the use of technical and tactical means in various specific positions.

The most important element when making the decision to play a 1-on-1 is the defence, both for the player with the ball and the rest of the players to evaluate the open spaces, the defensive help, as well as the game situation. Along these lines, authors such as Baddely (1992), Buceta (1998), and Castejón (2002a) believe that the following elements are key in an athlete´s decision making: the opposition, the time available to him or her, and the moment in which it happens.

Regarding their favourite movements, it is remarkable that there are 10 different movements cited. This suggests that heterogeneity in a team, and players that are able to do different things well, is very interesting. We believe that this could be interesting criteria when putting together a team. Almost all the inside players preferred to play with their back to the hoop, while the outside players preferred to penetrate or pull up and shoot. Along these lines, versatility and correct sequencing of technical and tactical means seem necessary for the formative stages, as Ortega (2010) suggests. On the other hand, no player chose the three-point shot as their favourite. It is interesting that no one chose the outside shot, for example the three-point shot, as there are excellent shooters on this team, it is a very motivating means, and it is very important in initiation sport (Sáenz-López et al 2005).

Regarding the perception of making good decisions when the player does not have the ball (2-on-2), all the inside players believed that they do this well, and the majority of the outside players (5 of 7) believed that they should improve. It was confirmed that the outside players feel more secure with the ball and tend to have a lot of self-confidence (Ruiz & Jiménez, 2006). The perception of one´s ability is an internal source of success or failure within the contributing factors (García, Sánchez, & De Nicolás, 1999).

Among the most important elements when making decisions, the majority (among them, all the outside players) responded that it depends on the defence, coinciding with Ruiz and Jiménez (2006), while two (inside players) believed that it depends on the teammate with the ball. Regarding the actions that they do to facilitate their teammate getting a shot off, the majority chose to get out of the way and look for a pass in the passing lanes, while the inside players would go set a screen.

The players´ opinion regarding screening the player with the ball includes that the most important thing is to be aggressive and attack the screen, while being a continuous threat. When asked about the screen when they are the players that set it, all agreed on sealing the defender so that it is effective and then continuing, with the majority of the outside players preferring to roll outside. Their decisions depend on the defence. In general, these actions coincide with those observed by Refoyo, Domínguez, Sampedro, and Sillero (2007).

These 1-on-1 and 2-on-2 situations are very valid as training exercises or tasks to improve the decision-making ability (Bar-Eli & Raab, 2006). Therefore, the modification of rules, spaces, and materials are also interesting suggestions for incorporating into athletes´ decision-making formation (Arias, Argudo & Alonso, 2009; Piñar, Cárdenas, Miranda & Torre, E., 2008).

6. CONCLUSIONS

The following conclusions can be drawn from the results of the present study.

1.- The majority of the players believed that they had a correct formation for their decision-making ability and that almost all the coaches helped them in this facet, although some players believed that this is something innate. More specifically, the majority believed that when they were young, what they most worked on was individual technique and tactics. In the senior division, team tactics is what has been most worked on (more than half the time). For their personal success, they believed that everything (technique, tactics, and conditioning) is important, but the majority cited team tactics as the most important.

2.- In 1-on-1 situations, the majority of the players believed that they make good decisions. The most important element when making these decisions is the defence, both one´s own defender as well as the others, to evaluate the spaces and help, as well as the moment of the game. However, for 2-on-2 situations, there are differences since almost half of the players believed they should improve their ability to make decisions when they do not have possession of the ball and that they remain too static. Just like for 1-on-1, the most important element when making decisions is to observe the defence and act accordingly.

3.- Regarding the difference between specific positions, it can be confirmed that outside players were more confident when playing 1-on-1 than inside players. In relation to the type of favourite movements, there was a lot of variety, but in general, the centres liked to do movements that begin with their backs to the hoop. Outside players liked to penetrate or pull up and shoot after a screen. For 2-on-2, we see differences in the perception of good decision making, since all the inside players believed that they do it well, while 5 of the 7 outside players had doubts and believed that they should improve. Another difference in this section is that the outside players had more variety of movements searching for spaces to receive and shoot or play 1-on-1, while the inside players almost always sought the hoop to go in for the rebound or to receive and finish. For the screen, the outside players tended to choose the option of continuing toward the outside, looking for a shot, and the majority of the inside players preferred to continue toward the basket.

4.- Finally, with these data, the following proposals can be presented for the formative process of high-level players regarding decision making:

- Formation in youth stages. It is important to work on all three blocks (technique, tactics, and physical conditioning), but more time should be dedicated to tactical work, especially regarding decision making. It also seems important to avoid specialisation too early, to avoid some obvious differences between positions.
- Work on decision making. It is important to dedicate a lot of time to working with opposition and to teaching players how to make decisions based on the defence. Also, game-like decisions should be used in order to learn to make adequate decisions at each moment. Versatility is a very important quality for this ability; therefore, tasks with a lot of variety of skills, spaces, specific positions, etc. should be utilised. Along these lines, modifying the number of players (1-on-1, 2-on-2, etc.) as well as

the regulations, spaces, etc., is highly recommended for developing the ability to make decisions.

- Specific work. Given the variety of favourite movements, we recommend allowing time for each player to work on them individually. Regarding the screen, the player that has the ball should be very aggressive and demonstrate some risk so it is efficient. The player´s intent should be to penetrate or shoot and then, according to the defence, look to pass later. From the perspective of the player that sets the screen, all agreed on the importance of sealing the screen to block the defender of the teammate with the ball and, later, according to the defence, continue toward the basket or continue outside to look for the shot.
- Putting together a team. Heterogeneity seems to be a virtue when putting together players for a team.

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APPENDIX

INTERVIEW OF SPANISH WOMEN´S NATIONAL TEAM PLAYERS

Personal history regarding basketball

1. How many years have you been practicing basketball?
2. What is your playing position during club competition? Since when?
3. Do you have the same position on the national team?
4. Have you played with the national team at other age divisions? Which one(s)?
5. How many years have you been playing with the senior national team?
6. How many times have you played internationally with the senior national team?

Formation

7. How many hours have you trained per week this last season (2007-2008)?
8. Of the following blocks: individual technique and tactics, team tactics, and physical conditioning, how many hours per week have you worked on each of them this last season?
9. In your overall formation process, throughout the years in your basketball practice, and regarding the three aforementioned blocks, on which block have you dedicated the most time?
10. Of the three cited elements, which do you consider the highest priority for having success as a basketball player?

Decision making (1x1)

11. Do you believe that you make good decisions in 1-on-1 situations when you have the ball? Why?
12. What are the most important elements that influence your decision making regarding offence in a 1-on-1 situation?
13. What offensive movements do you like to do most frequently in 1-on-1 situations?
14. When do you believe these movements (that you just cited) are most suitable?

Decision making (2x2)

15. Do you believe you make good decisions during games when you do not have possession of the ball? Why?
16. What are the most important elements that influence your decision making in a game, when you do not have possession of the ball?

17. On offence, when your teammate has the ball, what actions do you do to favour a shot being taken?
18. For a screen, if you are the **player with the ball**, what options do you prioritise for playing the screen?
19. On what does it depend when you make a decision?
20. For a screen, if you are the **player that sets the screen**, options do you prioritise for playing the screen?
21. On what does it depend when you make a decision?

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