To Measure the Selected Profiling Factors of Basketball Players of Different Age Groups from Pune City

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ABSTRACT

The purpose of this study was to make profiling of basketball players according to the selected profiling factors of top 4 Male Basketball teams from the different age categories from the pune city and to evaluate such factors such as Players age, Height, Weight, Body fat percentage, Vertical jump, Body mass index (BMI), Position of the game, Experience and Highest level Played. A descriptive survey method is a research technique used to collect information about a population or a phenomenon by systematically gathering data from a sample of that population. This method aims to describe and summarize the characteristics, behaviours, or opinions of the subjects under investigation. It typically involves the use of structured testing, interviews, or observations to gather data, which is then analysed to draw conclusions about the studied group or topic. Descriptive surveys do not involve experimental manipulation and are primarily focused on providing a snapshot or overview of the subject being studied. Purposive sampling is a non-probability sampling technique where researchers deliberately choose participants based on specific characteristics or criteria relevant to the research purpose. This method allows for targeted selection to gain in-depth insights and achieve specific goals in a study. Researchers use their judgment to select participants who can provide valuable information or represent particular traits of interest. The current study focuses on basketball players and the population comprises of all the teams from different age groups who participated in the tournament. From this population I have selected a sample consisting of the top 4 teams within each age group for detailed profile analysis. In this research study, the sample comprises the top 4 teams from each age category, selected from a population of participated teams in that particular tournament. There are 41 players from the intercollegiate age category and 42 Players from the under 16 age categories will be the participants for the study. Data collection tools such as Stadiometer for the

Height, Weing Scale for Weight, Body fat Analyser to measure Fat percentage of the body as well as BMI and Vertical Jump test is to measure vertical jump.

Keywords : Profile Study, Basketball, Basketball Players, Height, Position, Pune City

Introduction

In the dynamic realm of basketball, the comprehension of players' physical attributes and skill levels stands as a cornerstone for team success and talent development. This research endeavor embarks on a comprehensive journey into the profiling of basketball players within Pune City, India, aiming to illuminate crucial metrics and insights essential for optimizing player performance and team dynamics.

Understanding Player Profiles:

The multifaceted nature of basketball demands a deep dive into various dimensions of player profiles. From scrutinizing fundamental physical attributes like height, weight, body composition, and BMI to assessing critical performance indicators such as vertical jump, this study seeks to paint a holistic picture of the basketball players in Pune City. By delving into these metrics, we aim to unravel correlations and patterns that can guide training programs, talent identification strategies, and team composition decisions.

Exploring Physical Attributes:

Height, weight, and body composition serve as pivotal determinants of basketball prowess. Taller players often possess advantages in rebounding and shot-blocking, while body composition influences agility and speed on the court. Through meticulous data collection and analysis, we endeavor to uncover the nuanced relationship between these physical attributes and player performance, shedding light on optimal profiles for different positions on the basketball court.

Unraveling the Vertical Jump:

The vertical jump stands as a quintessential measure of lower-body power and explosiveness, essential for various facets of gameplay such as dunking, shot-blocking, and rebounding. This study ventures into exploring the intricate interplay between height and vertical jump performance among basketball players in Pune City, aiming to discern whether taller players inherently exhibit superior leaping ability or if other factors come into play.

Experience as a Catalyst:

Beyond physical attributes, the accumulated experience within the sport significantly shapes player effectiveness and team dynamics. By examining players' journey from amateur to professional levels, we seek to unravel the impact of experience on performance, leadership, and team cohesion. This analysis not only provides insights into the role of seasoned players but also underscores the importance of mentorship and developmental pathways in nurturing basketball talent.

Bridging Science with Practice:

This research endeavor bridges the chasm between scientific inquiry and practical application in basketball. By furnishing coaches, scouts, and sports enthusiasts with empirical data on player profiles, we empower informed decision-making in talent identification, player development, and team composition. The insights gleaned from this study hold the potential to elevate the competitiveness of basketball teams in Pune City and beyond, fostering a culture of excellence and innovation in player profiling.

Contribution to Sports Science:

In addition to its immediate implications, this investigation contributes to the corpus of knowledge within sports science. By unraveling the intricate nexus between physical attributes, experience, and performance in basketball, we advance understanding in the field of athlete profiling and talent management. The findings presented herein serve as a springboard for further exploration and innovation, propelling the evolution of basketball player profiling and development strategies.

In summation, this study embarks on a meticulous exploration of basketball player profiles in Pune City, India, traversing dimensions of physical attributes, vertical jump performance, and accumulated experience within the sport. By illuminating correlations and insights, this research endeavor strives to enhance the performance and competitiveness of basketball teams while fostering advancements in sports science. It is our fervent hope that the findings presented herein will ignite further research endeavors and catalyze innovations in the realm of basketball player profiling and talent development.

Methodology

A descriptive survey method is a research technique used to collect information about a population or a phenomenon by systematically gathering data from a sample of that population. This method aims to describe and summarize the characteristics,

behaviours, or opinions of the subjects under investigation. It typically involves the use of structured questionnaires, interviews, or observations to gather data, which is then analysed to draw conclusions about the studied group or topic. Descriptive surveys do not involve experimental manipulation and are primarily focused on providing a snapshot or overview of the subject being studied. The research employs a descriptive survey method to comprehensively understand the characteristics and fitness levels of basketball players across different age groups such as Under 16 age group and Intercollegiate age group. Morphological variables such as height, weight, body fat percentage, and BMI, along with fitness test variables like vertical jump, are measured. The population consists of teams from various age categories participating in the tournament, with the top 4 teams (Total 83 Players) selected from Both the age groups for detailed analysis. Purposive sampling is utilized to select participants based on specific criteria relevant to the research objectives, ensuring in-depth insights. Data collection tools include height tests using a stadiometer, weight tests using a weighing scale, body fat analysis using a body fat analyzer, BMI tests, and vertical jump tests using marked walls and chalk. Additional information on players' experience and highest level played is also gathered. This methodological approach facilitates a comprehensive understanding of the physical attributes and fitness levels of basketball players across different age categories.

Analysis and Interpretation of Data

Table No. 4.1 : *Descriptive Statistics of Different Variables of Under 16Basketball Players from Pune City*

	Under -16 Height (Cm)	**Intercollegiate Height (Cm)**
N	42	41
Absent	0	0
Mean	170.41	178.44
Std. Error of Mean	1.20	1.14
Mode	169.00a	177.5
Std. Deviation	7.80	172.00a
Minimum	155	7.28
Maximum	184.5	163.2
		198

Interpretation –

From the above Analysis it is clear that Mean of Height of U-16 Players is 170.41Cm. and the standard deviation is 7.80

From the above Analysis it is clear that Mean of Height of Intercollegiate Players is 178.44cm. and the standard deviation is 7.28

Table No. 4.3 : Frequencies and Percentage of Height of Under-16 and Intercollegiate Basketball Players from Pune City

Group		Observed N	Percentage
Under -16	Very Tall	0	
	Tall	9	21.43
	Normal	10	23.81
	Short	17	40.48
	Very Short	6	14.29
	Total	42	
Intercollegiate	Very Tall	2	4.88
	Tall	4	9.76
	Normal	14	34.15
	Short	17	41.46
	Very Short	4	9.75
	Total	41	

Interpretation –

From the above Analysis it is Clear that 21.43% Players are Tall, 23.81% Players are Normal and 40.48% Players are Short and 14.29% Players are very Short in Height of Category of Under 16 Basketball Players.

From the above Analysis it is clear that 4.88%Players are Very Tall, 9.76% Players are Tall, 34.15% Players are Normal, 41.46% Players are Short and 9.75% Players are Very Short in Height Category of Intercollegiate Basketball Players.

Table No. 4.3.1 : *Chi Square Analysis of Height of Under-16 and Intercollegiate Players*

Group		Height
Under -16	Chi-Square	6.190a
	df	3
	Asymp. Sig.	0.103
Intercollegiate	Chi-Square	11.390c
	df	3
	Asymp. Sig.	0.01

Interpretation –

From the chi square analysis of under 16 basketball players it is clear that the p value is 0.103 which is greater than significant value and it is not significant at 0.05 level.

The chi square analysis of intercollegiate basketball players shows that the p value is 0.01 which lesser than significant value and it is significant at 0.05 level.

Table No. 4.4 : *Crosstab Analysis of Under 16 and Intercollegiate Basketball Players According to the Height and Player Position*

Group			Player Position					
			Point guard	**Shooting Guard**	**Small Forward**	**Power Forward**	**Center**	**Total**
Under -16	**Height**	Tall	0	1	1	5	2	9
		Normal	2	3	2	1	2	10
		Short	9	6	1	0	1	17
		Very Short	3	3	0	0	0	6
	Total	14	13	4	6	5	42	
Inter-collegiate	**Height**	Tall	0	0	2	1	1	4
		Normal	2	4	2	4	2	14
		Short	8	6	0	1	2	17
		Very Short	4	0	0	0	2	6
	Total	14	10	4	6	7	41	

Interpretation of Player Height and Players Position

From the above analysis total 42 Basketball Players from under 16 age group are Classified in 5 different Categories and Position according to their Height. i.e Very Tall, Tall, Normal, Short, Very Short. Out of these 42 Players there are 14 Point guards, 13 Shooting guards, 4 Small Forwards, 6 Power Forwards, and 5 Centers.

From the above analysis total 41 Basketball Players from Intercollegiate category are Classified in 5 different Categories and Position according to their Height. i.e Very Tall, Tall, Normal, Short, Very Short. Out of these 42 Players there are 14 Point guards, 19 Shooting guards, 4 Small Forwards, 6 Power Forwards, and 7 Centers.

Crosstab Interpretation of Height and Player Position of Under 16 Basketball Players

Crosstab analysis of total 14 Point guards from U-16 age group shows that 2 Point guards fall under Normal in Height category, 9 falls under Short Height Category, 3 fall under Very short Height category.

Crosstab analysis of total 13 Shooting guards from U-16 age group shows that 1 Shooting guard is Tall, 3 Shooting guards fall under Normal in Height category, 6 falls under Short Height Category, 3 fall under Very short height category.

Crosstab analysis of total 4 Small Forwards from U-16 age group shows that 1 Small Forward is Tall and 3 Small forwards are fall under Normal in Height category.

Crosstab analysis of total 6 Power Forwards from U-16 age group shows that 1 Power Forward is Normal in height and 5 Power Forwards Players are Tall in Height Category.

Crosstab analysis of total 5 Centers from U-16 age group shows that 1 Center Player is Short in height, 2 Centers falls under Normal height and 2 Centers falls under the Tall height Category.

Crosstab Interpretation of Height and Player Position of Intercollegiate Basketball Players

Crosstab analysis of total 14 Point guards from intercollegiate shows that 2 Point guards fall under Normal in Height category, 8 falls under Short Height Category, 4 falls under Very short Height category.

Crosstab analysis of total 10 Shooting guards from intercollegiate shows that 4 Shooting guards fall under Normal in Height category and 6 falls under Short Height Category.

Crosstab analysis of total 4 Small Forwards from intercollegiate shows that 2 Small Forwards are Tall and 2 Small forwards are fall under Normal in Height category.

Crosstab analysis of total 6 Power Forwards from intercollegiate shows that 4 Power forwards is Normal in Height and 1 Power Forwards Players is Tall in Height Category and 1 Power Forward is Short in Height.

Crosstab analysis of total 7 Centers from intercollegiate shows that 2 Center Player are Very Short in Height, 2 Centers falls under Short in Height, 2 Centers are Normal in Height and 1 Centers falls under the Tall height Category.

Discussion

Height plays a pivotal role in basketball, influencing various aspects of the game. Taller players often possess advantages in rebounding, shot-blocking, and scoring near the basket due to their ability to reach higher and cover more ground. Additionally, height can provide an advantage in defending opponents and altering shots, making it challenging for shorter players to penetrate the defense or shoot over them. While skill, agility, and strategy remain crucial, height can significantly impact a player's effectiveness on both ends of the court, shaping team dynamics and strategic approaches in the game of basketball.

The Mean of Height of U-16 Players is 170.41Cm. and the standard deviation is 7.80 which shows the height of U-16 Players is good according to their age. The Mean of Height of Intercollegiate Players is 178.44cm. and the standard deviation is 7.28 which is an average height of the players according to their age.

From the crosstab analysis it is clear that there is no player in under 16 category who is in very Tall in height whereas there are 4.88% Players are Very Tall Category in intercollegiate Basketball players Also there are 21.43% Players are Tall in U -16 Category whereas intercollegiate players have only 9.76% Players are in Tall category.

In under 16 Category there are 23.81% players falling in Normal or Average height whereas Intercollegiate category percentage of average or normal height of players in 34.15% It shows that in intercollegiate Category there are More Normal or Average height players than U-16 age group Basketball category.

In both the categories Short Players are almost the same in percentage that 40.48% in U-16 and 41.46% in Intercollegiate Basketball category.

There are 14.29% that is Very Short in the u-16 category but there are only 9.75% Players are Very Short in the Intercollegiate Basketball category.

Height and Position wise Discussion :

The research study provides a comprehensive analysis of basketball players categorized by age group (under 16 and intercollegiate), height, and player position. Key findings from the analysis include:

Player Distribution by Height and Position:

In both age groups, players are classified into five height categories: Very Tall, Tall, Normal, Short, and Very Short. Positions include Point guard, Shooting guard, Small Forward, Power Forward, and Center.

Comparison Between Age Groups:

Notable differences exist between the under-16 and intercollegiate categories in terms of player distribution by height and position. For instance, there is a higher proportion of Shooting guards in the intercollegiate group compared to the under-16 group.

Height-Position Crosstab Analysis:

Crosstab analyses provide deeper insights into the relationship between height and player position within each age group.

For example, among under-16 players, most Point guards and Shooting guards fall into the Short and Very Short height categories, while Power Forwards and Centers tend to be taller.

Conclusion

The results of the study show there are differences in the height of the under 16 basketball players and intercollegiate basketball players. The study shows that Intercollegiate Basketball Players have Slightly Good height average compare to the Under 16 basketball players. But there are a greater number of Tall players in under 16 categories according to their height criteria.

Height and Position

From the analysis of Height and Player Position of under 16 age group it is clear that Most Point guards and Shooting guards are Short in Height. While Small Forwards are Normal and Tall, Most of the Power Forwards are Tall and Center Players are Normal as well as Tall in Hight Category.

From the analysis of Height and Player Position of Intercollegiate it is clear that Most Point guards and Shooting guards are Short in Height. While Small Forwards are Normal and Tall, Most of the Power Forwards are Normal and Tall and Center Players are Normal as well as Tall in Hight category.

Consequently, the athletes in various positional roles are inherently different, train differently, or both. The demands of the different positional roles appear to be unique, and thus training, as well as recruiting, should reflect the differences. Coaches can use this information to determine what type of profile is needed for specific positions and to design training programs to maximize fitness development in their athletes and to achieve success in basketball.

Recommendations

1. Tailored Training Programs: Coaches should tailor training programs to accommodate the unique physical attributes and positional demands of basketball players at different levels of play. For instance, understanding that point guards and shooting guards tend to be shorter in height suggests the need for agility, speed, and ball-handling skills training, whereas power forwards and centers may require focus on strength, post moves, and rebounding techniques.

2. Recruitment Strategies: Recruitment processes should consider the specific height profiles associated with different player positions. By recognizing the typical height distributions among point guards, shooting guards, small forwards, power forwards, and centers, coaches and recruiters can target players who possess the ideal physical attributes for each position, thereby optimizing team composition and performance potential.

3. Player Development: Emphasizing individual player development based on positionspecific needs can enhance overall team effectiveness. By tailoring skill development programs to address the height-related strengths and weaknesses of players in various positions, coaches can maximize the potential of each athlete and improve team cohesion and performance.

4. Strategic Planning: Coaches can use the insights from height and positional analysis to inform strategic decisions during games. Understanding the height distribution across different positions can help coaches identify mismatches and exploit strategic advantages on the court, ultimately enhancing team competitiveness and success.

5. Long-term Athlete Development: Recognizing the differences in height distribution and positional requirements between younger and collegiate-level

players highlights the importance of long-term athlete development pathways. Implementing structured development programs that focus on skill acquisition, physical conditioning, and positional specialization from a young age can better prepare athletes for success at higher levels of competition.

6. Further Research: Continued research into the relationship between height, player position, and performance outcomes in basketball can provide deeper insights into the factors influencing player development and team success. Exploring additional variables such as skill proficiency, athleticism, and game strategy can further enhance our understanding of the complex interplay between height and player performance in basketball.

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