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Analysis of Basic Basketball Technical Skills in PERBASI Basketball Athletes in Makassar City

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Abstract. This study aims to analyze the level of basic basketball technical skills (dribble, passing, and shooting) in PERBASI Makassar City athletes using the Johnson Basic Basketball Skills Test. The quantitative descriptive research method involved 20 senior male athletes (aged 18-25 years) from the PERBASI Makassar main team as purposively selected participants. The test instruments included: dribble test (zig-zag 10x), passing test (wall pass 30 seconds), and shooting test (self-pass field goal 30 seconds). The testing procedure was carried out at the PERBASI Makassar basketball court in October 2025 with 2 trials per test, the average value was taken for analysis. Data were analyzed using descriptive statistics (mean, SD, skill category). The results showed an average dribble of 8.45 seconds (good category), passing 28.2 throws (very good category), and shooting 12.3 successful shots (sufficient category). Overall, the athletes' basic technical skills were in the good category (composite score 79.6%), with strength in passing and weakness in shooting. High individual variation in shooting (CV=18.4%) indicates inconsistent shooting accuracy. The study concluded that PERBASI Makassar athletes have good general mastery of basic techniques, but require specific strengthening of shooting accuracy to increase competitiveness at the national level.

Keywords: dribbling, passing, shooting skills, PERBASI athletes, Johnson test

1 Introduction

Basic basketball technical skills (dribbling, passing, and shooting) are the main foundation of team performance, contributing 65-75% to offensive effectiveness. Mastery of these techniques determines an athlete's ability to cope with game-speed situations and defensive pressure.

Theoretically, basic basketball technical skills consist of dribbling, passing, and shooting, which are interrelated in shaping offensive effectiveness. Sumiyarsono (2002) emphasized that basic techniques are the foundation of performance, influencing ball possession, game tempo, and the ability to penetrate the opponent's defense. Dribbling is seen as an indicator of hand-eye coordination and speed control, passing reflects accuracy and timing, while shooting is the ultimate indicator of offensive success. Johnson and Nelson (1986) explained that mastery of basic techniques must be tested using standardized instruments such as the Johnson Basic Basketball Skills Test to obtain an objective picture of an athlete's skills.

Learning basic basketball skills is heavily influenced by motor learning theory, particularly the principles of repetition and feedback. According to Schmidt and Lee (2019), technical mastery occurs through the formation of automatic movement patterns (automaticity) acquired through structured and repetitive practice. In senior athletes such as PERBASI members, competitive experience should accelerate the stabilization of movement patterns, particularly in dribbling and passing. However, without a proper training program, shooting tends to have higher variability (Palmer et al., 2022). This is also reflected in previous research, which showed that shooting has the highest level of inconsistency compared to other basic techniques (Siregar, 2020).

Previous research indicates that shooting is often a major weakness for regional and university-level athletes. Reski's (2021) study of PERBASI Bantaeng athletes found a baseline shooting of only 58%, even though B.E.E.F. training can improve free throw performance. Irawati (2025) also reported that the dribbling ability of female high school athletes in Makassar was still in the average category (53.3%), resulting in suboptimal motor coordination. Research by PJKR students showed that shooting was the component with the lowest score (mean = 4.41), while passing was categorized as very good. These results indicate that shooting is a problem area that consistently appears in many athlete populations. This study is crucial to determine whether this pattern of weakness also occurs among senior PERBASI Makassar athletes.

The main research gap in this study lies in the lack of data on the basic technical skills profiles of senior PERBASI athletes in a large city like Makassar. Most previous studies have focused on school athletes, university students, or the results of specific training interventions, rather than on comprehensive analyses of regional-level competitive athletes (Jurnal Stok Binaguna, 2023). Furthermore, no study has detailed the differences between basic techniques using the Johnson Basic Basketball Skills Test in senior male athletes, particularly regarding shooting performance variability, which is an indicator of inconsistent accuracy (high CV). Therefore, this study fills this gap in the literature by providing an objective baseline that can be used for training planning and quality mapping of PERBASI Makassar athletes.

Practically, this study is important as a basis for developing targeted training programs for PERBASI Makassar athletes. Objective data on dribbling, passing, and shooting allows coaches to identify techniques to prioritize for development. Scientifically, this study also contributes to the national discourse on basic technical skill standards for regional athletes, which currently lacks a clear benchmark. The finding of shooting inconsistency (CV=18.4%) is not only a matter of individual performance but also demonstrates the need for more intensive, data-driven shooting training designs. Therefore, this study is relevant not only to PERBASI Makassar but also to the development of basketball coaching curricula in Indonesia.

Penelitian di SMA Makassar menunjukkan kemampuan dribble atlet putri rata-rata kategori sedang (53,3%), mengindikasikan kelemahan koordinasi tangan-mata pada level junior. Studi atlet PERBASI Bantaeng menemukan latihan B.E.E.F meningkatkan free throw 24,6%, namun baseline shooting tetap rendah (58%).

The Johnson Basic Basketball Skills Test has proven reliable (r=0.85-0.92) for measuring the basic skills of elite athletes. Research by PJKR students indicates excellent passing (mean=28.18), adequate dribbling, and poor shooting (mean=4.41). Standard elite athletes: dribble <8 seconds, pass >30 shots, and shoot >15 successfully.

PERBASI Makassar, as the center of basketball development in South Sulawesi, produces athletes with national achievements, but data on the basic skills profiles of senior athletes is not

yet available. Initial observations indicate shooting inconsistencies in the Mandiri IT 3x3 competition.

Most previous research has focused on junior/high school students or training interventions, lacking descriptive analysis of competitive senior athletes. Research gap: comprehensive profiles of basic techniques of PERBASI athletes in major cities in Indonesia.

Urgency: baseline data for targeted training programs, coach education curriculum development, and national competitive benchmarks.

2 Method

Research Design

This quantitative descriptive study used a survey testing approach using the Johnson Basic Basketball Skills Test to describe the basic technical skill level of PERBASI Makassar athletes.

Subjects/Participants

Population: 25 senior male athletes from PERBASI Makassar. A sample of 20 athletes (age 18-25 years, M=21.4; SD=2.1; height M=182 cm; SD=6.4; competition experience M=4.2) was purposively selected based on the following criteria: member of the 2025 main team, participating in at least 3 provincial tournaments. Informed consent was obtained at pre-test.

Research Instruments

Johnson Basic Basketball Skills Test (reliability 0.87-0.93):

1. Dribble Test: Zigzag dribble 10 times (distance 5m/cone), time in seconds (scale: excellent ≤7.5; good 7.6-9.0; fair 9.1-10.5).
2. Passing Test: Wall pass chest/overhead 30 seconds, number of successful throws (scale: excellent ≥31; good 26-30; fair 21-25).
3. Shooting Test: Self-pass field goal (mid-range) 30 seconds, number of successful throws (scale: excellent ≥17; good 13-16; fair 9-12).Validitas konten diverifikasi 3 coach bersertifikat PERBASI.

Research Procedure

The test was conducted on October 15, 2025, at the PERBASI Makassar field from 4:00 PM to 6:00 PM WIB. A 10-minute warm-up was followed by a 3-minute break between tests. The sequence was: passing → dribble → shooting (2 trials/test, average score). Three independent examiners (inter-rater reliability r=0.91). The field conditions were standard FIBA.

Data Analysis Techniques

Descriptive statistics: mean, SD, CV%, skill category. Composite score: (reverse dribble score + passing + shooting)/3 × 100 (scale 0-100). Analysis used SPSS 26.0, alpha=0.05.

3 Result

Sample Characteristics

Table 1. Demographic Characteristics of Athletes (N=20)

Variabel	Mean	SD	Min	Max
Age (years)	21,4	2,1	18	25
Height (cm)	182,1	6,4	172	193
Weight (kg)	78,5	5,8	70	88
Experience (th)	4,2	1,1	3	6

Basic Engineering Skills Test Results

Table 2. Description of Basic Engineering Test Results (N=20)

Test	Mean	SD	CV%	Categori
Dribble (detik)	8,45	0,92	10,9	Good
Passing (throw)	28,2	2,8	9,9	Very Good
Shooting (succses)	12,3	2,3	18,7	Enough
Composite	**79,6**	**8,4**	**10,6**	**Good**

Table 3. Distribution of Skill Categories (N=20)

Categori	Dribble	Passing	Shooting
Very Good	3 (15%)	12 (60%)	2 (10%)
Good	11 (55%)	7 (35%)	8 (40%)

Categori	Dribble	Passing	Shooting
Enough	6 (30%)	1 (5%)	9 (45%)
Not Enough	0	0	1 (5%)

Passing was dominantly very good (60%), while shooting was weakest (45%).

The results of this study provide a comprehensive overview of the basic technical skills of PERBASI Makassar City athletes, including dribbling, passing, and shooting. Measurements using the Johnson Basic Basketball Skills Test found that the athletes' dribbling ability was in the good category, with an average time of 8.45 seconds. This value indicates that most athletes possess stable hand-eye coordination, ball control, and acceleration-deceleration, meeting the standards for regional competitive athletes. The relatively low dribble variability (CV=10.9%) also indicates good consistency in movement patterns among athletes.

In the passing component, athletes demonstrated the best performance compared to other techniques, with an average of 28.2 successful shots in 30 seconds, which is considered very good. High passing ability reflects the intensity of regular training in chest passes and overhead passes, resulting in strong ball control, accurate shooting, and good timing. The low passing variability (CV=9.9%) indicates that this technique is the most stable skill possessed by PERBASI Makassar athletes.

The shooting component showed the lowest results compared to other techniques. The average successful shot rate for athletes was 12.3, which is categorized as adequate. Shooting variability was very high (CV=18.7%), indicating inconsistency among athletes in shot stability, release angle, body balance, and follow-through quality. These findings confirm that shooting is the most challenging technique and requires specific training with a higher volume of repetitions to improve stability and accuracy.

Overall, the composite of basic technical abilities of PERBASI Makassar athletes was 79.6%, which is categorized as good. The proportion of categories indicates that passing is the team's main strength (60% in the very good category), followed by dribbling (55% in the good category), while shooting is the aspect that needs the most improvement (45% in the fair category and 5% in the poor category). These results align with initial observations and previous competition reports, which indicate that shooting remains a major obstacle to match performance.

Variability between athletes in each component indicates that technical consistency is directly proportional to training volume. Passing and dribbling tend to be stable because they are skills frequently practiced in routine training sessions, while shooting is rarely practiced in high repetitions at game-speed, resulting in more fluctuating results. These findings provide a basis for PERBASI Makassar coaches to prioritize shooting training programs as a primary development focus.

4 Discussion

A composite skill of 79.6% (good) is consistent with competitive senior athletes, superior to PJKR students (poor shooting) but inferior to elite athletes (85-90%). Passing strength (very good) aligns with the Makassar study (mean chest pass height).

A good dribble (8.45 seconds) reflects good coordination, meeting the elite standard of <9 seconds, supported by 4.2 years of experience. Adequate shooting (12.3 successes) confirms the findings of PERBASI Bantaeng (low baseline) and SMA Makassar, due to inconsistent follow-through (CV 18.7%).

The variation in shooting height (CV=18.7%) versus dribbling/passing (<11%) indicates training specificity: repetitive passing/dribble, and shooting with insufficient drill volume. The correlation between height and shooting (r=0.62) supports biomechanical advantage.

The results of this study indicate that the fundamental skills of PERBASI Makassar athletes are in the good category (79.6%), with passing as the strongest component and shooting as the weakest. This pattern is consistent with research from the Jurnal Stok Binaguna (2023) which found that regional students and athletes generally have better passing skills than shooting skills due to the higher intensity of passing training in regular training sessions. This finding also aligns with a study by Reski (2021), which reported that although B.E.E.F. training increased free throws by 24.6%, the baseline shooting of PERBASI Bantaeng athletes remained relatively low due to unstable shooting technique. This similarity in patterns confirms that shooting is a classic problem that continues to challenge Indonesian athletes at the regional level.

The dribble time of PERBASI Makassar athletes (M=8.45 seconds) is in the good category and approaches the standard for elite athletes (<8 seconds). This finding supports research by Rizal (2020), which states that a minimum of 3–4 years of playing experience contributes to improved ball control and dribbling speed. The athletes in this study had an average of 4.2 years of experience, so it is reasonable to assume their dribbling skills are in the good category. Syamsuddin's (2024) research on high school players also showed that dribbling skills developed significantly along with physical fitness and hand-eye coordination. Therefore, the results of this study indicate that the dribbling technique foundation of PERBASI athletes is sufficiently stable for regional competition.

In the passing component, PERBASI Makassar athletes demonstrated excellent performance (M=28.2 throws). This aligns with research by Irawati (2025), which found that passing tends to be the most consistently mastered technique by players because it is the skill most frequently practiced in various drills, including wall passes, chest passes, and overhead passes. Johnson and Nelson (1986) also stated that passing techniques stabilize more quickly than dribbling and shooting because they have simpler movement patterns and are less affected by numerous game variables. These findings confirm that the regular passing training practiced by PERBASI athletes is on the right track and should be maintained as a key team strength.

In the shooting component, athletes only achieved a fair score (M=12.3), and performance variability was very high (CV=18.7%). This pattern is consistent with Reski's (2021) study in Bantaeng and the results of a study by the Jurnal Stok Binaguna (2023), which found that shooting has the highest level of inconsistency among other basic techniques. The high shooting variability is caused by several factors: follow-through instability, differences in shooting angles, a lack of repetition of game-speed-based shooting, and the dominance of passing over shooting training. Palmer et al. (2022) emphasized that shooting is the most complex technique

because it is influenced by leg strength, body axis, arm coordination, rhythm, and player psychology. Therefore, the findings of this study emphasize the need for more intensive shooting training interventions, particularly focusing on release angle stability and follow-through consistency.

Variability analysis showed that passing and dribbling had CVs of <11%, while shooting reached 18.7%. These findings reinforce the notion that shooting requires a greater training volume than other techniques. Maharani (2022) demonstrated that significant shooting improvements occurred when athletes performed 80–100 shooting repetitions per session, focusing on finishing techniques (wrist snap and arc). The findings of this study can serve as the basis for a PERBASI Makassar training program, prioritizing shooting strengthening through structured drills such as "spot shooting," "self-pass shooting," and "game-speed shooting." Thus, the research results not only describe the athletes' ability profiles but also provide practical guidance for coaches in developing evidence-based training.

Scientific contribution: The first profile of PERBASI athletes from a major city, a national benchmark for South Sulawesi. Practical implications: Prioritizing targeted shooting training, coaching education, and passing→shooting progression.

Limitations: Male sample only, non-fatigue test (stricter game conditions), no biomotor confounding measures.

5 Conclusion

PERBASI Makassar athletes mastered basic basketball techniques at a good level (79.6%), with excellent passing, good dribbling, and adequate shooting. Shooting inconsistency is a development priority for national competitions.

Recommendations: specific shooting drill programs, longitudinal biomotor skills studies, gender/junior-senior comparisons, and validation of game-speed tests.

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