

Assessment of Compliance with FIFA Running Speed Standards among Nigerian Elite Football Referees

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ABSTRACT

Football referees are expected to possess adequate physical fitness to maintain optimal positioning, make accurate decisions, and effectively manage the demands of modern football matches. Among the key components of physical fitness, running speed is essential because it enables referees to keep pace with play and maintain close proximity to critical incidents. This study assessed the compliance of Nigerian elite football referees with the Fédération Internationale de Football Association (FIFA) running speed standards during physical fitness assessment. A quasi-experimental descriptive research design was adopted for the study. The population comprised forty (40) elite football referees, including FIFA and Nigeria Premier Football League referees, who constituted the entire study population. Data were collected using the FIFA-approved repeated sprint ability (RSA) test involving six 40-metre sprints, with a maximum allowable time of 6.00 seconds per sprint for male referees. Descriptive statistics (frequency, percentage, mean, and standard deviation) and a one-sample t-test were used for data analysis at the 0.05 level of significance. The findings revealed that thirty-nine (97.5%) of the referees met the FIFA running speed requirement, while only one referee (2.5%) failed to attain the stipulated standard. The mean running time recorded by the referees was 32.84 ± 1.39 seconds for the 240-metre repeated sprint protocol, indicating a high level of compliance with FIFA fitness requirements. The study concludes that Nigerian elite football referees generally possess adequate running speed to satisfy FIFA physical fitness standards for elite officiating. It is recommended that the Nigeria Football Federation and the Nigeria Football Referees Association continue to implement structured conditioning programmes, periodic fitness assessments, and continuous monitoring to ensure sustained compliance with international officiating standards.

Keywords: Elite football referees, FIFA physical fitness standards, running speed, physical fitness, repeated sprint ability, Nigeria.

Introduction

Football is the world's most popular sport and continues to experience rapid growth in competitiveness, tactical sophistication, and physical intensity. These developments have

increased not only the physical demands placed on players but also those imposed on match officials, particularly referees, whose responsibilities include enforcing the Laws of the Game, ensuring fair play, and maintaining the integrity of football competitions (Fédération Internationale de Football Association (FIFA), 2024a). To perform these responsibilities effectively, referees must remain close to play throughout the match, requiring high levels of physical fitness, speed, endurance, agility, and cognitive alertness (Castagna et al., 2007; Weston et al., 2012). Physical fitness remains a fundamental determinant of athletic and officiating performance because it enhances movement efficiency, physiological capacity, and overall task effectiveness (Akameze, Edim, & Ogabor, 2016; Castagna et al., 2007).

Unlike football players, referees cannot be substituted during a match and are expected to sustain high-intensity movement for the full duration of play. Elite referees typically cover between 10 and 13 kilometres during a match while performing repeated bouts of sprinting, jogging, backward running, and rapid directional changes in response to transitions in play (Krustrup et al., 2009; Mallo et al., 2009). Their ability to maintain optimal positioning enables accurate observation of fouls, offside incidents, misconduct, and other critical match situations, thereby enhancing the quality and credibility of officiating (Weston et al., 2009).

Among the components of physical fitness required for football officiating, running speed is particularly important. Running speed refers to the ability to move the body over a specified distance within the shortest possible time and includes acceleration, maximal sprint velocity, and repeated sprint ability. During modern football matches, referees are frequently required to perform short maximal sprints to keep pace with counterattacks and sudden transitions between attack and defence (Castagna et al., 2007). Consequently, insufficient sprint capacity may result in poor positioning, reduced visual accuracy, delayed decision-making, and decreased overall officiating performance (Weston et al., 2012).

Research has consistently demonstrated that successful football officiating depends on an effective combination of aerobic endurance and anaerobic power. Similar observations have been reported in Nigerian studies, where cardiovascular endurance and other fitness components were identified as essential determinants of physical performance in physically demanding occupations and sporting activities (Ogabor, Ekuri & Sanusi, 2016; Stølen et al., 2005). Aerobic fitness enables referees to sustain movement throughout the match, whereas anaerobic fitness provides the

capacity for repeated accelerations and maximal sprint efforts during critical phases of play (Stølen et al., 2005; Krstrup & Bangsbo, 2001). These physiological qualities are developed through systematic conditioning programmes involving sprint training, interval training, strength development, agility exercises, and appropriate recovery strategies (Bangsbo, 1994; Slimani et al., 2020).

Recognising the increasing physiological demands of football officiating, FIFA has established standardized physical fitness tests for elite referees. The current FIFA fitness assessment comprises two principal components: the Repeated Sprint Ability (RSA) Test, which evaluates acceleration and sprint performance through six maximal 40-metre sprints separated by 60-second recovery intervals, and the High-Intensity Interval Test (HIIT), which assesses aerobic endurance (FIFA, 2024b). Compliance with these fitness standards is mandatory for referees seeking appointment to FIFA, Confederation of African Football (CAF), and elite domestic competitions. Consequently, national football associations are responsible for ensuring that referees consistently satisfy these internationally accepted requirements before being nominated for high-level competitions.

Several empirical studies have confirmed the relationship between physical fitness and officiating performance. Castagna and D'Ottavio (2001) reported that referees with superior physical fitness maintained closer proximity to active play and demonstrated greater consistency in decision-making. Similarly, Weston et al. (2009) found significant associations between referee fitness-test performance and actual movement patterns during competitive matches, while Mallo et al. (2009) observed that elite referees experience intermittent workloads comparable to those of midfield players because of frequent high-intensity running. More recently, Castagna et al. (2024) emphasized that contemporary referee development should integrate sports science, physiological monitoring, and evidence-based conditioning to sustain elite officiating standards.

In Nigeria, elite football referees undergo periodic physical fitness assessments organized by the Nigeria Football Federation (NFF) and the Nigeria Football Referees Association (NFRA) using FIFA-approved testing protocols. These assessments are intended to ensure that referees possess the physiological capacities required for effective officiating at national, continental, and international levels. Despite the routine implementation of these assessments, there is limited published evidence evaluating the extent to which Nigerian elite football referees comply with

FIFA running speed standards. Most available Nigerian studies have focused on anthropometric characteristics, cardiovascular endurance, or general physical fitness, with relatively little attention given to repeated sprint ability using the current FIFA assessment protocol.

Assessing compliance with FIFA running speed standards is important because it provides objective evidence regarding the physical preparedness of referees, informs referee selection and promotion, identifies areas requiring additional conditioning, and contributes to the growing body of sports science literature on football officiating in Africa. Such information is valuable for referee instructors, physical training instructors, sports scientists, and football administrators responsible for planning evidence-based referee development programmes.

Against this background, the present study assessed the compliance of Nigerian elite football referees with FIFA running speed standards during the Repeated Sprint Ability (RSA) test. Specifically, the study compared the cumulative sprint performance of elite Nigerian referees with the FIFA benchmark to determine whether they possess the running speed required for effective officiating at elite domestic and international football competitions.

Purpose of the Study

The purpose of this study was to assess the compliance of Nigerian elite football referees with FIFA running speed standards during physical fitness assessment.

Specifically, the study sought to determine whether the cumulative running speed performance of Nigerian elite football referees during the FIFA Repeated Sprint Ability (RSA) test complied with the benchmark established by FIFA.

Research Question

To what extent does the cumulative running speed performance of Nigerian elite football referees comply with the FIFA running speed standard during the Repeated Sprint Ability (RSA) test?

Research Hypothesis

There is no significant difference between the cumulative running speed performance of Nigerian elite football referees and the FIFA running speed benchmark during the Repeated Sprint Ability (RSA) test.

Methodology

This study adopted a descriptive cross-sectional research design to assess the compliance of Nigerian elite football referees with the Fédération Internationale de Football Association (FIFA) running speed standards during physical fitness assessment. The design was appropriate because it enabled the collection and analysis of running speed performance data at a single point in time without manipulating the study variables (Harriss et al., 2019).

The study population comprised all forty (40) Nigerian elite football referees who participated in the official FIFA physical fitness assessment. The participants included 21 FIFA-badged referees and 19 Nigeria Premier Football League (NPFL) referees actively officiating national and international competitions during the study period. Because the population was relatively small, a census sampling technique was adopted, allowing all eligible referees to participate in the study.

Running speed performance was assessed using the FIFA Repeated Sprint Ability (RSA) Test, an internationally standardized protocol for evaluating acceleration, maximal sprint speed, and repeated sprint ability among elite football referees (FIFA, 2024b). The test required participants to complete six maximal 40-metre sprints, each separated by 60 seconds of active recovery. According to FIFA regulations, the maximum acceptable time for each sprint is 6.00 seconds, giving a cumulative benchmark of 36.00 seconds for the six sprints (FIFA, 2024b). Previous studies have established the validity and reliability of the RSA protocol for assessing the sprint performance of elite football referees (Castagna et al., 2007; Weston et al., 2012).

Sprint times were recorded using electronic timing gates (photocells) where available. In their absence, calibrated digital stopwatches operated by certified FIFA Physical Training Instructors (PTIs) were used in accordance with FIFA testing guidelines. Before testing, all participants completed a standardized warm-up consisting of light jogging, dynamic stretching, mobility exercises, and progressive acceleration runs to minimize injury risk and optimize performance (Harriss et al., 2019).

Ethical approval for the study was obtained through the Nigeria Football Federation Refereeing Development Unit. The physical fitness assessment was conducted under the supervision of certified FIFA Physical Training Instructors using standardized FIFA procedures. Referees who stumbled or fell during a sprint were permitted one repeat attempt in accordance with FIFA regulations. Participants who failed more than one sprint attempt were classified as unsuccessful.

The cumulative sprint time for each referee was calculated after completion of the six sprints and compared with the FIFA benchmark of 36.00 seconds. Data were analysed using Statistical Package for the Social Sciences (SPSS), Version 25. Descriptive statistics (frequency, percentage, mean, and standard deviation) were used to summarize participants' performance, while a one-sample t-test was employed to determine whether the referees' mean cumulative sprint time differed significantly from the FIFA benchmark. Statistical significance was established at the 0.05 level, and the findings were presented in tables and interpreted in line with the study objectives and hypothesis.

Results

Research Question

To what extent does the cumulative running speed performance of Nigerian elite football referees comply with the FIFA running speed standard during the Repeated Sprint Ability (RSA) test?

Table 1

Distribution of Nigerian Elite Football Referees According to Compliance with FIFA Running Speed Standard (N = 40)

Performance Category	Frequency	Percentage (%)
Within FIFA Standard	39	97.5
Below FIFA Standard	1	2.5
Total	40	100.0

The results presented in Table 1 indicate that thirty-nine (39) elite football referees, representing **97.5%** of the participants, successfully completed the FIFA repeated sprint ability test within the stipulated running speed standard. Only one referee (2.5%) failed to attain the prescribed benchmark. These findings demonstrate a very high level of compliance with the FIFA running speed requirement among Nigerian elite football referees.

Test of Hypothesis

There is no significant difference between the cumulative running speed performance of Nigerian elite football referees and the FIFA running speed benchmark of 36.00 seconds.

Table 2

One-Sample t-test Comparing Running Speed Performance with the FIFA Benchmark (N = 40)

Variable	Test Value (Seconds)	Mean (Seconds)	SD	t	df	p
Running Speed	36.00	32.84	1.39	-14.38	39	<.001

The one-sample t-test compared the cumulative running speed performance of Nigerian elite football referees with the FIFA benchmark of 36.00 seconds. The referees recorded a mean completion time of 32.84 ± 1.39 seconds, which is lower than the FIFA benchmark, indicating superior performance. The statistical analysis demonstrated that the observed mean running time differed significantly from the FIFA benchmark ($p < .001$). Consequently, the null hypothesis was rejected.

The findings indicate that Nigerian elite football referees not only complied with the FIFA running speed requirement but, on average, completed the repeated sprint protocol significantly faster than the minimum performance standard prescribed by FIFA. This suggests that the referees

possess an adequate level of sprint performance required for effective officiating at elite national and international football competitions.

Discussion of Findings

This study assessed the compliance of Nigerian elite football referees with the FIFA running speed standard using the Repeated Sprint Ability (RSA) test. The findings showed that 97.5% of the referees successfully met the FIFA benchmark, with only one referee failing to attain the prescribed standard. Furthermore, the mean cumulative sprint time (32.84 ± 1.39 s) was significantly lower than the FIFA benchmark of 36.00 seconds, indicating that the referees performed better than the minimum standard required for elite officiating. These findings demonstrate that Nigerian elite football referees possess the running speed necessary to cope with the physical demands of modern football and reflect the effectiveness of the physical conditioning programmes implemented by the Nigeria Football Federation (NFF) and the Nigeria Football Referees Association (NFRA) (FIFA, 2024b). This finding further supports previous Nigerian evidence highlighting the importance of maintaining optimal physical fitness for sustained performance in sports and physically demanding professions (Akameze et al., 2016; Ogabor, Ekuri & Sanusi, 2016).

Running speed is a fundamental component of football refereeing because it enables officials to maintain close proximity to play, obtain favourable viewing angles, and make accurate decisions during rapidly changing match situations. Modern football requires referees to perform repeated accelerations, short sprints, and rapid changes of direction throughout the match, making repeated sprint ability essential for effective officiating (Castagna et al., 2007; Stølen et al., 2005). Referees with superior sprint performance are more likely to maintain optimal positioning and reduce decision-making errors during critical phases of play (Weston et al., 2012).

The findings are consistent with previous studies reporting that elite football referees require high levels of aerobic endurance and repeated sprint ability to sustain performance throughout competitive matches. Castagna and D'Ottavio (2001), Krstrup et al. (2009), Mallo et al. (2009), and Weston et al. (2009) all demonstrated that referees with better physical fitness maintain closer proximity to active play, recover more effectively between high-intensity efforts, and exhibit improved movement efficiency. Similarly, Castagna et al. (2024) emphasized that

contemporary referee development should integrate sports science, individualized conditioning, and continuous fitness monitoring to sustain elite officiating performance.

The excellent performance observed in this study suggests that Nigerian elite referees benefit from regular participation in structured conditioning programmes, preseason fitness preparation, and mandatory FIFA fitness assessments. Sprint training, high-intensity interval training, strength development, and agility exercises are known to improve repeated sprint ability, acceleration, and recovery capacity, all of which are essential for maintaining the movement demands of elite football officiating (Bangsbo, 1994; Slimani et al., 2020). The high compliance rate therefore indicates that current referee development programmes in Nigeria are effectively preparing officials for elite domestic and international competitions.

Although only one referee failed to meet the FIFA running speed benchmark, this finding highlights the importance of continuous physical monitoring and individualized training. Reduced sprint performance may result from inadequate training, injury, fatigue, advancing age, or insufficient recovery, all of which can negatively influence officiating effectiveness (Matute-Llorente et al., 2020). Consequently, referees who do not satisfy FIFA fitness requirements should receive targeted conditioning before subsequent assessments.

The findings have important practical implications for football administration in Nigeria. Objective physical fitness assessment should remain an essential criterion for referee selection, promotion, and appointment to elite competitions. Furthermore, referee development programmes should continue to integrate sports science support, including physiological testing, strength and conditioning, nutritional guidance, injury prevention, and recovery management, to sustain high standards of physical preparedness (Impellizzeri et al., 2019; Harriss et al., 2019).

This study also contributes to the limited body of literature on football referee physiology in Sub-Saharan Africa by providing contemporary evidence on compliance with FIFA running speed standards among Nigerian elite referees. Future studies should employ longitudinal designs to examine seasonal changes in sprint performance and investigate the influence of age, officiating experience, body composition, training load, and injury history on compliance with FIFA fitness standards. The application of modern monitoring technologies, such as Global Positioning Systems

(GPS), heart-rate telemetry, and movement analysis systems, would further strengthen referee performance evaluation and conditioning programmes (Castagna et al., 2024).

Overall, the findings demonstrate that Nigerian elite football referees possess the running speed required for effective officiating at elite domestic and international competitions. The exceptionally high level of compliance reflects the success of existing conditioning programmes and supports the continued implementation of regular FIFA-standard physical fitness assessments and evidence-based referee development strategies.

Conclusion

This study assessed the compliance of Nigerian elite football referees with the FIFA running speed standard using the Repeated Sprint Ability (RSA) test. The findings demonstrated that the overwhelming majority of the referees (97.5%) successfully attained the FIFA-prescribed running speed requirement, while only one referee failed to meet the stipulated benchmark. Furthermore, the average cumulative sprint time recorded by the participants was considerably better than the FIFA minimum standard, indicating that Nigerian elite football referees possess the level of running speed required to effectively officiate elite football competitions.

The findings suggest that the current physical conditioning programmes implemented by the Nigeria Football Federation (NFF) and the Nigeria Football Referees Association (NFRA) have contributed positively to the physical preparedness of elite referees. Adequate running speed enables referees to maintain optimal positioning, closely follow the dynamics of play, and make accurate decisions during matches. Consequently, maintaining compliance with FIFA physical fitness standards remains essential for sustaining high-quality football officiating at national, continental, and international levels.

Overall, the study provides empirical evidence that Nigerian elite football referees possess satisfactory running speed performance consistent with FIFA physical fitness requirements. Continuous investment in structured physical conditioning, regular fitness assessment, and evidence-based performance monitoring will be essential to maintain these standards and further improve officiating performance.

Practical Implications of the Study

The findings of this study have important implications for football administration, referee education, and sports science practice in Nigeria. First, the high level of compliance observed among Nigerian elite football referees indicates that existing referee conditioning programmes are effective and should be sustained. Second, objective physical fitness assessment should remain an essential criterion for referee selection, promotion, and retention within the Nigeria Football Federation and the Nigeria Football Referees Association. Third, sports scientists and Physical Training Instructors should continue to design individualized training programmes aimed at improving sprint performance, acceleration, recovery capacity, and overall match fitness. Finally, the findings provide baseline information that can guide future policy decisions regarding referee development and physical performance standards in Nigerian football.

Recommendations

Based on the findings of this study, the following recommendations are made:

1. The Nigeria Football Federation (NFF) and the Nigeria Football Referees Association (NFRA) should continue to conduct regular FIFA-standard physical fitness assessments and strengthen year-round conditioning programmes to ensure that elite referees consistently meet international running speed requirements.
2. Physical Training Instructors should implement individualized training programmes for referees who fail to attain the FIFA running speed benchmark, with emphasis on repeated sprint ability, acceleration, muscular power, aerobic endurance, and injury prevention.
3. Sports science support services, including physiological monitoring, nutritional counselling, recovery management, and the use of modern performance assessment technologies such as electronic timing gates, should be integrated into referee development programmes to enhance physical preparedness and officiating performance.
4. Future studies should investigate the influence of age, officiating experience, body composition, training load, and injury history on compliance with FIFA physical fitness standards using larger samples and longitudinal research designs.

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