A cross-sectional study examining Nigerian footballers' knowledge and attitudes towards sport-related concussion

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01 Rationale

Sports-related concussion (SRC) continues to receive considerable attention by national governing bodies, governments, sports clubs, the media, and the sports medicine community. Due to the increased attention and scrutiny, many strategies to minimise the risk of SRC and associated long-term implications (e.g., heading), detect and diagnose athletes suspected of sustaining a SRC (e.g., instrumented mouthguards), and manage athletes (e.g., return to play protocols) have been proposed. Whilst important, there is little doubt that athletes' knowledge and attitudes towards concussion remain an integral component of any strategy given the association this has with adherence and compliance.

Several studies have determined footballers' knowledge and attitudes towards SRC (Gallagher & Falvey, 2017; Williams et al., 2016), though these are limited to the Western World. It is unclear if these findings are reflective of those in developing countries such as Nigeria where soccer is played by over 6.5 million people and serves as an instrument for personal development. There is also the potential for differences in access to medical support, culture, ethnicity, and educational status to impact SRC knowledge and attitudes.

02 Research Questions

1. What is the level of knowledge around SRC amongst soccer players in Nigeria?
2. What is the general attitude of Nigerian soccer players towards SRC?
3. Does the knowledge of SRC affect their attitude towards it?
4. What key contextual information might be associated with Nigerian footballers' SRC knowledge and attitudes.

03 Methods

Study design: Cross-sectional

Participants: Participants included any individual affiliated to a registered football club in Nigeria who competed in the 11-aside game. They were over 18 years old and had been affiliated for at least 12 months. An estimated 300 responses were needed for adequate precision around the point estimate.

Recruitment: The questionnaire was shared via gatekeepers at multiple Nigerian football clubs who distributed this by various channels (e.g., social media, newsletter, websites). The questionnaire was available between August 2021 and December 2021.

Procedures: The questionnaire was developed online and included a section on demographic information and, with permission, the Rosenbaum Concussion Knowledge and Attitude Survey Student Version (ROCKAS-ST). The questionnaire was piloted before being shared with potential participants. Knowledge was scored as the sum of section two, three and six of the ROCKAS-ST. Attitudes was the total of sections 4 and 5.

Analysis: Concussion knowledge and attitudes were determined as a raw value. The numbers of participants achieving "high" (>60%) and "low" (<60%) knowledge and attitudes index were also determined and used in a regression analysis to explore the association between key contextual factors with a "high" score (O'Reilly et al., 2020). Results from the final model are summarised below; the uni- and multivariable mode can be found by scanning the QR code.

Ethics: Approved by the Faculty of Health and Education Research Ethics Committee at Manchester Metropolitan University (no. 35654).

04 Results

Response, Concussion History and Demographics

In total, 331 responses were received from 10 football clubs within Nigeria. All participants completed all sections of the questionnaire. The validity index was passed.

25 (7.6%) respondents reported previously being diagnosed with concussion, whilst 40 (12.1%) suspected a concussion but were not diagnosed. 33 (10.6%) respondents suspected a concussion but did not need seek medical help.

Table 1. Frequency and proportion of respondents across sub-groupings.

Characteristic	Responses	Characteristic	Responses
Age		Playing Position	
18-25 years	160 (48.3%)	Defender	62 (18.7%)
26-30 years	110 (33.2%)	Midfielder	126 (38.1%)
31-35 years	49 (14.8%)	Stroker	110 (33.2%)
36-40 years	7 (2.1%)	Goalkeeper	33 (10.0%
> 40 years	5 (1.5%)	Paying level	
Sex		Amateur	117 (35.3%)
Male	224 (67.7%)	Semi-professional	111 (33.5%)
Female	98 (29.6%)	Professional	82 (24.8%)
Prefer not to say	9 (2.7%)	Other	21 (6.3%)
Education		Ethnicity	
Primary	3 (0.9%)	Yoruba	143 (43.2%)
Secondary	100 (30.2%)	Igbo	67 (20.2%)
Tertiary	188 (56.8%)	Hausa	57 (17.2%)
Other	40 (12.1%)	Prefer not to say	49 (14.8%)
Playing Experience		Other	15 (14.5%)
< 5 years	52 (15.7%)		
5-10 years	134 (40.5%)		
> 10 years	145 (43.8%)		

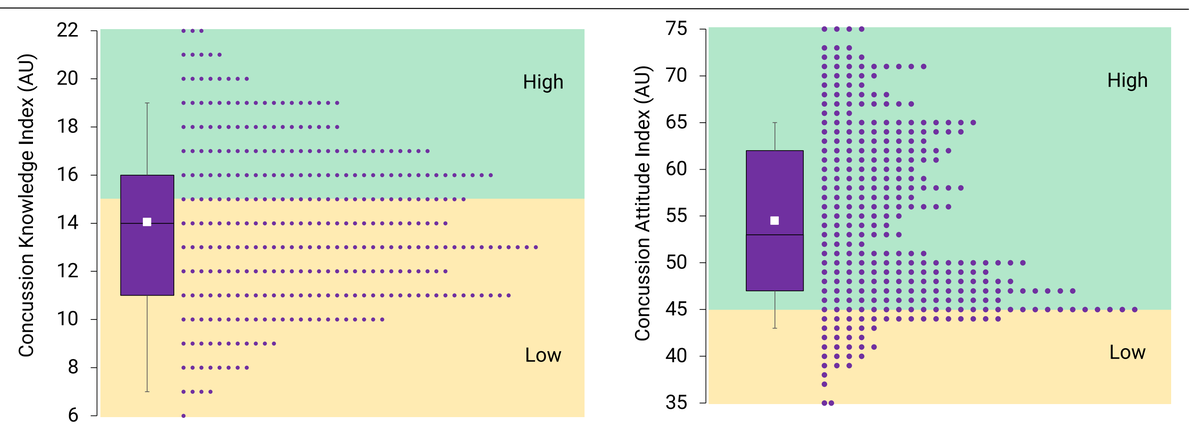

Figure 1. Concussion knowledge (left) and attitude (right) index with reference to high and low scores.

- Results for the concussion knowledge index are presented in Figure 1. The most common misconception about concussion was in reference to diagnostic scans whereas the most common correct answer referred to emotional changes. The correct symptoms identified ranged from 21.1% (nausea) to 77.6% (headache). Incorrect symptoms identified ranged from 17.5% (abnormal smell, neck pain) to 36.6% (nosebleed).
- Results for the concussion attitude index are also presented in Figure 1. Most individuals gave a "safe" response when presented with various scenarios (39.2 to 76.7%), though when asked about if others felt an athlete can return despite persisting symptoms, more unsafe responses were given (safe = 36.5%, neutral = 26.3%, unsafe = 37.2%).
- There was a large correlation between knowledge and attitudes (r = 0.530, $p < 0.001$).
- In the final model, men had 4.86 times greater odds of scoring "high" for knowledge, and those with < 10 years of experience working with Nigerian football had 46-63% lower odds.
- In the final model, men had 7.11 greater odds of scoring high for attitude whilst all playing positions were slightly higher than 1.0 when compared to goalkeepers.

05 CONCLUSIONS

The results of this study suggest that Nigerian footballers have a moderate level of SRC knowledge, satisfactory symptom recognition, and high SRC attitudes. Those working with Nigerian football may consider these findings when allocating time and funds to this area of sport medicine as well as when seeking strategies to improve concussion knowledge, considering attitudes, sex and playing experience.

06 References

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