Plan Overview

A Data Management Plan created using DMPonline

Title: UEFA - The impact of ball pressure on cognition within current IFAB guidelines

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Project abstract:

Football is the world’s most popular sport with over 265 million players. In England 11.8 million players participate in organised football matches and training each week. While regular participation in sport and physical activity has many benefits for health and well-being, there is increasing public concern and research scrutiny regarding the long-term negative consequences of repeated ball-to-head impacts, an integral skill in football known as heading.

To minimise the potential long-term harm associated with heading, a small number of football associations around the world have implemented Heading Guidelines. However, the evidence underpinning the strategies contained within these guidelines is unclear. Additionally, most football associations globally currently do not endorse a position on heading including the sport’s governing body, FIFA. This presents a perfect opportunity to explore the safest possible manner of heading within football’s lawmakers IFAB’s current laws.

At present, IFAB guidelines suggest that footballs must be between approximately 8.5psi and 15.6psi at time of kick off. It was well-documented that players were vocal in their criticism of the pressure of the ball in the 2023 Women’s World Cup, and there were even instances where heading the football led to medical attention, something that is unusual to see in the game. Some even cited the ball pressure as the reason for this phenomenon. Therefore, this study aims to uncover how the ball pressure influences players, within the current guidelines.

Cognition is important ability within football but also in daily functioning. Ensuring we maintain a good level of cognition can safeguard us from negative issues in later life, as well as improving our performance when playing football. It is for this reason, that cognitive flexibility will be investigated at different intervals during this experiment, to determine whether this is impaired using a higher-pressure football compared with a lower pressure football. Importantly, we can also assess the differences between male and female footballers.

From this study, we can provide evidence that we may need to reduce the guidelines on pressure of the ball, perhaps closing the gap a little closer to the lower bound. If we find a difference between the sexes, it may be that we can provide suggestions of different pressured balls between the men’s and women’s games, to ensure safety for all.

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UEFA - The impact of ball pressure on cognition within current IFAB guidelines

Data Collection

What data will you collect or create?

All participants will begin by having their height and weight measured before completing the general questionnaire. Here, the participant information sheet will be presented, and a consent form will follow on the next screen with consent electronically obtained using agreement statements. On the next page, participants will answer various demographic questions that will be used to describe the participants that took part as well as grouping them for analysis (biological sex). Once they have completed this questionnaire, they will step onto the K-Plates that will measure their postural control before then completing the initial cognitive battery (i) on an iPad.

Upon completion of cognitive battery (i), participants will be randomly allocated to one of three conditions in the heading aspect of the study. This is regarding the ball pressure that they will be exposed to. A third of the male participants (n = 27) will head a ball with 9psi, a third with 12psi and a third with 15psi. This will be replicated with female participants. These ball pressure values include the lower, middle, and upper bounds currently recommended by IFAB and therefore are “legal” within the laws of the game.

Participants will be directed to a 1.5m x 1.5m area that is set out with cones and the researcher will set up the ball launcher to deliver ten floated balls to the participant to head back to the researcher. The Meter Measuring Wheel will be used to measure the distance the ball will be launched from (25 metres). Once the participant has made ten successful headers, participants are to step onto the K-Plates and complete the cognitive battery again (cognitive battery (ii)). Successful headers are defined as heading the ball back to the researcher while remaining in the designated area. After they have completed cognitive battery (ii), the researcher will set up the ball launcher to deliver ten direct balls to the participant to head back to the researcher. The Meter Measuring Wheel will be used again to measure 6 metres from the participant. Again, after ten headers, they step onto the K-Plates and complete the cognitive battery a third and final time (cognitive battery (iii)). Now the testing is complete, participants will have completed the cognitive battery three times (baseline, after floated heading, after direct heading). Before leaving, participants will complete the football questionnaire asking them questions about the ball they have been heading in the study. The debrief form will follow.

Now, we will analyse the data to determine whether higher ball pressure has an acute negative impact on cognition and whether footballers are able to recognise the difference.

How will the data be collected or created?

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Documentation and Metadata

What documentation and metadata will accompany the data?

I will supply a glossary and instructions on how to use and interpret the data alongside the dataset when uploading to Open Science Framework.

Ethics and Legal Compliance

How will you manage any ethical issues?

Participant data will remain confidential and will be stored safely in the researcher's OneDrive in a password protected folder. Participant data will also be identified using a code that the participants create themselves. Only the participant and researcher will be aware of these codes.

How will you manage copyright and Intellectual Property Rights (IPR) issues?

The data will be the intellectual property of both the University of Bradford and UEFA.

Storage and Backup

How will the data be stored and backed up during the research?

The data will be stored safely on the researchers university OneDrive account.

How will you manage access and security?

Only the researcher will have access to the data and this will be behind a password protected folder.

Selection and Preservation

Which data are of long-term value and should be retained, shared, and/or preserved?

This data will have strong implications for the pressure of the football from grassroots to the elite level. Therefore, the data should be retained and preserved so it is useable in subsequent studies as secondary data.

What is the long-term preservation plan for the dataset?

This data will be available on Open Science Framework, where researchers will have access to it.

Data Sharing

How will you share the data?

This data will be available on Open Science Framework, where researchers will have access to it.

Are any restrictions on data sharing required?

n/a

Responsibilities and Resources

Who will be responsible for data management?

The lead researcher.

What resources will you require to deliver your plan?

n/a