

What are the barriers to effective sports nutrition in semi-professional rugby union players and how could these barriers be overcome?

Introduction

Nutrition is seen as a key component in improving an athlete's performance in a wide range of disciplines and sports (Maughan and Shirreffs, 2011). This principle is true of rugby union, a field-based contact sport which combines both aerobic and an aerobic efforts interspersed with periods of rest (Beard et al, 2019). Posthumus et al (2021), suggested that the intense and contact-based characteristics of rugby result in great energy needs, both for fuelling for games and post-match recovery. Even at an elite level, rugby union players have been found to have sub-optimal diets, overconsuming protein and under consuming carbohydrates and energy overall (Bradley et al, 2015; Phillips and Van Loon, 2011; Posthumus et al, 2021). This is despite a number of elite sporting teams having access to sport scientists and sports nutritionists/dietitians (Heaney et al, 2011). Jenner et al (2019), found an overemphasis on body composition amongst semi-professional rugby union players, likely due to team culture, which caused low energy intakes. Semi-professional teams are likely to have limited, if any, access to qualified nutrition professionals. This will likely further exacerbate the problems seen in elite rugby players, meaning the development and availability of better resources could be an essential innovation in rugby at all levels. Heaney et al (2011), stated that, outside of qualified professionals, the most used sources of information are school, tertiary education programmes, books, sports magazines, the media, and the internet. As Hull et al (2016), stated that a positive impact can be observed on dietary habits when sports dietitians are the primary source of information, it is imperative that the information in the media, on the internet and in books and magazines is coming from qualified nutritionists/dietitians. Despite Dunne et al (2019), stating that working is already underway to ensure that good quality information is available through social media platforms, Trakman et al (2019), suggested that there is still a great need for more qualified professionals to spread appropriate information on the internet. There are several barriers to a good standard of nutrition in athletes, including time to prepare/plan food, lack of funds and lack of knowledge/education (Jagim et al, 2021).

The aim of this study is to gain a better understanding of the barriers that exist for semi-professional sportspeople, allowing practitioners to make specific and more realistic recommendations for athletes that will have to balance several factors. Sports nutritionists/dietitians should strive to educate athletes and coaches, allowing better and more fluid practices to be commonplace (Hull et al, 2016). Despite athletes being better nutritionally informed than the general population, knowledge is still poor amongst athletes. Nutrition is reactive, coach-led and funding dependant, with more emphasis on understanding food labels and buying/preparation skills needed (Heaney et al, 2011). Research will be conducted in Welsh semi-professional rugby union players, by using a questionnaire. The questionnaire will strive to provide good quality information on which barriers are the most significant in this population, whether they are getting their information from appropriate places and whether their other occupation is impacting their rugby. This study will look at similar research in the attitudes, perceptions and challenges aspect of Hitendre et al (2022). A questionnaire was used by Rash et al (2008), to collect data on the relationship between nutritional knowledge and diet quality. This study could also be considered in moving forward as nutritional knowledge and diet quality would be a natural progression from here.

Conclusion

Participants rated nutritional knowledge 3.6/5, with some rating themselves as 5/5. This is high as no one works in the sector of nutrition. Macronutrient knowledge was lower therefore when asked more specific nutritional questions, they perceive their knowledge to be lower. Participants primarily got their information from the internet and/or social media. This finding will help ensure information is being posted in the appropriate places. Knowing the habits of semi-professional athletes, allows better signposting. Significance was found in perceived nutritional knowledge between those that have had 7+ contacts with qualified nutrition professionals, and those that have had no contacts. This shows how important these contacts with professionals are. It is encouraging that the highest priority amongst the population was eating for performance, though this could be higher. More knowledge of how to better support semi-professional rugby players will encourage people's diets to be more goal orientated. Eating for health was also high in terms of priorities, which is positive as a healthy diet should underpin performance (Logue et al, 2018).

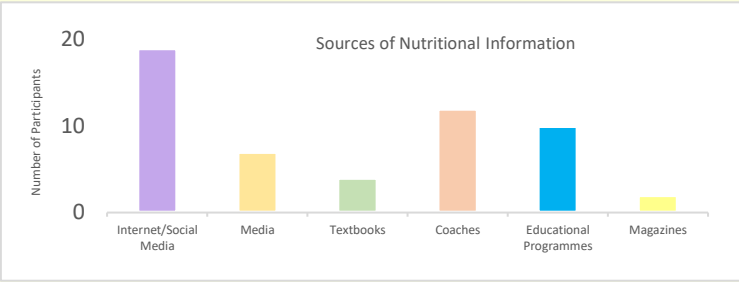
Methods

Research was done using a survey questionnaire. After gaining institutional ethical approval, 24 male semi-professional rugby union players (age-27.8±4.5) filled out a validated questionnaire. All participants consented to their data being analysed and shared. Williams (2007) stated that quantitative research can be conducted by using a questionnaire. The questionnaire was developed, based and verified using the Attitudes, Perceptions and Challenges questionnaire by Hitendre et al (2022) and similar style and number of questions were asked. Majority of the questions were multiple choice or a rating so that answers were consistent. Participants were then given the opportunity to add any more points at the end of the questionnaire. The questionnaire was conducted on Microsoft Forms. All data given was anonymous, there was no risk of carrying paper copies, all data was stored in a safe and secure place and the questionnaire was easily sent out to participants. The results were collated and downloaded on to Microsoft Excel. Results were put into graphs produced using Microsoft Excel. Results were statistically analysed using SPSS statistics programme. In line with information provided by Kim (2017), a One-way ANOVA was used to analyse whether the number of contacts with qualified nutritionists had a significant difference on the participants' perceived nutritional knowledge. To see a correlation between the number of contacts and perceived nutritional knowledge, the set of data was tested for normality using descriptive statistics. As the set of data was not normally distributed, a Spearman correlation test was run, in line with Akoglu (2018), also using this study's correlation coefficient. Research was predominantly quantitative.. This is consistent with the statement by Petrovic et al (2017), who stated that sport science traditionally uses quantitative methods to gain conclusions. Qualitative information could be given in the final question.

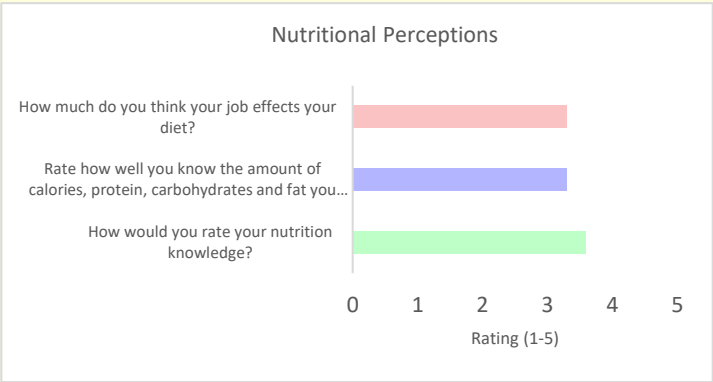
A small correlation towards participants that had a higher perceived nutrition knowledge wanted further contacts with these professionals suggests that those of which have had contact with professionals want more contacts. There is also an upward trend in number of contacts compared with their perceived nutritional knowledge. Some participants that had had no contacts with qualified nutritionists rated themselves the same in perceived nutritional knowledge as those who had had 7+ contacts, and thus, the Dunning-Kruger effect could be observed (Dunning, 2011). A lack of time to cook/prepare food, lack of ideas of what to cook and social life and food choices being the biggest barriers suggest creating resources for good food that does not take long to prepare/cook. Help to make better food choices when nutrition is outside of their control is also desirable. More work should be done to spread knowledge of what the SENR is.

Results

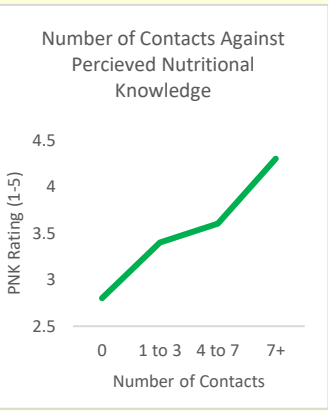
19 participants stated that they get their nutritional information from the internet and or social media. 12 got their information from coaches, 10 from educational programmes, 7 from the media, 4 from textbooks and 2 from magazines.



Participants rated their nutritional knowledge at 3.6/5, rated how well they know the amount of macronutrients they need at 3.3/5 and participants rated that work effects what they're eating at 3.3/5.



Participants perceived nutritional knowledge against the number of contacts with a qualified nutritionist-No contacts resulted in a mean rating of 2.8, 1-3 contacts produced a rating of 3.4, 4-7 contacts produced a rating of 3.6 and over 7 contacts produced a rating of 4.3. Though not significant there is a clear pattern that the number of contacts does effect perceived nutritional knowledge. There was a significant difference between having no contacts and having 7+ contacts (0.05>p-value=0.007).



Performance was the most common priority with 9 out of 24 prioritising this (37.5%). Health was second 16 out of 24 people (66.7%) put it within their top 2 priorities. Having no target was the least common answer within the top 2 priorities, with 4 putting it in their top 2. It was also the most common answer in the lowest priority category. Desire for more contact with nutritionists on the SENR rating was 3.6/5. Compared with the participants' perceived level of nutrition a small positive correlation was found (r value=0.124). The more perceived nutritional knowledge the person had, the more contact they wanted with a nutritionist on the SENR, but the effect size was very small. Just 8.3% of the participants had heard of the SENR. 13/24 found Lack of time to cook a barrier, 12/24 found Social life and food choices a barrier. No one found food labels and the person cooking not understanding their nutritional needs a barrier. Struggling for ideas of what to cook was also a prominent with 9/24 stating it as a barrier. Job category and activity did not have an effect on diet knowledge or effect perceived diet quality.

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