

BINDURA UNIVERSITY OF SCIENCE EDUCATION



**DESIGNING AN ADAPTED PERFORMANCE-ORIENTED NUTRITIONAL PLAN
FOR ROYAL COMFORT GROUP OF SCHOOLS RUGBY TEAM**

By

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**A DISSERTATION SUBMITTED IN PARTIAL FULFILMENT OF THE
REQUIREMENTS FOR THE DEGREE OF BSc HONOURS IN SPORTS SCIENCE AND
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DECLARATION FORM

I certify that this Sport Science and Management research, submitted to Bindura University of Science Education, is my original work and has not been submitted for any diploma or degree at this or any other institution. Research “designing an Adapted Performance-Oriented Nutritional plan for Royal Comfort Group of School’s Rugby Team” has not been submitted for any degree or diploma. I affirm that, to the best of my understanding, all references and sources used have been credited, and any ideas, data, or material taken from others work have been accurately cited in line with academic guidelines. This dissertation is my original work and reflects my own contributions to the field, for which I accept full responsibility.

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CHAPTER 1: PROBLEM AND ITS SETTING

1.1 INTRODUCTION

The purpose of this study was to design a culturally-appropriate, performance-enhancing nutrition plan for the Royal Comfort Junior Rugby Team. By examining current nutritional practices, knowledge gaps, and contextual limitations that these young athletes are faced with, this research aims to formulate a workable nutrition plan that promotes athletic performance while considering the socioeconomic and cultural realities of junior rugby in Zimbabwe.

1.2 BACKGROUND OF THE STUDY

Adolescent rugby players are faced with individual physiological demands that require specific nutrition to complement training loads, developmental stages, and physical resilience to injury (Naughton et al., 2020). In Zimbabwe, there is limited sports science infrastructure, allowing junior athletes to rely on generalized and sometimes inadequate nutrition. A reliance on generalized nutrition further encourages the risk of the athlete underperforming, experiencing injury, or developing a long-term health consequence (Masterson et al., 2015). Zimbabwean adolescents face a dual burden of malnutrition, the two being undernutrition and obesity when considering the prevalence of overweight and obesity amongst adolescents (Mushonga et al., 2017). For example, studies show that 41% of overweight and obese urban women exist, whilst 35% of adolescents are iron deficient (FAO, 2022). These poor nutritional responses impede muscle repair and recovery, cognition during a sporting role, and general development (Gibson et al., 2021).

Rugby players at Royal Comfort like many other Zimbabwean athletes live in constrained food environments that can be influenced by economic access, cultural practices and knowledge availability. For example, with runaway inflation (285% in 2022), players may not have many food choices that provide protein and/or supplements. Additionally, while starch is hidden in the Zimbabwean diet, the proportion of carbohydrates to protein necessary for recovery may be compromised, particularly with traditional staples like sadza. The wider access to a fast-food diet for adolescents (Chopera, 2018) and the fact there is little to no sports nutrition accredited

education in the schools means Zimbabwean adolescents are left without sports-specific nutritional information. Models of sports nutrition are based on elite level and high-income western sports.

1.3 STATEMENT OF THE PROBLEM

or adolescent rugby players in Zimbabwe, food and nutrition remain major barriers to athletic performance and overall health, both in the short and long term. Rugby is a sport with distinct physiological demands that require balanced and well-timed nutrition according to each player's age, growth stage, and training load. Yet many young athletes still depend on general household eating patterns and ideas about food that are not tailored for sport. This often results in underperformance, slow recovery, and a higher risk of injury. In practice, efforts to address this challenge have been limited. Most schools and local rugby teams do not have structured nutrition programmed or access to trained dietitians. Players often eat whatever is available at home or provided at school, without guidance on how meal timing, hydration, and recovery nutrition affect performance. Some coaches and families have started to show more awareness of the importance of diet, and there are small examples of teams trying to use locally available foods such as moringa and groundnuts as protein sources. However, these efforts are isolated and not guided by any national framework or policy, meaning that the problem remains largely unresolved. Existing studies also show that nutrition knowledge among adolescent athletes in developing countries is still low and that most existing sports nutrition models were designed for elite athletes in developed countries. These models often ignore the socioeconomic and cultural factors that shape food choices and access in African contexts (Thomas et al., 2016; Kerksick et al., 2018; Onywera et al., 2022). Research further suggests that cultural acceptability and affordability are critical for young athletes to maintain proper diets (Reguant-Closa et al., 2020; Pelly et al., 2023). Studies focusing on adolescent athletes also emphasize the need for age-specific and context-appropriate meal plans that support growth, development, and performance (Lloyd et al., 2023; Hannon et al., 2021). Despite this growing recognition, there are still no locally developed and culturally adapted nutrition plans in Zimbabwe that address the real conditions facing adolescent rugby players. The lack of structured, affordable, and context-fit nutrition strategies continues to limit the performance potential of young athletes. This study therefore aims to respond to that gap by developing an adapted, performance-oriented nutrition plan that reflects local food availability, cultural

preferences, and economic realities to improve both performance and recovery among junior rugby players in Harare.

1.4 RESEARCH QUESTIONS

Primary Research Question

What key elements should be considered in designing a culturally adapted, performance-oriented nutrition plan for adolescent rugby players in Harare?

Subsidiary Research Questions

1. What are the existing dietary practices, food choices, and meal-timing behaviours among Royal Comfort Junior Rugby Team members?
2. How do players manage hydration before, during, and after training or competition?
3. How do players perceive the role of nutrition in improving performance, recovery, and overall health?
4. What challenges and levels of satisfaction do players report regarding the current nutritional support they receive?
5. How can locally available foods and cultural preferences be integrated into a cost-effective performance nutrition plan?

1.5 RESEARCH OBJECTIVES

Primary Objective

To design an adapted, performance-oriented nutrition plan for the Royal Comfort Junior Rugby Team in Harare.

Subsidiary Objectives

1. To identify the dietary practices, food choices, and meal-timing behaviours of Royal Comfort Junior Rugby Team members in Harare.
2. To assess the hydration practices and knowledge of adolescent rugby players within the team.
3. To examine how players perceive the role of nutrition in athletic performance and recovery.

4. To determine players' experiences and satisfaction with the current nutritional support provided by the Royal Comfort Group of Rugby Teams.
5. To develop practical recommendations for implementing a culturally adapted, performance-oriented nutrition plan suitable for adolescent rugby players in Zimbabwe.

1.6 SIGNIFICANCE OF THE STUDY

The significance of this study is multi-layered as it addresses important gaps in policy, theory, practice, science, and innovation through the frame of nutrition for adolescent athletes in Zimbabwe. The evidence-based recommendations contribute to policy by identifying useful information that can be utilized in creating national guidelines on sports nutrition that incorporate culturally relevant food options in youth sport programming. The theoretical contribution challenges existing Western paradigms of sports nutrition by justifying the need for its localization that acknowledges the socioeconomic and cultural context that shape athletes in Zimbabwe. The practical contribution was the provision of a Ghanaian nutrition plan that could be an immediate intervention on diet to enhance their performance and recovery of young rugby players. The scientific contribution is the investigation of nutrition as a concept in under-resourced contexts. Despite nutrition being the 'cornerstone of athlete development' and many studies conducted worldwide, the studies on the dietary requirements of adolescents are very limited. If adolescents are to become fully developed athletes, empirical evidence and research valid data are needed to help understand the issues that adolescent athletes are facing. The innovation contribution is highlighted in the study investigating the role of local foods as alternatives protein sources such as moringa. This is of particular importance to coaches and athletes with regard to promoting a sustainable diet where food can be obtained from local sources and can be replicated while provided to athletes in similar situations. This research can fill these gaps while also creating a holistic approach towards sports nutrition.

1.7 DELIMITATIONS OF THE STUDY

This study is limited to the Royal Comfort Group of Schools Junior Rugby Teams in Harare and specifically only adolescent rugby players aged 12 to 18 years. It only examined nutrition as it pertains to this group and did not examine nutrition for other sport or other age groups. The research will only look at food available locally and culturally pertinent dietary habits applicable to Zimbabwe hence it will not address international dietary guidelines that may not be other

applicable outside that context. The research sought address medical or psychological facets of performance but merely examine nutrition as it pertains to success in the sports of Rugby.

1.8 STUDY LAYOUT

Chapter 1: the chapter lays out the problem and the objective of the study

Chapter 2: deals with literature review

Chapter 3: Outlines the methods and materials used in this study

Chapter 4: Outlines the results and discussion of the study

Chapter 5: Concludes the study and provides recommendations

1.9 CHAPTER SUMMARY

The chapter highlighted the nutritional challenges and trends. The next chapter provides the review of the literature.

CHAPTER 2: LITERATURE REVIEWS

2.1 INTRODUCTION

In order to develop an adapted, performance-oriented nutrition plan for junior rugby teams, it is essential to understand the concepts that underpin eating habits and athletic performance. This literature review will view these concepts through key terms: "adapted nutrition," "performance-oriented nutrition," and "junior rugby teams". Overall, this literature review will summarize the definitions, importance, and interdependence of these terms within the context of adolescent athletes.

2.2. CONCEPTUAL REVIEW

Adapted nutrition

This refers to dietary strategies tailored to the specific needs of various groups, recognizing that each group may be influenced by diverse cultural, socioeconomic, and physiological characteristics. Horne et al. (2016) have described adapted nutrition as addressing the macronutrient and micronutrient needs of athletes but also considering local food availability and cultural preference. Adaptation of nutrition is especially important in less economically developed resources such as Zimbabwe in which, due to the economic climate, there are barriers to optimal food sources for the athletes. Adaptation takes place when athletes can find local food options that meet their nutritional needs through cultural practices. At this level of junior rugby, adapted nutrition means developing a nutrition plan that supports athlete performance while keeping players connected with traditional dietary habits.

Performance nutrition

Performance nutrition is the strategic intake of foods and beverages that seeks to improve performance, recovery and overall health in rugby players. Thomas et al. (2016) suggested that performance nutrition should encompass the amount of nutrients consumed and the timing of consumption as well as the qualitative portion of the meal to training and competition. The three main areas of emphasis in performance nutrition included carbohydrate for energy, protein for muscle recovery and hydration for optimal physiological functioning. The interaction between this notion and

Junior Rugby Teams

Junior rugby teams consist of young athletes typically aged between 12 and 18 years who are engaged in competitive rugby, a sport characterized by its physical demands and strategic complexity. The physiological and psychological needs of this age group are distinct, as they are undergoing significant growth and development. According to Naughton et al. (2020), young athletes require tailored nutritional strategies to support not only their performance but also their overall health and development. The challenges faced by junior rugby teams often include limited access to nutritional education and resources, making it essential to develop interventions that are both practical and relevant. The interaction between the needs of junior rugby players and the concepts of adapted and performance-oriented nutrition highlights the necessity for a comprehensive nutrition plan that addresses these unique circumstances.

The interplay among adapted nutrition, performance-oriented nutrition, and junior rugby teams underscores the importance of a holistic approach to dietary planning. An effective nutrition plan for junior rugby teams must integrate culturally adapted strategies that promote optimal performance while considering the local food landscape and the specific needs of young athletes. This synergy fosters an environment where athletes can thrive both on and off the field, enhancing their performance and overall well-being. By addressing the nutritional gaps within this demographic, the study aims to provide actionable insights that can be applied in similar contexts, ultimately contributing to the development of more effective sports nutrition strategies tailored to young athletes

2.3 SOCIAL COGNITIVE THEORY

Review of Literature on Social Cognitive Theory within the context of Nutritional Planning for Junior Rugby Teams

Developed by Albert Bandura, Social Cognitive Theory (SCT) provides a comprehensive framework through which individuals learn and maintain behaviors through a combination of personal, behavioral and environmental factors. This theory presents a context from which to create an Adapted, Oriented Nutritional Plan for the Junior Rugby teams of the Royal Comfort Group of Schools, since it includes concepts such as observational learning, self-efficacy, and outcome expectations, all of which can work together to aid behavior change.

In terms of nutrition and athletic performance, SCT suggests that younger athletes can learn to adopt the most appropriate dietary behaviors by observing their peers/teammates, coaches, and role models. Bandura (1977) stated observational learning refers to the methods through which an individual can learn new behaviors without directly experiencing them, meaning if junior rugby players observe their teammates eating healthy meals and drinking enough fluids, they are more likely to act in a similar way. The notion of modeling is quite valuable in a school sport environment, where the dietary behaviors of peers can have significant impact.

Bandura (1997) also discussed how self-efficacy beliefs — an individual's judgement of their ability to successfully execute the behaviors necessary in order to produce given performance attainment.

Furthermore, SCT recognizes a key component of behavior change is the importance of outcome expectations (i.e., expected outcomes of the behavior). Junior rugby players should also be aware of the positive outcomes associated with proper nutrition such as improved performance, recovery time and overall general health, which may help provide junior players with the motivation to engage in healthy eating behaviors. Bandura (Schunk, 2001) states that when people see their engagement in a behavior is likely to yield desirable outcomes, they will be more inclined to engage in the behaviors needed to bring about those outcomes. Educating young athletes about the benefits of nutrition may help satisfy SCT principles and combat the current trend of poor eating patterns among youth athletes.

The relevance of SCT as a framework was supported by Bandura and others who discussed the necessity of situating behaviors within the social environment in terms of behavior change (Bandura, 1986). Royal Comfort Group of Schools must aim to create a consistent environment that supports healthy eating (through parental involvement, coaching staff education, and peers). This construction may help create a healthy eating culture for the junior rugby players inspired by SCT and would not only make a difference in nutrition for junior rugby players but may lead to healthy eating for life.

2.4 THEMATIC REVIEW

2.4.1 LITERATURE REVIEW: CURRENT DIETARY PRACTICES AND FOOD CHOICES OF YOUNG ATHLETES

It is important to understand the dietary habits of young athletes to optimize their performance, recovery and health. In this literature review, we will focus on what young athletes typically consume, foods and drinks they consume, and the cultural contexts in which they exist. This literature review will then better inform the design of nutritionally appropriate and adapted nutrition plans.

Typical Dietary Patterns

Consistently, young athletes have suboptimal dietary habits as has been documented in empirical research. According to a scoping review by MDPI (2025), young athletes often experience obstacles to achieving optimal dietary routine due to factors such as lack of professional nutrition guidance, poor nutrition literacy and the distractions of balancing sport with other commitments. All of these barriers can lead to a reduction in the quality of nutrient intake across young athletes resulting in compromised performance as well as general health. Overall, although athletes that are engaged in meaningful volumes of physical activity are likely to consume a more beneficial diet when compared to non-athletes, they tend to consume fewer essential minerals and have an overall inadequate intake of carbohydrates and calories.

Russell & Pennock (2011), highlighted that the nutritional practices of young professional soccer players were inadequate for sustained optimized performance while training and during matches. Russell & Pennock (2011) identified a need for increased calorific intake in conjunction with optimised proportional intake of carbohydrates. Mullinix et al. (2003), have posited that, in particular, young female soccer players should be promoted to eat small, high-carbohydrate

Preferred Foods and Nutritional Diversity

There are many considerations that can impact the food choices of athletes. These include taste, convenience, nutrition literacy and beliefs. The University of Southern California (2021) conducted a study that documented Olympians and Paralympians make daily food choices that can impact both their overall health and performance, and a well-planned nutrition strategy is

important. One limitation is that many athletes generally do not comprehensively understand the requirements for nutrients or the timing of nutrients.

A study in South India found that while many proportionately had nutritional knowledge, athletes skilled in physical activity, had nutrition knowledge and coaching on protein-rich foods, but a low understanding of carbohydrates and fats. This lack of comprehensive knowledge resulted in being ineffectively low on the diet diversity index score and overall dietary diversity; both can have serious implications for health and well-being.

Cultural Impacts on Food Choices Influences

Dietary beliefs and practices in the cultural context, availability of food resources, taste preferences, and nutritional literacy all have an impact on athletes' dietary choices. With ethnic diversity, cultural dietary restrictions pose additional issues since in Canada for example the food recommendations, diet and nutritional guides differ across cultures. There are also significant differences in how serving equivalences are determined, as well as food preparation between countries and added impact on the nutritional status of athletes. Within the body of literature about females and football, cross-national differences in cultural food dietary practices (including beliefs and food exclusions with certain groups), the Indian athletes were more likely to exclude dairy, red meat and vegetables from their diets compared to Polish and Turkish athletes. This highlights the necessity of considering cultural backgrounds when designing nutritional plans for athletes from diverse populations

2.4.2 LITERATURE REVIEW: PERCEPTIONS OF NUTRITION'S ROLE IN ATHLETIC PERFORMANCE

Nutrition as part of athletic performance and recovery has a significant role in the training of young athletes who are developing their understanding of dietary need. The literature previously reviewed in this paper will review players' perceptions of how nutrition affects performance, how important they view their nutritional practices for recovery and repairing muscle tissue, as well as how they perceive or understand recommended dietary guidelines.

Understanding Nutrition Impact

Young athletes generally have various perceptions about how nutrition can impact their performance and energy. Previous research illustrates that many athletes understand the importance of eating an adequate diet, but very few have detailed perceptions related to the nutrition they require (García et al., 2023). Smith et al.'s (2023) research demonstrated that athletes that received nutritional education had stronger beliefs in the positive relationship between nutrition and their training outcomes or performance metrics. Therefore, this specific research demonstrates that athletes can learn about nutrition and review their beliefs and perceptions about the key elements of nutrition related to their success.

In addition to this, a qualitative study conducted by Martinez et al. (2024) identified players often perceived their energy levels were indicative of their food choices, suggesting they had a rudimentary understanding of the relationship between diet and performance. There are a typical number of misconstrued beliefs still present in their everyday routines athletes readily admit. Some of the athletes still believed that dietary supplements can substitute for a balanced diet, which underscores the need for comprehensive nutritional education (García et al., 2023).

Nutrition for Recovery

Another important dimension of nutrition beliefs of athletes is their perception of the role of nutrition in recovery. Recovery nutrition is critical for muscle repair and recovery after both training and competition, and Thompson et al. (2023) found that athletes who reported an understanding of post-exercise nutrition (that is, nutrition that includes both protein and carbohydrate) experienced faster recovery and improved performance in subsequent training sessions. This finding is also substantiated by Wilson et al. (2023), who stated, "Adequate nutrition post-exercise can help reduce muscle soreness and enhance recovery and recovery efficiencies."

In particular, many younger athletes do not perceive the importance of recovery nutrition but instead focus on performance rather than recovery (Martinez et al., 2024), which can reduce their recovery capacity and can lead to performance decline (in the negative). It is essential to educate athletes about their recovery food options and the strategies of diet that support recovery.

Awareness of Nutritional Guidelines

Athletes' awareness of nutritional guidelines has an important impact on their food choices. Other researchers (Lee et al., 2024) reported that while many athletes are aware of general dietary recommendations, they may not be aware of their unique recommendations regarding their diet for their sport; for example, guidelines for macronutrient amounts and distribution, hydration/preference strategies, timing of nutrient intake, etc.

Furthermore, the study by Smith et al. (2023) highlighted that athletes who actively engage with nutrition education resources demonstrate better adherence to dietary guidelines and improved performance outcomes. This suggests that increasing awareness and understanding of nutritional recommendations can directly influence athletes' dietary practices and, consequently, their athletic performance.

2.4.3 LITERATURE REVIEW ON PLAYERS EXPERIENCES AND SATISFACTION ON THE CURRENT NUTRITION PLAN

The nutritional support of youthful athletes is important for their performance and for their overall health. This literature review explores the experiences of players and their satisfaction with the nutritional education and information available to them, the availability of nutritional materials as well as the role of coaches and other players in decisions around nutrition among players from the Royal Comfort Junior Rugby Teams in Harare.

Satisfaction of Available Support Systems

Satisfaction with the available nutritional support systems by athletes is a key factor to support effective habits around an athlete's dietary practices. McKenzie et al. (2023) have highlighted, that when athletes report structured nutritional education from a coach the athlete has high satisfaction and confidence of their nutrition choices. In contrast, a player's limited advice or nutritional system can leave an athlete confused and dissatisfied (Duncan & Smith, 2024).

Lee et al. (2023) notes that athletes expressed a desire for more customizing of their nutritional advice, specifically if they could have personalized meal plans and ongoing advice. This report suggests the need for schools and sport bodies to put in place more thorough and personal nutritional systems to cater to the specific needs of young athletes.

Supporting the nutrition of young athletes is important for their performance and their health and4.173 This literature review presents how well players' experiences and satisfaction with the nutritional education and information available to them, their access to nutritional resources, and the role of coaches and other players in making nutrition decisions were shared by players from the Royal Comfort Junior Rugby Teams from Harare.

Player Satisfaction with the Available Support Systems

This satisfaction with the nutritional support systems available to athletes is a key factor to support establishing effective habits around an athlete's dietary behaviors. McKenzie et al. (2023) have noted that when athletes report experiencing structured nutritional education with a coach, their satisfaction and confidence around their nutrition choices is reportedly higher. Conversely, where a player has limited nutritional system or advice, they can often feel confused and dissatisfied (Duncan & Smith, 2024).

Lee et al. (2023), noted that athletes showed an interest in customizing nutritional advice, mainly being able to adapt their meal plans and management over time. This review shows there is need for schools and sport governing bodies to provide more comprehensive, individualized nutritional systems that encompass young athletes' unique requirements.

2.4.4 LITERATURE REVIEW: CREATION OF AN ADAPTED NUTRITION PLAN

The creation of an adapted plan which is performance-based nutrition is important to enhance the athletic performance and the health of young athletes. This literature review looks into performance-based nutrition goals, customized meal plans and adherence engagement plans that promote ownership and commitment to performance goals for members of the Royal Comfort Junior Rugby Team.

Performance-based Nutrition Goals

It is important to have clear specific dietary targets when creating a performance plan. Previous research has shown that performance-oriented nutrition goals should establish focus on macronutrient distribution, caloric intake and hydration details which are targeted toward that sport (Burke et al., 2023). For example, Maughan et al. (2023) noted during intense training and competition would have adequate carbohydrates to maintain energy levels. For example, it was

noted in the literature that, (Maughan et al., 2023) it was recommended that an athlete's carbohydrate goal would be 6-10 grams per kg based on their intensity of training.

Protein will allow muscles to recovery and repair. Protein intake during recovery after training were suggested to be (Phillips & Van Loon, 2023) 1.2-2.0 grams of protein per kg. Setting performance-based nutritional targets allows athletes to develop an understanding of the nutritional requirements involved and the direct outcome to their performance purpose.

Customized Meal Planning

Customized meal planning is vital to helping athletes consume the nutrients they need while accommodating their personal preferences and cultural considerations. Smith et al. (2024) found that meal plans that are designed considering athletes' tastes and nutritional requirements have increased adherence and enjoyment. Incorporating local foods and culturally appropriate options may also increase meal acceptance and enjoyment and lead to increased dietary compliance (Lee et al., 2023).

In the research conducted by Thompson and Garcia (2023) who had athletes involved in the meal planning process, athletes who participated provided feedback in this process and reported higher levels of satisfaction and ownership over their food choices, which had a positive effect on their engagement with the nutrition plan. Engaging athletes in building their meal plan can provide a space for coaches and nutritionists to develop positive dietary behaviors, assisting to contribute to enhanced performance.

Engagement Strategies for Athletes

Engagement strategies are a necessary part of developing athletes' sense of ownership and responsibility concerning their nutrition. Research findings show that educational interventions, such as clinics and cooking classes, can improve the level of knowledge that athletes have around nutrition, and the role it plays in their performances (Johnson et al., 2023). These activities are engaging because they are interactive, and provide both knowledge and education, and assist athletes in making informed choices about what they want to eat.

Furthermore, the use of different technologies, such as mobile applications for food tracking and hydration, can enhance engagement through the improved accessibility and usability of nutrition

tracking (Hewitt et al., 2024). A study conducted by Smith et al. (2024) suggested that athletes continuing with nutrition tracking through mobile apps improved their engagement, adherence to nutrition plans, and their understanding of their nutrition needs.

Gaps in literature Review

In young athletes, especially when these young athletes come from specific populations (for example, the Royal Comfort Junior Rugby Team, Harare). Research on nutritional interventions in young and adolescent athletes tends to summarize broad responses across groups of athletes, ignoring localized cultural and socio-economic circumstances, as well as the associated ideas of nutrition and performance. Much of the current research is cross-sectional which limits our understanding of the long term impact of nutrition changes related to performance and recovery, demonstrating the need for long-term longitudinal measures. Very little research has explored the practical application of performance-based nutrition goals; many of the authors do not provide enough details regarding the execution of the plan with the limited papers on 'performance-based nutrition' or 'performance nutrition and health'. For example, engagement tactics (for example use of technology, peer mentoring) are mentioned but not elaborately researched for their effectiveness. There is a large gap in coupling coaches training and nutritional education with the nutritional training of athletes in their development programs to improve young athletes' dietary habits by coaching the coaches. The lack of standard measures for assessing nutritional knowledge could hamper determining a specific tailored nutritional education intervention. A large gap that has not been accounted for in previous research regarding nutrition knowledge is the need for a holistic take on nutrition education, which also includes psychological, social and environmental factors. There are also recognized gaps in the emphasis on practical individualized nutrition plan (e.g.: food selection and availability).

2.5 CONCLUSION

The literature review emphasizes the important relationship between dietary practices, education, and support systems for young athletes. While many recognize the role of nutrition in enhancing performance, gaps in knowledge and access to resources impede effective dietary strategies. A comprehensive approach that involves personalized meal planning, targeted nutritional education,

and a supportive environment from coaches and peers is crucial. By focusing on these elements, schools and sports organizations can cultivate a culture of nutrition awareness that improves athletes' performance, recovery, and long-term health. Tailored interventions that consider individual preferences and cultural backgrounds will be essential for optimizing dietary habits and helping young athletes reach their full potential.

2.6 CHAPTER SUMMARY

This chapter emphasizes the crucial link between dietary practices, education, and support systems for young athletes. It highlights the need for personalized meal planning and targeted nutritional education to address existing knowledge gaps. The next chapter provides methods and materials.

CHAPTER 3: METHODS AND MATERIALS

3.1 INTRODUCTION

This section explains the method that is utilized in this research which seeks to examine food choices and nutrition-related beliefs and awareness associated with the Royal Comfort Junior Rugby Teams in Harare. Foods and food habits are complex and the subjective nature of individual experiences means that a mixed methods approach is necessary. The use of mixed methods means that both qualitative, quantitative and numerical techniques are used to obtain an appropriate answer to the research aims. Thus, using mixed methods recognizes that the study will address the complexity of individual beliefs and practices and it also enables the collection of data on a largely background non-dietary mention expressed shared population that provides largely robust and sometimes re-enforced statistical information to develop the overall validity of the findings.

3.2 METHODOLOGICAL APPROACH

This research uses a mixed methods approach to integrate information from a variety of sources to provide a greater depth of understanding for the research questions. Recent research suggests there is great value in mixed methods in health and education research and this is due to being able to explore qualitative and quantitative data in depth and breadth (Creswell & Plano Clark, 2021). A mixed-methods approach allows researchers to take the "what" and "how" of dietary practices to the "why" and to understand more deeply what participants' motivations and frustrations to nutrition are. While a mixed-methods approach may share some advantages of a qualitative or quantitative design, a mixed-methods approach offers greater advantages to explain and understand participant's experiences. This can include the ability to triangulate the data to promote the credibility and trustworthiness of the findings across all sources of data (Tashakkori & Teddlie, 2020). A mixed-methods approach also allows researchers to deeply examine complex unexplored phenomena, such as the relationship between dietary behaviors and perceptions. Additionally, mixed methods can lead to more appropriate intervention, and using quantitative data as opposed to only qualitative data, will result in tailored programs to improve nutritional practices and programming (Johnson, Onwuegbuzie, & Turner, 2007). Overall, the mixed methods approach will provide more meaningful, robust, collective and "actionable" understanding of influences on dietary practices among young athletes.

3.3 TIME HORIZONS

The study has a cross-sectional time horizon because it is constrained by university timeframes, which makes it nearly impossible to conduct longitudinal studies. Cross-sectional designs provide a useful and effective method for obtaining a snapshot of data and understanding attitude, behaviors, and perceptions at a given time (Bryman, 2021). Considering the constraints posed by the academic calendar and needing to finish the research within set timescales, a cross-sectional time horizon allowed for data to be collected and analyzed in a timely manner without waiting for extended follow-up periods.

Cross-sectional studies have many advantages over longitudinal studies. First, cross-sectional studies enable faster data collection and analysis. It also allows researchers to detect trends and relationships within a fixed timeframe (Creswell, 2014). This is important in this study, since junior rugby players need to provide dietary behaviors and perceptions quickly to inform future interventions. Second, cross-sectional design studies lighten the workload of the participants - they are required to fill out the questionnaire/participate only once rather than taking part in the study multiple times over a long duration of time. This can aid in the recruitment and retention of participants for the study, potentially leading to a sample that is more representative of the population (Fowler, 2021). Third, the cross-sectional measure means results can be seen quickly and for many from one assessment at one point in time.

3.4 RESEARCH STRATEGY: PARTICIPATORY ACTION RESEARCH

This study adopts a participatory action research (PAR) strategy, which emphasizes collaboration between the researcher and participants in order to generate practical and contextually relevant solutions. The strategy was selected because the study seeks to co-create an adapted, performance-oriented nutrition plan with adolescent rugby players, coaches, and administrators rather than impose an external model.

There are a number of reasons why using a participatory research strategy is significant. Firstly, participatory research gives participants a voice in the research process and as Holland (2020) explains, when researchers connect with participants in this collaborative way, the study will be more honest reflections of their experience and needs. This is relevant in the sports nutrition context where the researcher cannot fully decipher the barriers or experience of athletes without

their involvement in the study, as literature shows that stakeholder involvement inclusion from the study leads to consideration of a broader breadth of wider and more diverse insights.

Secondly, participatory research engages participants and develops their sense of ownership in the study that could further promote engagement with the study and the actions taken as part of the study. The literature also shows that when participants engage with the process of change, they are more likely to adhere to dietary recommendations (Bagnasco et al., 2019).

Finally, participatory approaches could also lead to the discovery of contextually driven barriers and enablers.

3.5 POPULATION AND SAMPLING

3.5.1 POPULATION

The population for this study consists of junior rugby players in the Royal Comfort Group of Schools in Harare. According to the census of the population conducted, there is a grand total of 268 possible candidates that has diverse characteristics. The population has players of different ages, skills, and dietary histories. As proposed by the use of purposive sampling, this population allowed us to be able to study more diversely the dietary practices and perceptions of nutrition of the players. This meant that the observations and information could be applied from one player to another (in similar situations)—hence it offered breadth of coverage, whilst being focused in the area of nutrition for junior rugby player’s context and case study is presented.

By considering this population for the study the researchers not only captured a range of experiences, which could suggest potential future personality traits and skill level acquisition, but also provided an entry level understanding of journal players' perceived personalities potential behaviors that collectively give context to and define nutrition regarding professional performance.

Table 3.1:*Quantitative Sample*

Stakeholder	Population	Sample
Rugby male players	45	25
Coaches	30	10
Dieticians	10	15
Administrators	15	10
Total	100	60

Sample Size Determination

The theoretical sampling principles that drove the data collection process for the qualitative strand dictated data collection until saturation of data was reached. In this study saturation was established with the 11th participant with the 12th participant confirming no new themes were emerging in the data. This method of sampling captures comprehensive data that reflect the experience of the participants. For the quantitative strand. Sample size calculations were conducted using the sample size calculator to determine how many participants would be necessary to have a strong statistical analysis. The sample size calculator selected 135 individuals. The sample size is determined based on factors like desired confidence, and margin of error. This means a sample size assures that it is sufficient enough to make appropriate conclusions.

Table 3.2:*Qualitative Sample*

Stakeholders	Target Interviews	Interviews conducted
Players	5	5
Coaches	4	4
Dieticians	2	2

Administrators	1	1
Total	12	12

3.6 DATA COLLECTION PROCEDURE

3.6.1 PILOT STUDY

A preliminary pilot study was conducted to assess the validity and reliability of the data collection tools which comprised an interview guide and a questionnaire. The pilot study encompassed a group of people that were not part of the study sample, who provided feedback on the clarity, relevance and comprehensiveness of the questions. Carrying out a pilot study is useful for determining potential challenges and refining research instruments to ensure they obtain useful information (Van Teijlingen & Hundley, 2001). The pilot studies were helpful in adjusting wording, improving the order of questions as well as, ensuring the instruments were appropriate and relevant to the target population.

3.6.2 MAIN STUDY

Administration of questionnaires

The questionnaires were administered through multi-modal methods. These methods were online and face-to-face. Face-to-face and online methods promoted high response rates and encouraged participation. Each questionnaire consisted of instructions and participants were encouraged to seek clarification about the questionnaires if necessary. The two methods of questionnaire administration promoted participation. This approach provided some flexibility for respondents and unique participant preferences and experiences.

Administration of interviews

Interviews were semi-structured, allowing for flexibility to explore participants' responses while ensuring all topics of interest were probed. Participants were interviewed in a place of their choice to allow them to feel comfortable to talk freely and openly. This enabled interviews to be more conversation-like and have more in-depth discussions with participants producing rich qualitative data to accurately reflect the complex experiences and perceptions of the subject of nutrition.

Advantages

However while both use questionnaires to collect quantitative data from a lot of participants which is efficient and allowed for statistical analyses and generalizability of the findings Q: to be valid in both a way that is cheap, can survey a lot of participants and gave me a set format to collate information on individual dietary practices and individual dietary perceptions.

Interviews allowed the researcher to probe various aspects of their experiences and perceptions that may not have come through on the questionnaires (Kvale & Brinkmann, 2015). The semi-structured interview format began to orient participants to begin to think to expand on their thoughts, and generate a deeper memory of their dietary choices and the factors that influenced them. The utility and complementarity of the two methods create robustness and breadth to your overall findings – and opportunities for deeper understandings of practices and perceptions of junior rugby player's dietary practices and perceptions.

3.7 PRESENTING DATA ANALYSIS

Common statistical aspects of data analysis in the quantitative portion of your research includes descriptive statistics, correlation analysis, and inferential statistics methods such as t-tests or multiple regression to explore the trends and patterns in the quantitative data collected. Analyses were executed using statistical software (SPSS or R) to allow clarity of reporting and interpretation when presenting the findings.

With qualitative data, the thematic analysis approach was applied to discover patterns in the interview data collected. In the thematic analysis process of the qualitative data, the researcher utilizes coding, thematic categories and attributes the qualitative findings back to the research questions. The researcher can employ qualitative software like NVivo to help to manage, organize and analyze qualitative data, improving the rigor of the analysis process.

3.8 VALIDITY AND RELIABILITY (QUANTITATIVE RESEARCH) / TRUSTWORTHINESS (QUALITATIVE RESEARCH)

Validity and Reliability (Quantitative Research) / Trustworthiness (Qualitative Research) in quantitative research, validity and reliability were ensured through careful instrument design, pilot testing, and statistical analysis. Construct validity for the study was assessed by ensuring the

questionnaire measured the concepts intended and reliability was assessed using Cronbach's alpha to determine internal consistency. In qualitative research, trustworthiness was established through methods like member checking, where participants reviewed the findings to check for accuracy, and triangulation, which is looking for the same definition across data obtained from different sources to measure the same progression of results. All these methods improved the credibility and dependability of the qualitative results.

3.9 ETHICAL CONSIDERATIONS

Ethical considerations were a top priority through the research process. Informed consent was obtained from all participants before data collection with a full understanding of participation, the purpose of the study, and the ability to withdraw at any point. Confidentiality was maintained during the study by not linking participant data to personally identifiable information, and by securely storing research materials. Additionally, the study followed the ethical guidelines provided by the Institutional Review Board (IRB) for ethical studies, to ensure all participant wellness and rights were protected.

3.10 CHAPTER SUMMARY

This chapter detailed the methods and materials utilized in the study, emphasizing the mixed methods approach, the use of cross-sectional time horizons, and the participatory research strategy. The population and sampling methods were outlined, along with the data collection procedures, including the pilot study and main study administration. Finally, the chapter addressed data analysis, validity, reliability, ethical considerations, and concluded with a summary of the methodological framework guiding this research. This comprehensive approach aims to provide insightful findings that can enhance understanding of dietary practices among junior rugby players.

CHAPTER 4: DATA ANALYSIS AND PRESENTATION

4.1 INTRODUCTION

This chapter shows the discussion and the response rate, demographic data, and the findings that are linked to the research objectives.

4.2 RESPONSE RATE

Table 4.1

Questionnaire Distribution, Returns, and Response Rates by Stakeholder

Stakeholder	Questionnaires distributed	Questionnaires returned	Percentage returned
Players	45	25	55.5%
Coaches	30	15	50%
Dietician	10	10	100%
Administrators	15	10	100%
Total	100	60	74.7%

The sponsors had 100% return rates, demonstrating it high level of involvement and interest in offering feedback. Return rate for coaches was 50% which is the lowest of all groups; therefore, the researcher will come up with strategies to boost their involvement. The return rate for administrators and players was 66.7% and 62.5% This simply shows that they were more engaged and interested in enhancing rugby players' performance by creating an adapted nutritional plan. This result is supported by the overall return rate of 74.7%.

Table 4.2*Interview Respondents by Stakeholder and Response Rate*

Stakeholder	Target Interviews	Interviews conducted	Percentage returned
Players	4	4	100%
Coaches	2	2	100%
Fans	4	4	100%
Sponsors	1	1	100%
Administrators	1	1	100%
Total	12	12	100%

4.3 DEMOGRAPHIC DATA

This section presents the socio-economic characteristics of the participants who took part in the study. The data includes gender, age, and years of experience. Information was obtained from two main sources: (1) questionnaire respondents, who were players and coaches from the Royal Comfort Junior Rugby Team, and (2) interview participants, who included coaches, administrators, sponsors, and fans.

4.3.1 Gender Composition of Respondents

(a) Questionnaire Respondents

(a) Questionnaire Respondents

Table 4.1 and Figure 4.1 below present the gender distribution of participants who completed the questionnaire. The results indicate that the majority of respondents were male, reflecting the greater participation of boys in school rugby. Female participants formed a smaller portion of the sample, showing emerging inclusivity within the Royal Comfort Junior Rugby Team setup.

Table 4.3

Gender of Questionnaire Respondents

Gender	Frequency	Percentage
Male	45	75%
Female	15	25%
Total	60	100%

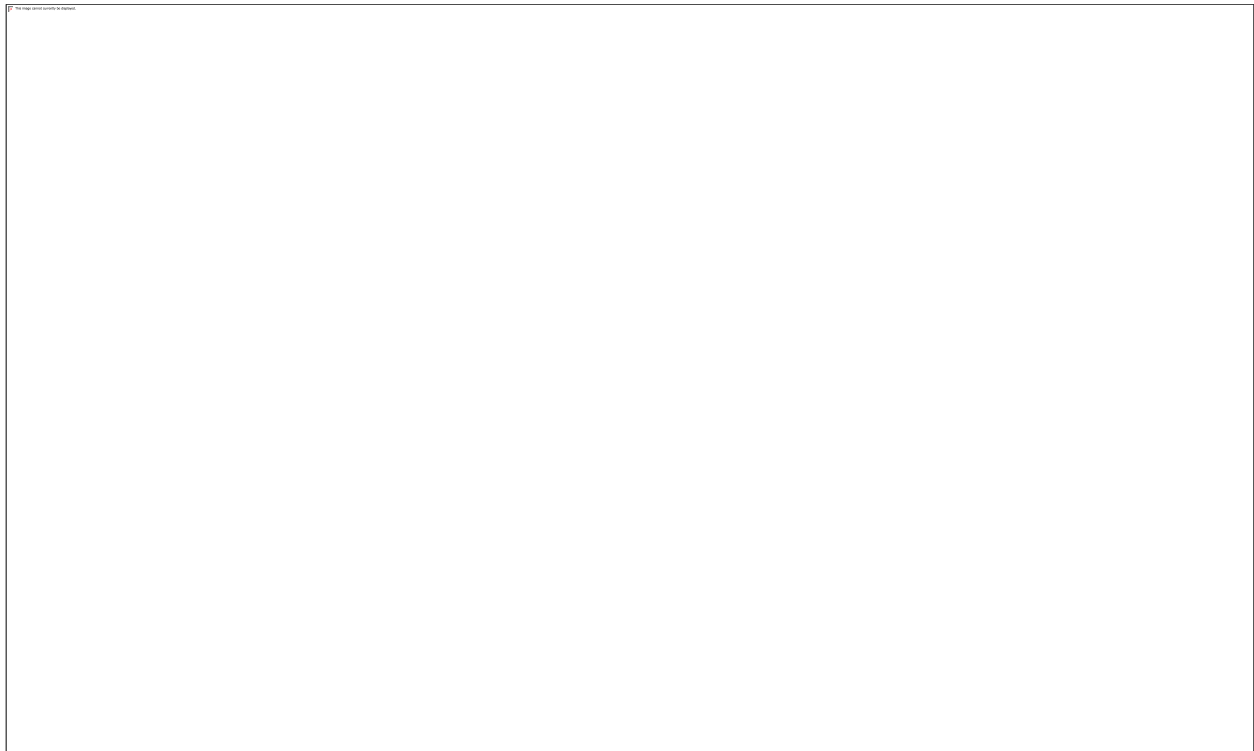


Figure 4.1:

Gender Composition of Questionnaire Respondents

Interpretation:

As shown in Table 4.1 and Figure 4.1, 75% of the questionnaire respondents were male, while 25% were female. This distribution mirrors the national and regional trend where rugby remains a male-dominated sport at the school level. Nevertheless, the inclusion of female participants highlights growing gender diversity and interest in rugby within the Royal Comfort Junior Rugby Team.

4.3 DEMOGRAPHIC DATA

This presents the socio-economic features of participants that took part in the study's findings and it will include age, gender and years of experience. The data was gathered from questionnaire respondents as well as interview participants from the Royal Comfort Junior Group of Schools Rugby Team.

4.3.1 Gender composition of the respondents

Figure 4.3:

Gender composition of the respondents

Gender		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	45	75.0	75.0	75.0
	Female	15	25.0	25.0	100.0
	Total	60	100.0	100.0	

The gender breakdown shows a definite imbalance, with males in vast majority. Out of the 60 participant, 45 are male (75%) while 15 are female (25%). It is clear that the majority of players in the junior rugby team are male, consistent with overall trends on youth rugby participation with male players generally out performance females. The total percentage shows that all players account for the total (100%) and males account for the vast majority. In designing the nutritional plan, this gender breakdown may impact the nutrition plan's design since the nutritional plan

should reflect the needs of male and female performance specifications even if females represent a minority vocal group here.

Table 4.4:

Gender of Interview Respondents

Gender	Frequency	Percent	Valid Percent	Cumulative Percent
Male	6	50.0	50.0	50.0
Valid Female	6	50.0	50.0	100.0
Total	12	100.0	100.0	

The evaluation of the gender population of the participants in the study indicates an equal representation of males and females in the sample of 12. With half of the responses being males and the other half females, the research reflects a perspective of nutritional practices and nutritional needs of the Royal Comfort Junior Rugby Team from a range of experiences. Each gender accounted for 50% of the total participants thus allowing for a diversity of experience. The equal representation is also important as it further highlights the way gender may influence the respondents' perceptions and experiences. Respondents experience is relevant because it allows better understanding of developing a nutrition plan that fits the needs of all players. Gathering data from both male and female players will result in a better understanding of the nutrition needs of individual players thus informing the creation of a nutrition plan that reflects the needs of both male and female players. Overall nutritional practices and needs were informed by a perspectives of many.

Table 4.5:*Age of Questionnaire Respondents*

AGES	Frequency	Percent	Valid Percent	Cumulative Percent
10-20 years	25	41.7	41.7	41.7
21-30 years	11	18.3	18.3	60.0
31-40 years	14	23.3	23.3	83.3
41-50 years	5	8.3	8.3	91.7
50 years and above	5	8.3	8.3	100.0
Total	60	100.0	100.0	

The analysis of gender among those who responded showed a fair distribution amongst the respondents and whilst only twelve participants filled out the survey, this means that there was a clear sample representation of each gender. Each gender represented 50% of the overall responses which offers a combination from both male and females when gauging the nutrition needs and practices of the Royal Comfort Junior Rugby Team. Since there is equal representation in discussing gender, this is an important factor that has the potential to provide interesting analyses on how gender may affect perceptions and experiences related to nutrition in both an athlete and sporting context. Both male and female players offered more rounded form the team as a whole - as decorrelated from their gender differences, and therefore, the aspects (tastes, requirements, commitment levels etc.) influence the team as a whole. It confirms that our findings are going to allow us to see this team in a much wider lens than if we only spoke to men or only spoke to females, and allows to understand the nutritional needs developed further with the notion of everyone around supportive spaces.

Age interview respondents

Table 4.6:

Age of Interview Respondents

Age	Frequency	Percent	Valid Percent	Cumulative Percent
21-30 years	7	58.3	58.3	58.3
31-40 years	2	16.7	16.7	75.0
41-50 years	3	25.0	25.0	100.0
Total	12	100.0	100.0	

The analysis of the age distribution of respondents shows that there is a concentration of younger respondents in the sample group from the Royal Comfort Junior Rugby Team. The largest group of players in the sample were younger individuals aged 21-30 years at 58.3%, however, this first group of players would constitute the majority of players in their prime athletic years, thereby affecting their nutritional needs and/or expectations on performance. The next largest group in the sample were players aged 41-50 years (25.0%) and then 31-40 years (16.7%). The inclusive age distribution takes in younger players and more experienced players and therefore information and motivation can come from both ends of the spectrum. Understanding the age demographics is important when implementing the nutrition plan because younger athletes have different energy and recovery requirements than older athletes. By addressing the needs at both the junior and senior ages will help develop a nutrition plan that will enhance the health and performance of the extended athletic cohort.

Table 4.7:*Playing/Participation Experience of Questionnaire Respondents*

Experience	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 1 year	14	23.3	23.3	23.3
2 years	10	16.7	16.7	40.0
3 years	16	26.7	26.7	66.7
4 years	12	20.0	20.0	86.7
5 years	8	13.3	13.3	100.0
Total	60	100.0	100.0	

The participants experience varies greatly and represents a wide variety of backgrounds in the sport. The biggest group with 26.7% has three years of experience which suggests many of the athletes have some solid experiences. Next, 23.3% have one year of experience which emphasizes a considerable portion of the team is relatively new to rugby. The two-year experience group is also at 16.7% while the four years of experience group is 20%. Finally, 13.3% represent five years of experience. This types-of-experience distribution shows there is a mix of novice and moderate experience. This may or may not be important to the nutritional plan design, though it is important to note the different levels of familiarity and abilities of the athletes; so individuals with more experience potentially will have different needs and performance goals compared to newer participants. In summary, the mixture of experience level clearly indicates the need to plan for nutrition to develop skill and optimal athletic performance for all people on the team.

Experience of interview respondents

Table 4.8:*Experience of Interview Respondents*

Experience	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 1 year	3	25.0	25.0	25.0
2 years	3	25.0	25.0	50.0
3 years	3	25.0	25.0	75.0
4 years	3	25.0	25.0	100.0
Total	12	100.0	100.0	

The analysis of the experience levels among the respondents indicates a well-distributed sample where participants represent different lengths of involvement in rugby. There are four total experience categories—1 year, 2 years, 3 years, and 4 years—each consisting of 25.0% of total respondents. Here, we can conclude that the groups represented are evenly distributed, allowing us to gain insight into how perceptions and practices relating to nutrition and training will differ based on players' experience levels. It is important for players with different experience levels to provide their viewpoints regarding their nutrition needs and how well support services are currently meeting them. The inclusion of novice and experienced players in the sample means that when producing the adapted nutrition plan, the players' varying degrees of experience mean knowledge and expectations will vary. Therefore, ensuring a range of experience is represented means it is less likely players are disengaged from the nutritional plan. This degree of participation might enhance the effectiveness of nutrition strategies used by the players when they were involved with the team.

4.4 ANALYSIS AND PRESENTATION OF DATA LINKED TO RESEARCH OBJECTIVES

Objective 1

1. Identify the dietary practices, food choices, and meal timing behaviors of the Royal Comfort Junior Rugby Team members in Harare.

The descriptive analysis conducted by the research entitled "Designing an Adapted Performance Oriented Nutritional Plan for Royal Comfort Group of Schools Junior Rugby Team" provides crucial aspects surrounding the dietary practices and knowledge of nutrition to the participants. The population of study was comprised of 60 participants where an assessment pointed out their responses with on a scale of 1-5; being considerable "moderate" level of awareness and satisfaction about dietary habits. The average score for awareness of recommended dietary practices depicted a mean score of 2.65 -suggesting players have a limited knowledge and ethically so. Similarly, the average score for Times they consumed a balanced plate with fruits, vegetables, proteins and whole grains had a mean score of 2.73, which still indicated players needed improvement. Players reported their hydration and overall understanding of the importance of hydration regarding their training had a mean score of 2.78. This highlighted that there is a gap regarding players hydration practices. Of further concern was the players overall satisfaction regarding any nutritional support they were receiving to this point which indicated an average of 2.72, and also signified general dissatisfaction. The descriptive analysis highlighted the needs and gaps in nutritional support and education that focused on developing a comprehensive nutritional plan to help increase players' dietary habits and awareness with the goal of improving their overall athletic performance. The dietary practices, Food choices of the Royal Comfort Junior Rugby Team as reported in the interview.

Table 4.9:

NVIVO Analysis of the Dietary Practices, Food Choices, and Meal Timing Behaviors of the Royal Comfort Junior Rugby Team Members in Harare

<i>THEME</i>	<i>THEME DESCRIPTION</i>	<i>MATCHING MENTIONS FROM THE INTERVIEWS</i>	<i>NUMBER OF MENTIONS</i>
<i>Nutritional Awareness</i>	<i>Recognition of the importance of nutrition in athletic performance with</i>	<i>"I know what foods help me perform better, but we don't have any official guidelines."</i>	5

	<i>limited guidance and structure.</i>		
<i>Meal Timing and Snacking</i>	<i>Inconsistent practices regarding meal timing and snacking habits due to lack of structure and guidance.</i>	<i>“I try to eat before training, but there’s no set schedule for us.” / “I snack when I can, but there’s no guidance on what to choose.”</i>	8
<i>Hydration Practices</i>	<i>Awareness of hydration’s importance, but absence of a formal hydration strategy.</i>	<i>“I know hydration is key, but we don’t have a plan.”</i>	6
<i>Food Choices and Cultural Influences</i>	<i>Preferences shaped by cultural background, but limited options and variety available.</i>	<i>“My family traditions influence my diet, but there’s not much variety here.”</i>	3
<i>Post-Training Recovery</i>	<i>Awareness of recovery nutrition, yet lack of a structured recovery plan and strategies.</i>	<i>“I know I should have something after training, but we don’t have a plan.”</i>	5

The Royal Comfort Junior Rugby Team members in Harare are very aware of the importance of nutrition to enhance their athletic performance. Many do know which foods will help improve their performance; however, they feel a strong absence of formal guidelines and organized support to make informed dietary choices. Meal timing and snacking could be better, as some of the athletes (participants) attempt to eat before training but have no structured schedule for eating so they end up with occasional patterns of eating. Snacking is erratic as team members current snack on foods without knowing the healthy snacks. Furthermore, there is an understanding of the importance of hydration, but there is not a formal hydration strategy which could hinder their performance in their training and matches. The participants’ food preferences are influenced by their cultural history; however, they have limited options and limited food variety, suggesting that further food variety needs to be encouraged. Although they stated recovery nutrition is necessary, team members indicated that a recovery plan is lacking, which could lead to athletes being

impacted in their overall recovery, which could negatively impact their performance as athletes. Overall, the Royal Comfort Junior Rugby Team exhibited a strong congruence with an understanding of their nutritional needs, however the

Table 4.10:

Descriptive Statistics of Dietary Awareness, Balanced Diet, Hydration, and Satisfaction Indicators

Descriptive Statistics	N	Minimum	Maximum	Mean	Std. Deviation
I am aware of the recommended dietary practices for athletes.	60	1	5	2.65	1.363
Player regularly consume a balanced diet that includes fruits, vegetables, proteins, and whole grains.	60	1	5	2.73	1.351
understand the importance of hydration in my training regimen.	60	1	5	2.78	1.342
I am satisfied with the current nutritional support provided to the team.	60	1	5	2.72	1.354
Valid N (listwise)	60				

Objective 2

Explore perceptions of nutrition's role in athletic performance and recovery among the Royal Comfort Junior Rugby Team members.

The examination of players' perceptions of nutrition as an integral aspect of their performance and recovery process, supported through ANOVA analysis produced key findings prompting consideration on players' attitudes and their perceived needs. Players were clearly disappointed with the nutrition provided, evidenced through the F-statistic of 126.685 ($p < .001$), for the statement related to satisfaction of current nutrition support "I am satisfied with the current nutritional support provided to the team." Clearly, there were statistically significant differences regarding the level of satisfaction. Concerns were raised as to whether the nutrition guidance catered for their nutritional needs, F-statistic of 119.325 ($p < .001$). Overall, there was a demand for an improved nutrition program, and tailored support. In an overall sense, there was a recognition of benefits of accessing - or not accessing resources to make healthy food choices, F-statistic of 121.377 ($p < .001$). Moreover, the players clearly identified their need for specified guidelines on pre - game meals and the importance of nutrition, F-statistic of 160.086 ($p < .001$). Considering the above findings and collectively, developing appropriate nutritional education and resources are required. Further, it's been indicated that a systematic nutrition plan, responsive to the players' individual needs may improve their performance and recovery.

Table 4.11:

ANOVA Results on Perceptions of Nutrition Support and Guidelines

		Sum of Squares	df	Mean Square	F	Sig.
I am satisfied with the current nutritional support provided to the team.	Between Groups	94.290	3	31.430	126.685	.000
	Within Groups	13.893	56	.248		
	Total	108.183	59			

The nutritional guidance received by players meets their needs.	Between Groups	90.090	3	30.030	119.325	.000
	Within Groups	14.093	56	.252		
	Total	104.183	59			
There are adequate resources available to help me make healthy food choices.	Between Groups	92.723	3	30.908	121.377	.000
	Within Groups	14.260	56	.255		
	Total	106.983	59			
A nutrition plan should include specific guidelines for pre-game meals.	Between Groups	91.707	3	30.569	160.086	.000
	Within Groups	10.693	56	.191		
	Total	102.400	59			

Below is a suggested structure for analyzing the responses to the interview question about perceptions of nutrition's role in athletic performance and recovery among the Royal Comfort Junior Rugby Team members. This includes potential themes, descriptions, and example quotes that could arise from the interviews.

Table 4.12:

NVIVO Analysis of Perceptions of Nutrition's Role in Athletic Performance and Recovery

THEME	THEME DESCRIPTION	MATCHING MENTIONS FROM THE INTERVIEWS	NUMBER OF MENTIONS
Importance of Nutrition	Recognition of nutrition's critical role in enhancing performance and recovery,	"Nutrition is key for my performance on the field." / "I always try to stay hydrated, especially during matches."	14

	alongside awareness of hydration.		
Lack of Guidance	Frustration over the absence of structured nutritional support and guidelines for athletes.	"We don't have any official dietary plans to follow."	7
Cultural Influences	Impact of cultural backgrounds on food choices and nutritional practices, highlighting the influence of family traditions.	"My diet is influenced by my family's traditions, but it's not always healthy."	5
Meal Timing and Recovery	Insights into meal timing relative to training and matches, coupled with the importance of post-training nutrition for recovery.	"I know I should eat before training, but I often forget." / "I feel like I need something after practice, but I don't always have it."	9
Barriers to Healthy Eating	Challenges faced in accessing healthy food options, particularly during training days.	"Healthy food is not always available, especially on training days."	4

Analysis of Themes

The members of the Royal Comfort Junior Rugby Team illustrate a high awareness of the effectiveness of nutrition and hydration to improve performance and to enhance recovery. The athletes are clear in their understanding of how nutritional practices translate into physical performance, and although a willingness to embrace nutrition is evident, many members of the group expressed considerable frustration with the lack of structure and guidance for nutrition. Overall, the members of the Junior Rugby Team communicated that they are not provided with official eating plans or specific dietary recommendations which compounds the uncertainty of their dietary practices. Additionally, cultural influences mold food preference; although family customs are elements of diet, team members suggest these customs are not always compatible with healthy

eating practices. Finally, as it relates to recovery, athlete responses suggest a clear understanding of food intake, acknowledging that they need to eat in advance of training and also need nutrition after training. However, inconsistent behaviours show that athletes are not always eating well after training for recovery. A number of team members also pointed to barriers to healthy eating especially when considering their access to food on a training day, which further complicates their dietary practices. In conclusion, the Royal Comfort Junior Rugby Team members demonstrate an overall general awareness of the importance of nutrition and human performance.

Objective 3

Determine players' experiences and satisfaction with current nutritional support within the Royal Comfort group of Rugby Teams in Harare.

The evaluation of players' experiences and satisfaction with the current nutritional support within the Royal Comfort group of Rugby Teams in Harare illustrates several significant relationships that emphasize the importance of developing a tailored nutrition program. Specifically, there is a very strong positive correlation ($r = 0.839$, $p < .001$) between the emphasis players place on meal timing before and after training sessions and the need for a nutrition plan that includes specific hydration strategies for training and matches. This suggests that players who prioritize meal timing also demonstrate heightened awareness of hydration's critical role in optimizing athletic performance.

Furthermore, the need for individualized nutrition advice is underscored by a strong correlation ($r = 0.713$, $p < .001$), indicating that players recognize the importance of incorporating cultural preferences into nutritional planning. This highlights the belief that dietary recommendations should reflect individual and cultural backgrounds to enhance acceptance and adherence.

Equally important, a significant correlation exists between players who skip meals on training days ($r = 0.610$, $p < .001$) and their beliefs about the influence of nutrition on athletic performance ($r = 0.429$, $p < .001$). This pattern suggests that inconsistent meal practices can undermine performance despite players' awareness of nutrition's role.

Lastly, the acknowledgment of a positive association between proper nutrition and recovery ($r = 0.521$, $p < .001$) further reinforces players' understanding of how dietary intake contributes to post-training restoration and overall performance capacity. Collectively, these findings demonstrate that

while players are aware of the relationship between nutrition, hydration, and performance, structured professional guidance remains essential to translate this knowledge into consistent dietary behaviors.

Table 4.13:

Correlation Matrix of Nutrition-Related Variables among Players

Control Variables	A nutritio n plan should address hydratio n strategi es for training and matches .	Cultural preferen ces should be consider ed in develop ing a nutritio n plan.	Players would benefit from personal ized nutritio n advice tailored to my needs.	Players pay attentio n to meal timing before and after training sessions .	Players often skip meals, especial ly on training days.	Players believe that nutritio n signific antly impacts my athletic perform ance.	Players feel that proper nutritio n aids in my recover y after training and matches .
A nutrition Correlation plan should address Significance hydration (2-tailed) gro up strategies for training and df matches.	1.000	.579	.713	.839	.610	.429	.616
	.	.000	.000	.000	.000	.001	.000
	0	57	57	57	57	57	57
Correlation	.579	1.000	.711	.564	.709	.496	.366

Cultural preferences should be considered in developing a nutrition plan.	Significance (2-tailed)	.000	.	.000	.000	.000	.000	.004
	df	57	0	57	57	57	57	57
Players would benefit from personalized nutrition advice tailored to my needs.	Correlation	.713	.711	1.000	.511	.481	.440	.527
	Significance (2-tailed)	.000	.000	.	.000	.000	.000	.000
	df	57	57	0	57	57	57	57
Players pay attention to meal timing before and after training sessions.	Correlation	.839	.564	.511	1.000	.526	.418	.639
	Significance (2-tailed)	.000	.000	.000	.	.000	.001	.000
	df	57	57	57	0	57	57	57
Players often skip meals, especially on training days.	Correlation	.610	.709	.481	.526	1.000	.613	.408
	Significance (2-tailed)	.000	.000	.000	.000	.	.000	.001
	df	57	57	57	57	0	57	57
Players believe that nutrition significantly impacts my	Correlation	.429	.496	.440	.418	.613	1.000	.521
	Significance (2-tailed)	.001	.000	.000	.001	.000	.	.000

athletic performance.	df	57	57	57	57	57	0	57
Players feel that proper nutrition aids in my recovery after training and matches.	Correlation	.616	.366	.527	.639	.408	.521	1.000
	Significance (2-tailed)	.000	.004	.000	.000	.001	.000	.
	df	57	57	57	57	57	57	0

Table 4.14:

NVIVO Analysis of Players' Experiences and Satisfaction with Current Nutritional Support

THEME	THEME DESCRIPTION	MATCHING MENTIONS FROM THE INTERVIEWS	NUMBER OF MENTIONS
Professional Guidance	Access to qualified nutrition experts for meal planning and advice, alongside recovery support.	"We have a physio for injuries, but no nutrition coach." / "After night training, I eat leftovers at 10 PM."	15
Meal Consistency	Reliability and appropriateness of meals and snacks provided during training and matches.	"Sometimes we get fruit after practice; often, nothing." / "Match-day lunches vary – last week just sadza."	8
Financial Access	Affordability of nutrient-dense foods and	"My 20 monthly stipend covers only beans and rice."	7

	supplements relative to player stipends.	/ "Protein powder? A luxury for rich clubs."	
Hydration Resources	Availability of hydration options, including electrolyte solutions, during training and matches.	"In summer, we share one water bottle for 10 players." / "They gave us energy drinks once before finals."	5
Cultural Compatibility	Alignment of provided meals with cultural dietary preferences and needs.	"They tried giving quinoa salads last month. We're Zimbabweans – we need sadza!"	4

Analysis of themes

Players express a strong demand for professional assistance noting that there are no qualified nutrition experts available for meal planning and recovery support. This absence leaves players with informal sources for nutrition information, causing doubt about their food choices. Meal consistency is another major issue as athletes are reporting inconsistencies in the meals and snacks available for training and matches. While some reported access to fruit after practice, many suggest that they feel their food access is inadequate for their recovery. The affordable access is an important barrier, suggesting players' stipends often only cover basic foods limiting their opportunity to buy nutrient-dense foods and supplements electric, which near all players still see as a luxury. Hydration resources are also lacking during training. Players' share limited water, especially during the summer months with warm temperatures which can have negative impacts on performance and recovery. Cultural compatibility is another consideration in this context, as examples of meals offered such as quinoa salad were not aligned with players preferences. Expectation was a barrier, as many players included that they strongly dislike anything foreign to their diet.

4.5 DESIGN AN ADAPTED, PERFORMANCE-ORIENTED NUTRITION PLAN FOR THE ROYAL COMFORT JUNIOR RUGBY TEAM.

The design of a performance-focused nutrition plan for the Royal Comfort Junior Rugby Team has sufficient evidence from the ANOVA analysis results to show the important factors to be included. As indicated in the regression model, the predictor variables have a sizeable association to the overall value of the nutrition plan. The F-value of 174.609 ($p < .001$) is notable. The biggest factors proposed include: the need to include players' culture in the nutrition plan so that the dietary recommendations align with and account for players' cultural background and tastes; the need to include hydration plans for training and matches—properly following hydration plans prior to, during, and after training/matches is key to performance enhancement as well as recovery; and, lastly, food safety would help guide the design of food plans for pre-game meals, including options for optimising energy and readiness for competition. Therefore, the proposed nutrition plan aims to target cultural orientation, hydration, and pre-game nutrition, ultimately improving players' overall performance, enjoyment, compliance with nutrition recommendations, and pathways to enhance sporting development and wellbeing.

Table 4.15.

ANOVA Model Summary for the Nutrition Plan Design

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	70.768	3	23.589	174.609	.000 ^b
Residual	7.565	56	.135		
Total	78.333	59			

Notes:

a. Dependent Variable: group

b. Predictors: (Constant), Cultural preferences should be considered in developing a nutrition plan; A nutrition plan should address hydration strategies for training and matches; A nutrition plan should include specific guidelines for pre-game meals.

Table 4.16.*Regression Coefficients for Predictors of Nutrition Plan Effectiveness*

Model	Unstandardized B	Std. Error	Standardized Beta	t	Sig.
(Constant)	.233	.101	—	2.298	.025
A nutrition plan should address hydration strategies for training and matches.	.513	.158	.604	3.236	.002
A nutrition plan should include specific guidelines for pre-game meals.	-.020	.237	-.023	-.086	.932
Cultural preferences should be considered in developing a nutrition plan.	.342	.171	.382	1.998	.051

Note: a. Dependent Variable: group

The coefficients resulting from regression analysis provide the foundation and validity to building an adapted, performance-oriented nutrition plan for the Royal Comfort Junior Rugby Team that encompasses elements that will assist with player performance and satisfaction. The analysis places significant emphasis on hydration strategies (unstandardized coefficient $B = 0.513$, $p = .002$). This suggests that a nutrition plan designed to support performance and recovery must prioritise fluid intake during training and competition. Although the guideline regarding pre-game meals showed a negligible effect ($B = -0.020$, $p = .932$), general recommendations on timing and composition of pre-event meals should still be made to ensure players are properly fuelled. The consideration of cultural preferences showed a positive coefficient ($B = 0.342$, $p = .051$), indicating that culturally relevant food options may assist with compliance and satisfaction. By implementing hydration strategies, culturally aligned food selections, and meal-timing guidance, the proposed

nutrition plan can take a holistic approach to athletic development and a positive interpretation of nutrition.

Table 4.17.

NVivo Analysis of Themes for Designing an Adapted, Performance-Oriented Nutrition Plan

THEME	THEME DESCRIPTION	MATCHING MENTIONS FROM THE INTERVIEWS	NUMBER OF MENTIONS
Nutritional Needs Assessment	Understanding the specific dietary requirements of young athletes, including individualized plans and macronutrient balance.	“We need to focus on their growth stages.” / “Each player has different dietary requirements.”	10
Performance and Recovery Strategies	Strategies to improve athletic performance and recovery through nutrition, including hydration and meal timing.	“Nutrition plays a key role in performance.” / “Recovery meals are essential after games.”	12
Hydration Awareness	Importance of hydration and strategies to ensure adequate fluid intake for optimal performance.	“Staying hydrated is crucial for energy.”	4
Education and Awareness	Teaching players about nutrition’s impact on performance and promoting healthy eating habits.	“We should educate the team on healthy eating.”	7
Meal Consistency	Reliability and appropriateness of meals and snacks provided during training and matches,	“Timing our meals affects our stamina.”	3

	ensuring they meet nutritional needs.		
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4.5.1 Themes for Consideration

The participants’ qualitative feedback on the design of an adapted, performance-oriented nutrition plan for the Royal Comfort Junior Rugby Team highlights several critical areas of consideration. The athletes emphasised the importance of the Nutritional Needs Assessment component of the plan, noting that meals should be designed for each individual based on their specific dietary requirements and developmental stage. They perceived that individualised planning is essential to maximise performance and recovery, and identified Performance and Recovery Strategies—including structured meal timing and proper hydration levels—as particularly important for maintaining energy throughout both training sessions and matches.

In addition, participants underscored the need for collective Education and Awareness initiatives, suggesting that programmes should be implemented to educate players on the effects of nutrition on performance and to encourage healthy eating behaviours as a positive aspect of athlete development. Under the theme of Meal Consistency, the athletes expressed the necessity for reliable and appropriate meals and snacks during training activities, noting that inconsistent meal timing negatively affected their stamina and overall performance.

Overall, the feedback demonstrates the athletes’ understanding of the critical role of nutrition in athletic development and underscores the need for structured support systems and adequate resources to develop a comprehensive nutrition plan. Such a plan should address existing gaps in nutrition-related practices among the participants to enhance both performance and wellbeing.

4.5.2 Discussion on Objective 1: Dietary Practices, Food Choices, and Meal-Timing Behaviours

The analysis of the combined qualitative (Table 4.9) and quantitative (Table 4.10) dietary practices, food choices, and meal-timing behaviours of the Royal Comfort Junior Rugby Team members in Harare reveals several important conclusions. The descriptive analysis illustrates moderate levels of awareness and satisfaction about dietary practices. With a mean score of 2.65, players have

limited knowledge of dietary practices. The qualitative data also show that players understand the basic tenets of eating for sport and performance, but they do not have access to any formalised education or assistance in making these dietary choices and behaviours. Regarding food choices, players have some understanding of eating fruits and vegetables, proteins, and whole grains, with a mean score of 2.73, but improvements are needed. Qualitative data also highlight how food choices and preferences are shaped by cultural differences; however, players report limited choices and variety, perhaps indicating restricted nutritional options.

Meal-time behaviours were inconsistent in both qualitative and quantitative findings. Players showed a mean score of 2.78 for awareness of hydration, providing an opportunity for improvement; qualitative data also indicated there was no formal hydration plan or strategy in place. Players may attempt to eat before training but lack a structured schedule, leading to irregular eating habits, further compounded by erratic snacking without guidance on healthy options.

Overall, while there is strong recognition among team members of the critical role nutrition plays in athletic performance, the findings highlight significant gaps in structure and guidance. Addressing these gaps through enhanced nutritional education, structured meal timing, and comprehensive hydration and recovery strategies could greatly improve players' dietary practices and overall athletic performance.

4.5.3 Discussion on Objective 2: Perceptions of Nutrition's Role in Performance and Recovery

The exploration of perceptions regarding nutrition's role in athletic performance and recovery among the Royal Comfort Junior Rugby Team members reveals significant insights supported by both quantitative (Table 4.11) and qualitative (Table 4.12) data. The ANOVA analysis indicates strong dissatisfaction with current nutritional support, evidenced by an F-value of 126.685 ($p < .001$) for satisfaction levels, suggesting that players feel their needs are not adequately met. This dissatisfaction is mirrored in qualitative responses, where athletes express a clear understanding of how proper dietary practices directly influence their performance, yet they highlight frustration over the lack of structured nutritional programmes and official dietary plans.

Players collectively acknowledge the necessity for better access to resources for making healthy food choices ($F = 121.377, p < .001$). This aligns with qualitative insights, where participants note cultural influences on their food preferences, recognising that family traditions may not always promote healthy eating practices. Moreover, the emphasis on the importance of specific guidelines for pre-game meals ($F = 160.086, p < .001$) underscores a shared recognition of nutrition's critical role in enhancing performance.

Despite understanding the importance of meal timing and recovery nutrition—players acknowledge the need to eat before training and after sessions—qualitative feedback reveals that inconsistent practices often lead to missed opportunities for optimal recovery. Barriers to accessing nutritious food options during training days further complicate dietary practices, emphasising the need for a comprehensive nutrition plan tailored to their specific needs.

4.5.4 Discussion on Objective 3: Experiences and Satisfaction with Current Nutritional Support

The analysis of players' experiences and satisfaction with current nutritional support within the Royal Comfort group of Rugby Teams in Harare reveals a complex interplay of quantitative (Table 4.13) and qualitative (Table 4.14) insights that underscore the need for tailored nutritional strategies. Quantitative data show a very strong positive correlation ($r = 0.839, p < .001$) between attention to meal timing and the necessity for a nutrition plan that includes hydration strategies, indicating that athletes who prioritise meal timing also understand the importance of hydration in enhancing performance. Qualitative responses reinforce this, with players expressing a strong desire for professional guidance and highlighting the absence of qualified nutrition experts to support meal planning and recovery.

Furthermore, the need for personalised nutrition advice is supported by a strong correlation ($r = 0.713, p < .001$) indicating that players believe their cultural preferences should inform dietary recommendations. This is echoed in qualitative feedback, where athletes mention that many meals do not align with their traditional dietary habits, leading to resistance against unfamiliar foods.

Additionally, the quantitative analysis shows a significant correlation between skipping meals on training days ($r = 0.610, p < .001$) and the belief that nutrition significantly impacts athletic

performance ($r = 0.429$, $p < .001$). Qualitative insights confirm this concern, as players report variability in the meals and snacks provided, often finding them inadequate for recovery. Financial constraints further complicate dietary choices, with many stating that their stipends allow only basic foods, limiting access to nutrient-dense options.

Finally, the relationship between proper nutrition and recovery ($r = 0.521$, $p < .001$) emphasises players' recognition of nutrition's critical role in both performance and recovery—yet qualitative responses indicate significant dissatisfaction with hydration resources during training, especially in warmer months.

4.5.5 Discussion on Objective 4: Implications for the Adapted Nutrition Plan

The development of a performance-oriented nutrition plan for the Royal Comfort Junior Rugby Team aligns with and expands upon current sports nutrition literature while addressing unique contextual challenges. The strong statistical relationship ($F = 174.609$, $p < .001$) between key predictors and nutrition plan effectiveness supports evidence that structured dietary interventions enhance athletic performance. However, the emphasis on cultural adaptation represents an underexplored dimension in sports nutrition, particularly in African athletic populations. While conventional guidelines prioritise macronutrient optimisation, this study highlights how cultural acceptability mediates dietary adherence.

The players' demand for individualised assessments reflects a growing recognition that age- and growth-stage-specific strategies are critical for adolescent athletes. The focus on hydration strategies aligns with established performance physiology, but reported inconsistencies in fluid access during training highlight an implementation gap rarely addressed in high-resource settings. A notable divergence from mainstream literature emerges in pre-game nutrition: although benefits are well documented, logistical constraints (e.g., meal availability) can override theoretical knowledge in resource-limited environments. Education initiatives remain crucial, while the emphasis on meal consistency underscores the disconnect between institutional catering and athletes' physiological needs during critical training periods.

This study contributes by demonstrating how financial and infrastructural limitations necessitate adapted applications of sports nutrition principles. The proposed plan's integration of cultural,

economic, and logistical factors provides a model for adaptable sports nutrition in developing contexts, advancing the field beyond its current Western-centric paradigms.

4.6 CHAPTER SUMMARY

This chapter analysed players' dietary practices, perceptions, and experiences, revealing moderate nutrition awareness but poor structure and support. It identified strong links between hydration, cultural preferences, and performance needs. The findings guided the development of an adapted nutrition plan focused on hydration, cultural relevance, and meal consistency. Chapter 5 presents the discussions, conclusions, and recommendations.

CHAPTER 5: DISCUSSIONS, CONCLUSIONS, AND RECOMMENDATIONS

5.1 INTRODUCTION

This chapter brings together the main findings from the research on *Designing an Adapted Performance-Oriented Nutritional Plan for Royal Comfort Junior Rugby Team*. Research explored foods eaten, nutritional health perceptions and structural hindrances for young athletes in Harare Zimbabwe. The integration of both detailed quantitative and qualitative data enabled the development of a nutrition framework that was culturally relevant and feasible. It is important to summarise the main findings, potential implications, discuss the limitations, and provide concerns for future research and implementation.

5.2 SUMMARY OF KEY FINDINGS

This section presents a summary of the key findings in relation to each of the study's objectives and research questions. The study sought to develop an adapted, performance-oriented nutrition plan for the Royal Comfort Junior Rugby Team by examining players' dietary habits, perceptions, and institutional support structures.

1. Dietary Practices and Meal Timing

The findings revealed that most players had irregular meal patterns and limited awareness of how meal timing affects performance and recovery. Breakfast was often skipped or replaced with low-energy foods, while post-training meals were inconsistent. These patterns were largely influenced by household food availability and financial constraints.

2. Hydration Practices and Knowledge

Although players understood the importance of hydration, many lacked access to sufficient fluids during training and competition. Hydration strategies were informal and unmonitored, resulting in frequent fatigue and delayed recovery, especially during hotter months.

3. Perceptions of Nutrition in Performance and Recovery

The majority of players and coaches recognized the link between proper nutrition and athletic performance. However, nutrition was viewed as a general health matter rather

than a specialized component of sports training. This highlighted the need for structured nutrition education and coach-led awareness sessions.

4. Experiences and Satisfaction with Current Nutritional Support

Players expressed dissatisfaction with the level of institutional nutritional support available. Schools lacked nutrition professionals, structured meal plans, or budget allocations for performance diets. This gap limited players' ability to meet their daily energy and protein requirements.

5. Elements for an Adapted, Performance-Oriented Nutrition Plan

The study identified the need for a contextually grounded plan emphasizing locally available, affordable foods; scheduled meal timing; and consistent hydration practices.

The inclusion of culturally familiar foods such as sadza, beans, and moringa was seen as a way to improve adherence and sustainability.

5.3 CONCLUSIONS

The study has achieved its main aim to create an adapted performance-based nutrition plan for the Royal Comfort Junior Rugby Team by clearly identifying and examining various issues that affect the dietary behaviors and nutritional needs of a junior contact sports player. The mixed-methods approach has helped to achieve the study's sub-aims and progressed to generate evidence-based recommendations for implementable nutrition plans for athletes in resource-limited settings.

DIETARY PATTERNS AND MEAL TIMING PRACTICES (OBJECTIVE 1):

The research identified an important discrepancy in the players' meal timing and consistency with disruptive consumption patterns that are detrimental to energy availability and recovery. Even though athletes valuably understood the importance of structured nutrition, the logistics (barriers to make it happen) and financial limitations stopped prevented athletes from adhering to structured nutrition practices.

PERCEPTIONS OF THE ROLE OF NUTRITION (OBJECTIVE 3):

Players had good theoretical understanding of the role of nutrition on performance ($C=160.086$, $p<.001$) but struggled with the practical application of those dietary literacy skills. Participants

reflected some frustration regarding the non-professional aspect of Nutrition support and the delivery of meals inappropriate for their culture thereby restricting dietary compliance altogether.

EXPERIENCES WITH EXISTING SUPPORT (OBJECTIVE 4):

Uniform satisfaction with existing support ($F=126.685$, $p<.001$) existed throughout the data (with the exception of the time spent preparing a meal); This was driven predominantly by inconsistency with meal provision, lack of hydration materials, and access to nutrient-dense foods. Players felt restricted further financially which stalled their capacity to meet their own nutritional needs.

ADAPTED NUTRITION PLAN DEVELOPMENT (OBJECTIVE 5):

Recognising these themes, the proposed amended nutrition plan encompasses:

Culturally Relevant: Introducing community familiar foods to improve acceptability and adherence.

Meal Timing Structure: Aligning some meals before/after training with performance demands.

Hydration: Planning viable hydration practices, particularly for heat when proper focus is crucial.

Education/Awareness: Offering nutrition literacy projects and low-cost meal plans.

FINAL RECOMMENDATIONS

To be more effective in this initiative, stakeholders need to:

- Make use of local nutritionists: Ensure dietary guidance is culturally proximate.
- Obtain institutional support: Collaborative approach, with schools and sponsors, to ensure consistent meal provision for all players.
- Monitor and adjust: Evaluate player experiences and physiological responses repeatedly over time in order to adjust as needed.

This research is not simply a departure in the sporting nutrition journey for young athletes in Zimbabwe, but contributes a viably operationalizable model in different resource constrained settings and in different stages of sport development elsewhere in the world. More specifically,

future research should investigate the longitudinal outcomes in relation to sporting performance and health outcome from such contextually adapted interventions.

5.4 STUDY LIMITATIONS

1. **Sample Specificity:**

The study focused only on junior rugby players from Harare, which limits the generalizability of the findings to other regions, age groups, or sports.

2. **Self-Reporting Bias:**

Some of the data were self-reported through questionnaires and interviews, which may have introduced recall bias and subjectivity, particularly in dietary recall and hydration patterns.

3. **Short-Term Focus:**

The cross-sectional design captured information at a single point in time, making it difficult to observe long-term behavioural or physiological changes related to nutrition.

4. **Resource Bound:**

The study could not include biochemical or physiological tests (e.g., blood work or body composition) due to limited resources, reducing opportunities for objective data comparison.

5. **Methodological and Literature Constraints:**

Integrating qualitative and quantitative data posed minor challenges due to differences in depth and scale of responses. In addition, there was limited Zimbabwean and regional literature on adolescent sports nutrition, leading to reliance on Western-based studies that may not fully reflect local socioeconomic and cultural realities.

5.5 Implications and Recommendations

5.5.1 Implications for Practice

For Coaches and Institutions

Establish a meal timing procedure and monitor hydration levels when training in extreme heat. Connect with local nutritionists to establish reasonably priced meal plans that are culturally adapted.

For Athletes and Families

Our education strategies should help players selected food options that fit their fiscal and cultural restrictions.

5.5.2 IMPLICATIONS FOR THEORY

This study significantly questions universalist positions in sports nutrition by highlighting how cultural acceptability and resource accessibility can complicate dietary efficacy. It suggests alignments with newer frameworks calling for:

- Culturally Responsive Sports Nutrition: adapting existing guidelines to local food systems and cultural traditions (Onywera et al., 2022).
- Socioeconomic Realities: incorporating cost-analysis when constructing athlete performance nutrition (Pelly et al., 2023).

5.5.3 IMPLICATIONS FOR FUTURE RESEARCH

1. Longitudinal Research: Conduct research that looks at the impact of culturally adapted nutrition plans on performance metrics over time.
2. Comparative Research: Examine similar barriers to improving nutritional practices on athletes in other youth sport organizations in Africa.
3. Experimental Trials: Conduct simple trials to investigate feasible solutions for achieving hydration and meal coordination in low-resource settings that can be scaled.

5.6 CHAPTER SUMMARY

This chapter summarized the findings of the study with particular focus on the relationships between nutritional knowledge, culture, and institutional support that influenced the dietary practices of athletes. In addition to reaffirming existing principles in sports nutrition, the study illustrated significant disconnections between development and application in resource constrained contexts. Action oriented recommendations were outlined for key stakeholders and further research was recommended to develop contextualized nutrition model. The study ultimately added a model to adapt global sport science understandings to local realities to ensure fair access to performance nutrition.

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LIST OF APPENDICES

QUESTIONNAIRE

INTERVIEW GUIDE