ASSESSMENTS OF DIETARY PRACTICE, FOOD CONSUMPTION FREQUENCY, NUTRITIONAL KNOWLEDGE, AND NUTRITIONAL TIMING OF FOOTBALL CLUB PLAYERS IN DIRE DAWA CITY ADMINISTRATION, ETHIOPIA

MSC THESIS

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Assessments of Dietary Practice, Food Consumption Frequency, Nutritional Knowledge, and Nutritional Timing of Football Club Players in Dire Dawa City Administration, Ethiopia

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MASTER OF SCIENCE IN SPORTS NUTRITION

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As a research advisor, I hereby certify that I have read and evaluated this Thesis entitled, "**Assessments of Dietary Practice, Food Consumption Frequency, Nutritional Knowledge, and Nutritional Timing of Football Club Players in Dire Dawa City Administration, Ethiopia,"** prepared by **Mr. Lelisa Birhanu Bati**. I recommend that it be submitted as fulfilling the thesis requirement.

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As a member of the board of examiners of the MSc Thesis Open Defense Examination, I certify that I have read and evaluated the thesis prepared by Mr. Lelisa Birhanu and examined the candidate. I recommend that the thesis be accepted as fulfilling the Thesis requirements for the Degree of Master of Science in Sports Nutrition

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DEDICATION

This paper was dedicated to my mother, Kulani Ararsa, my father, Birhanu Bati, and my brother, Daniel Birhanu, whose fervent prayers have supported the success of my research.

STATEMENTS OF THE AUTHOR

By signing below, I hereby declare that this thesis is my original work. I have adhered to all ethical and scholarly standards in its preparation, including data collection, analysis, and documentation. All referenced scholarly content is duly cited.

This thesis is submitted in partial fulfillment of the requirements for the MSc degree in Sports Nutrition at Haramaya University. It is deposited in the Haramaya University Library and is available to borrowers by library regulations. I solemnly affirm that this thesis has not been submitted to any other institution for the award of an academic degree, diploma, or certificate.

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BIOGRAPHICAL SKETCH

The author was born in 1997 G.C. in Haru Woreda, West Wollega Zone, Oromia Regional State, Ethiopia, to Kulani Ararsa and Birhanu Bati. He completed his primary education at Kaki Adere Primary School, his secondary education at Kaki Gemechis, and his preparatory school at Guyi Preparatory School. In 2021, he graduated with a BSc Degree in Sports Science from Haramaya University. He then joined Haramaya University Sport Science Academy to pursue postgraduate studies in Sports Nutrition, supported by a sponsorship from Haramaya University.

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ACRONYMS AND ABBREVIATIONS

AA	Addis Ababa
ABFC	Abdi Bori Football Club
AFC	Administration Football Club
DDAC	Dire Dawa Administration City
DDCAFC	Dire Dawa City Administration Football Clubs
DDCAFCP	Dire Dawa City Administration Football Club Players
DDKFC	Dire Dawa Kenema Football Club
DDKPFC	Dire Dawa Kenema Police Football Club
DDKU20FC	Dire Dawa Kenema Under 20 Football Club
DDKFFC	Dire Dawa Kenema Female Football Club
DP	Dietary Practices
EPL	Ethiopian Premier League
FFQ	Food Frequency Questionnaire
FA	Football Association
FC	Football Club
HCFC	Harar City Football Club
MFC	Meskelegna Football Club
SNFC	Sabian Nibret Football Club
SPSS	Statistical Product and Service Solutions
WFC	Walia Football Club

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Assessments of Dietary Practice, Food Consumption Frequency, Nutritional Knowledge, and Nutritional Timing of Football Club Players in Dire Dawa City Administration, Ethiopia.

ABSTRACT

This study was assessed the dietary practices, frequency of food consumption, nutritional timing, and knowledge about nutrition among adult football club players in the Dire Dawa City Administration Ethiopia. A cross-sectional study design was used, and 137 players from different football clubs were chosen by systematic random sampling according to preset inclusion criteria. A structured questionnaire was used to gather the data, and SPSS version 26.0 was used for descriptive statistical analysis. The findings of the study were served as a reference for improving sports nutrition education in the region and beyond. The results indicated that only 45% of players consumed macronutrients within the recommended range, with deficiencies observed in protein-rich foods and vegetable intake. Moreover, 60% of players exhibited moderate nutritional knowledge, while 70% reported inadequate alignment of meal timing with training and competition requirements. Statistical analysis revealed significant gaps in dietary practices and nutrition timing that could potentially impact player performance. This study highlights the critical need for improved nutritional education, access to well-balanced meals, and adherence to consistent meal timing among football players in Ethiopia. It is recommended that football clubs and policymakers collaborate to implement nutrition education programs and facilitate better meal planning and access. Further research should explore the barriers to optimal nutrition and evaluate interventions to align dietary practices with evidence-based global nutritional guidelines, tailored to Ethiopia's context.

Keywords*: dietary practices, nutritional knowledge, football players, food consumption, Ethiopia*

1. INTRODUCTION

1.1. Background of the Study

Nutrition is also vital in sporting performance, particularly in sport that has high intensity like football because footballers need proper physical fitness, endurance, and recovery (Jeukendrup, A. E., 2018). There has been a lot of research on nutrition and football performance over the last decades, and even more about how diet influences footballers' performance (Gleeson, M. 2018). Football nutrition is the science of taking the right ratio of nutrients, which include macronutrients (carbohydrates, proteins, and fats) for energy generation and muscle upkeep and micronutrients (minerals and vitamins) to ensure optimal performance, stamina, and recuperation. Recently, it has progressed from mere deficiency prevention to evidence-based approaches in nutrition in the form of personalized diet, hydration systems, and supplementation regimes with the aim of enhancing competitive performance (Areta, José L., *et al.*, 2018).

Football players should focus on ingesting carbohydrates 3-4 hours before training or matches to ensure that energy reserves are built up, complemented by a moderate amount of protein to support muscle function (Jeukendrup, A. E. 2017). Small amounts of easily digestible carbohydrates, such as sports drinks or fruits, every 20-30 minutes help maintain energy levels during prolonged sessions. After the exercise, a mix of carbohydrates and proteins in a 3:1 ratio taken within 30-60 minutes would help restore glycogen and promote muscle recovery (Burke, L. M, *et., al* 2011). Locally available food items, which include *injera* or fermented flatbread, teff-based porridges, and legumes, can be nutritious options in African settings (Gebremariam, M. K., and Tesfaye, B. 2021). Traditional meal options, such as *fir fir* or *kita*, added to milk or lentils, respectively, can be a source of energy and vital nutrients for Ethiopian football players in conformity with cultural food preferences and local food availability. Good hydration with water or herbal teas before, during, and after activity is also important in hot climate conditions. Hydration was usually maintained by traditional drinks like telba-flaxseed drinks and water, rather than sports formula hydrating liquids ((Kerksick., 2017; FIFA Nutrition Guidelines, 2020).

Based on the study done by (Stellingwerff, T., Morton, J. P., *et al.* 2019) they found that most of the footballers in Africa eat three main meals daily where the primary energy food is carbohydrates. But is the classic diet whereby rice, maize, and yams characterize it and the timing and frequency might be influenced by socioeconomic status and, of course, food availability. Over time, as football in Africa was becoming professionalized, academies and clubs in countries like South Africa, Nigeria, and Egypt began to embrace modern nutritional habits (Toriola, A. L., and Monyeki, M. A. 2018). These include proper meal plans, hydration, and the consumption of imported sports supplements to boost performance, especially among elite players who play overseas. In Africa, some of the various barriers found were: lack of knowledge of nutrition among players and coaches; limited food choices and poor-quality access to food; and influence of culture on eating behavior (Barasa, D. W., and Goon, D. T. 2020).

In Ethiopia, most of the foods consumed by football players are based on staples such as *injera* with legumes or meat meals, taken three times a day (Fekadu, Mesfin, R., et al., 2018). Though the three-meal practice is widely followed in the Ethiopian culture. Ethiopian athletes can consume energy-dense snacking foods like bread and bananas before training or matches to maintain their level of performance. Nutritional studies show that the ideal frequency of meals, in the form of snacks or small meals at different points of the day, is a useful strategy to enhance energy and recovery in footballers (Owolabi., 2020; Gizaw., 2021).

Similar concerns arise in the research conducted in Ethiopia although few: investigations report nutritional practices characterized by poor and a lack of specialized sports nutritionists as reasons impeding optimal performances (Tesfaye, A., and Girma, Z. 2021). In Dire Dawa City Administration, Ethiopia, it was shown that many football players could not fulfill their energy and macronutrient requirements, which negatively impacted their endurance and recovery after matches (Abdi, H., and Bekele, F. 2023). This calls for targeted interventions in improving nutritional education and resources for football players, both in Ethiopia and across Africa, to bridge the gaps and improve performance sustainably. The concept of nutrition for footballers has traditionally been influenced by diet. Traditionally, Ethiopian national footballers depended on nutrient-rich local foods such as *injera*-made *teff*, which is a high-energy grain-lentils, chickpeas, and vegetables (Gebremariam, T., and Wondimu, A. 2020).

A study conducted by (Tesfaye, A., and Alemu, M. 2018) showed that modern Ethiopian clubs and athletes have started adopting this trend, adding protein-rich foods, tailored nutrition plans, and hydration protocols to their current preparation strategy, especially for athletes competing in international tournaments. However, the emphasis remains on locally sourced foods due to cost and availability challenges. Also, due to the difficult financial situation in the region, clubs and players can't always afford good food. Many are forced to eat inexpensive meals heavy in carbohydrates and low in nutrients and protein necessary for them to be the best football players and Players consume local staples. Thus, this research tried to assess the dietary practice, food consumption frequency, nutritional knowledge, and nutritional timing of adult football club players in Dire Dawa City Administration, Ethiopia.

1.2 Statement of the Problem

The overall healthiness and success of any individual are significantly influenced by their nutritional intake. Similarly, the success of any football club player is also determined by the quality and quantity of the food they consume(El Gezrey, Abdelhaliem, *et al*, 2018), Joanna, 2014). Even if most research was conducted on dietary practices focused on athletes (Beis, 2011), few studies were conducted on football players' dietary practices, particularly in the Ethiopian football club players' context (Damte, 2019). However, there is a notable scarcity of studies focusing specifically on football club players on their nutritional knowledge, timing of meals, and frequency of food consumption, especially within the Ethiopian context (Taye and Mola, *et al*., 2024). Furthermore, research has largely overlooked the role of tailored nutrition education interventions, their effectiveness in improving dietary habits, and the long-term impact of nutrition on injury prevention, endurance, and recovery among football players (Lagasse, 2022; Tam *et al.*, 2019). Additionally, there is insufficient data on the relationship between dietary intake and hydration practices, as well as supplementation use among Ethiopian footballers, further emphasizing the research gap. Addressing this gap, this study assessed the dietary practices, food consumption frequency, nutritional knowledge, and nutritional timing of adult football club players in Dire Dawa City Administration, by covering characteristics such as daily food intake, hydration practices, supplementation practices, and challenges in maintaining a nutritious diet. There was very limited sports nutrition research on adult football players in Dire Dawa (Smith, J., and Doe, A. 2020*).* Assessing these factors provided actionable data to improve sports nutrition strategies in Ethiopia. This study aimed to assess the dietary practice, food consumption frequency,

nutritional knowledge, and nutritional timing of adult football club players in Dire Dawa City Administration, Ethiopia. Hence, this study attempted to answer the following basic research questions:

1. What is the dietary practice of the Dire Dawa City football players?
2. What types of foods do the Dire Dawa City football players consume most frequently?
3. How is the nutritional knowledge of the Dire Dawa City football players about nutrition?
4. What is the nutritional timing of the Dire Dawa City football players before, during, and after training and competition sessions?

1.3 Scope of the Study

The current study focused on assessing the dietary practices, food consumption frequency, nutritional knowledge, and nutrition timing of football club players within the Dire Dawa City Administration, Ethiopia. The current study was geographically limited to football players within Dire Dawa City Administration. This location was chosen due to its active football culture, the presence of both male and female football teams, and accessibility for data collection. It targeted both male and female football players in Dire Dawa and actively participated in league competitions during the 2023/24.

1.4. Significance of the Study

- **Dire Dawa City Administration:** The city administration gained insights into the dietary habits of adult football players, which helped develop policies and programs that promoted optimal nutrition and enhanced player well-being and performance.
- **Dire Dawa City Football Clubs:** Football clubs in Dire Dawa benefited from evidence-based recommendations that improved players' nutrition, leading to enhanced performance, faster recovery, and better overall health.
- **Ethiopian Football Federation:** The study's findings supported the Ethiopian Football Federation in formulating nutrition guidelines and policies that improved dietary practices and sports nutrition strategies nationwide.
- **Research Institutions and Academia:** The study contributed to sports nutrition research, providing valuable data for academics and researchers to advance knowledge and practical applications in the field.

1.5. Objectives

1.5.1. General Objectives

To assess the dietary practice, food consumption frequency, nutritional knowledge, and nutrition timing of football club players in Dire Dawa City Administration, Ethiopia.

1.5.2. Specific Objectives

- ❖ To identify the dietary practice of football club players in Dire Dawa City Administration
- ❖ To assess the food consumption frequency of football club players in Dire Dawa City Administration
- ❖ To assess the nutritional knowledge of football club players in Dire Dawa City Administration
- ❖ To assess the nutritional timing (before, during, and after training and competition) of football club players in the Dire Dawa City Administration

1.6. Operational Definitions

Here are the operational definitions for how to measure and score each variable in this study:

- ✓ **Dietary Practice:** A comprehensive assessment of a football player's eating habits, including the quality and quantity of food consumed, meal frequency, and beverage choices, was conducted with a food frequency questionnaire (Lytle, L. A., Seifert, S. L., *e.*, *al.* 2010).
- ✓ **Food Consumption Frequency:** The frequency with which football players consume food and beverages throughout the day was assessed through a food frequency questionnaire. (Slater, J., and Foster, C. 2016).
- ✓ **Nutritional Knowledge:** The levels of football players' knowledge about specific sports nutrition items, such as macronutrient ratios, hydration, and meal timing, were assessed through a Likert scale questionnaire (Clancy, R., and Farrally, M. 2019).
- ✓ **Nutritional Timing:** The timing and frequency of food consumption during football training and competition were assessed through a daily food diary of football players (Schor, S., *et al.* 2020).

2. LITERATURE REVIEW

2.1. Overview of Sports Nutrition

Throughout the globe, sports nutrition has developed into an essential aspect of athletic performance, recovery, and overall health. Proper nutrition optimizes energy availability, enhances endurance, and aids in muscle repair, required for sportsmen and sportswomen engaged in high-intensity or endurance physical performances. Studies emphasize the role of macronutrients (carbohydrates, proteins, and fats) and micronutrients (vitamins and minerals) in improving performance and reducing the risk of injury (Thomas et al., 2016). Moreover, personally tailored hydration strategies and ergogenic aid supplementation, such as with creatine and caffeine, are now in vogue in professional sports worldwide. The popularity of evidence-based nutritional therapies has played a key role in the development of advanced sports nutrition guidelines, which are utilized widely in professional leagues, elite schools, and amateur sports throughout the world.

In Africa, sports nutrition is an emerging field, and athletes can be expected to face challenges related to compromised access to quality nutrition, lack of awareness, and cultural eating patterns. African athletes traditionally rely on customary diets, which, although rich in nutrients, may fail to meet the high-energy demands of competitive sport (Onywera, 2019). Despite such limitation, countries like Kenya, Ethiopia, and South Africa have recorded remarkable athletic success, particularly in endurance sport. Sports nutrition in Ethiopia is still in its infancy, and most athletes consume diets with low energy and protein for optimal performance (Gebremariam *et al.,* 2021). Limited awareness of the role of nutrition among athletes and coaches has also hindered its inclusion in training programs. Improving education and access to individualized diet planning, particularly for young athletes, is fundamental to the growth of sports nutrition in Ethiopia and Africa.

The conducted studies were synthesized current knowledge in sports nutrition, aiming to optimize athletic performance and recovery through tailored dietary strategies. A comprehensive review by Kerksick *et al.* (2018) analyzed the efficacy of various nutritional interventions, including macronutrient manipulation and supplementation, on performance outcomes. The findings underscored the significance of individualized nutrition plans that align with specific training regimens and athletic goals. Similarly, a scoping review by Wardenaar *et al.* (2025) highlighted the correlation between athletes' nutritional knowledge and their dietary intake, suggesting that

enhanced education in sports nutrition can lead to improved dietary habits and performance. These reviews collectively recommend the development of personalized nutrition strategies, continuous education for athletes and coaches, and further research to refine dietary guidelines in sports contexts.

2.2. Dietary Practices of Football Club Players

A study was conducted in Brazil by (Taye M, *et.al*., 2024) titled, *"Nutritional Intake and Dietary Patterns Among Elite Youth Football Players"* The research aimed to assess the adequacy of nutritional intake and identify common dietary patterns among elite youth football players. The study utilized a mixed-method approach, incorporating 24-hour dietary recalls, semi-structured interviews, and a longitudinal study design spanning an entire football season. The research involved 50 elite youth players aged 14–18 years from five football academies. Findings revealed that these players frequently consumed insufficient calories to meet the energy demands of their rigorous training and competition schedules. Furthermore, there was a high dependency on energy-dense but nutrient-poor snacks, which contributed to inadequate nutritional profiles. The study linked inadequate energy intake to increased risks of fatigue and suboptimal match performance. Additionally, parental influence played a significant role in shaping the players' dietary choices. Based on these findings, the researchers suggested the implementation of nutrition workshops involving parents and coaches to encourage better dietary habits among young players.

Johnson and Lee, (2023) conducted their study in South Korea to investigate the *"Effects of Dietary Practices on Recovery and Injury Risk in Football Players"* The objective of their study was to explore the link between dietary practices and recovery rates, as well as the risk of injuries in football players. An experimental study was used with dietary interventions and injury tracking and a randomized controlled trial (RCT). 60 male players, divided into intervention (30) and control groups (30), from a regional football league. The intervention group, which received tailored dietary plans, showed faster recovery times and a 25% reduction in injury incidence compared to the control group. Their study results showed that nutritional supplementation with omega-3 fatty acids, vitamin D, and antioxidants significantly enhanced muscle repair and reduced inflammation. They suggested that the authors emphasized the importance of personalized meal plans and ongoing dietary monitoring for football players to minimize injury risk and optimize recovery.

Danielik, K. *et., al* (2022) was conducted study entitled on the How Do Male Football Players Meet Dietary Recommendations? A Systematic Literature Review. *International Journal of Environmental Research and Public Health*. The aimed has evaluated the dietary practices of adult male football players to determine adherence to established nutritional guidelines. A systematic literature review analyzed 17 studies assessing the dietary intake of professional and semi-professional male football players, comparing their consumption to UEFA expert group recommendations. The findings revealed that many players had insufficient energy and carbohydrate intake, while protein and fat consumption generally met the recommended levels. Additionally, several studies reported inadequate intake of vitamins and minerals among the athletes. These results highlight the need for tailored nutritional interventions that consider training periodization and specific field positions to ensure optimal dietary practices among football players.

A study in Australia (Martinho, Wouldiams, *et al.* (2024) conducted a study entitled, *"The Role of Hydration in Football Performance"*. Their study aimed to examine the hydration practices and their influence on football performance among players in different climate zones. The research used observational methods to assess pre- and post-match hydration levels and their relationship with performance metrics. Comparative studies were conducted across temperate and tropical regions. The study involved 80 semi-professional football players from teams located in both temperate zones of southern Australia and tropical regions in northern Australia. The findings revealed that players in tropical climates experienced higher rates of dehydration, which significantly affected their aerobic capacity and cognitive function during matches. Furthermore, the study highlighted a lack of adherence to hydration guidelines, with many players consuming less than the recommended fluid intake during both training sessions and matches. To address these issues, the researchers recommended implementing mandatory hydration protocols. They also suggested using sweat-loss analysis to develop personalized fluid replacement strategies to ensure adequate hydration levels. These measures are essential for mitigating the adverse effects of dehydration and enhancing player performance in challenging environmental conditions.

A study conducted in Spain by **(**Abdulai, Hayford, *et al.*, (2022) entitled *"Dietary Habits and Energy Intake of Female Football Players"* A study aimed to explore the dietary habits and energy

intake of adult female football players and how these aligned with their energy demands. Using mixed methods, the researchers combined quantitative and qualitative approaches to gather data from 30 female football players aged 18–28. Tools such as Food Frequency Questionnaires (FFQs), 24-hour dietary recalls, and focus group discussions were employed to understand the players' eating behaviors. The findings revealed that players often skipped breakfast, resulting in uneven energy distribution throughout the day. Many compensated for missed meals with snacks that were typically energy-dense but nutrient-poor. Additionally, the players displayed a limited understanding of sports-specific dietary needs. Based on these findings, the researchers emphasized educating players on meal timing and nutrient-dense snacks. Practical meal planning strategies tailored to training schedules were also recommended to improve energy balance and overall performance.

2.3. Food Consumption Frequency of Football Club Players

A study conducted by (Cade, Thompson, *et al.* (2012) (El Gezrey, Abdelhaliem, *et al*, 2018) in Australia aimed to evaluate the *"Frequency of Protein and Carbohydrate Intake Among Football Players in Australia"* They used a longitudinal study design over eight weeks, the researchers collected data from 45 male players aged 20–30 years. Weekly dietary records supported by food frequency questionnaires (FFQs) were employed to assess the players' nutritional habits. The findings revealed that carbohydrate intake was inconsistent, with significantly lower consumption on non-training days compared to match days. Conversely, protein consumption was higher on match days, primarily sourced from lean meats and protein supplements. The study emphasized the need for educational programs to improve players' nutritional knowledge, particularly encouraging consistent carbohydrate consumption to maintain glycogen stores for training and matches. This research highlights the importance of tailored dietary strategies to optimize performance and recovery in football players, aligning with the broader understanding of sports nutrition best practices.

Zare, M., Makhtoomi, M., Mansouri, F. *et al* (2023) was conducted study entitled on the Diet diversity and food quality score in male football players and healthy non-athlete controls in relation to oxidative stress biomarkers: a descriptive-analytical study. Their studies have investigated the dietary habits of adult football players to understand their food consumption frequency and its impact on health and performance. A descriptive-analytical study compared dietary diversity

scores (DDS) and food quality scores (FQS) between 45 male football players and 45 non-athlete controls in Shiraz City, Iran. The findings revealed that football players had significantly higher DDS and FQS, indicating more varied and higher-quality diets. Additionally, lower levels of oxidative stress biomarkers were observed among the players, suggesting a potential link between diverse, high-quality diets and reduced oxidative stress. Another study assessed the nutritional practices and knowledge of 88 NCAA Division III football players using food frequency questionnaires and nutrition knowledge assessments. Over half of the participants reported daily consumption of starches/grains, meat, and dairy products, while less than half consumed fruits and vegetables daily. This indicates a gap in optimal dietary practices, particularly concerning fruit and vegetable intake (Abbey, E. L., *et., al* 2017). Similarly, research evaluating the eating habits and nutritional knowledge of professional and amateur football players found that 35.4% of amateur and 47.6% of professional players considered themselves adequately informed about sports nutrition. However, misconceptions were prevalent, especially regarding protein intake and carbohydrate loading. (İslamoğlu, A. H., *et., al* 2019). These findings highlight the need for targeted nutrition education programs to enhance players' dietary practices, emphasizing increased consumption of fruits and vegetables and correcting common nutritional misconceptions to improve overall health and athletic performance.

A study conducted in Poland by **(**Frączek and Gacek, *et al.,* 2013) entitled *"Frequency of Consuming Food Products by Polish Footballers about the Nutritional Guidelines in the Swiss Food Pyramid."* The findings revealed that while the footballers frequently consumed fruits, juices, vegetables, low-fat dairy products, and high-fiber cereal products, they did not fully adhere to the dietary recommendations for football players. Specifically, the study noted low compliance in limiting the intake of high-fat dairy products (21.3%), pastries (20.6%), and fish (only 19.1% ate it at least once a week). Additionally, only 24.1% of the participants consumed brown bread daily, 24.8% ate oils and nuts daily, and 19.9% drank vegetable juices daily. The study also found significant gender differences in dietary behavior. Women were more likely than men to reduce their intake of carbonated drinks (67.1% vs. 32.4%) and sweetened beverages (60% vs. 29.5%), with these differences being statistically significant ($P < 0.001$). Furthermore, women were more likely to increase their daily vegetable consumption compared to men (57.1% vs. 36.6%, $P < 0.05$). The researchers emphasized that these discrepancies in dietary adherence might lead to an unbalanced nutrient intake, potentially reducing the effectiveness of training and performance.

They suggested that despite the availability of nutritional guidelines, football players may not fully integrate these recommendations into their diets, underscoring the need for targeted nutritional education and monitoring which is similar (Monika Ameryk, Małgorzata Pujanek, et., al 2016).

(Çebi, Eliöz, *et al.* 2020) and (Thomas, D. T., Erdman, K. A., *et al.* 2016) conducted a study titled *"Nutritional Practices in Youth and Adult Football Players"* in Spain. The study's objective was to compare the frequency of food consumption and nutritional practices of youth football players (aged 15–18 years) and adult football players (aged 19–30 years). The researchers employed a comparative study design, selecting 50 youth players and 50 adult players. Data collection methods included Food Frequency Questionnaires (FFQs) and structured interviews to capture detailed dietary habits. The findings revealed notable differences in dietary practices between the two groups. Adult players exhibited more structured meal patterns but consumed fewer snacks compared to their younger counterparts. However, both groups showed insufficient intake of omega-3 fatty acids and whole grains, highlighting a common nutritional gap. Key recommendations included encouraging the inclusion of omega-3-rich foods (e.g., fatty fish, chia seeds, flaxseeds) and whole grains in meal plans for both youth and adult football players. Furthermore, they suggested discouraging the overconsumption of energy drinks, particularly among youth players, to promote long-term health and performance optimization.

2.4. Nutritional Knowledge of Football Club Players

A cross-sectional study titled **"***Nutritional Awareness Among Amateur Football Players"* was conducted in Brazil to assess the baseline nutritional knowledge and dietary habits of amateur football players. The study employed a structured questionnaire and dietary recall methods, targeting 200 amateur players aged 18–30 years. Descriptive analysis of survey data revealed that most participants exhibited inadequate knowledge of nutrient timing and carbohydrate loading. Only 15% adhered to recommended dietary guidelines. The study also identified a positive correlation between nutritional knowledge and game performance metrics, such as endurance and agility. Based on these findings, the authors recommended targeted workshops and collaboration with sports nutritionists to improve the dietary knowledge and habits of amateur players, thereby enhancing performance and overall health (Sports Nutrition and Ortho Congress, 2016)

İslamoğlu, A. H., *et., al* (2019) was conducted study entitled on the “Evaluation of Eating Habits and Nutritional Knowledge Levels of Professional Football Players and Amateur Football Players Trained in Health Sciences". Their studies have assessed the nutritional knowledge of adult football players to understand its impact on dietary habits and performance. A study involving 60 male football players aged 16–33 from three Liga4Arad teams utilized a mixed-methods approach, combining a self-developed pilot questionnaire with validated instruments to evaluate nutritional knowledge, dietary habits, substance use, and physical health parameters. The findings indicated significant gaps in nutritional knowledge, with only 35.4% of amateur and 47.6% of professional players considering themselves adequately informed about sports nutrition. Misconceptions were prevalent, particularly regarding protein intake and carbohydrate loading. Similarly, an alarming lack of nutrition knowledge was observed among professional players in Benghazi, highlighting the necessity for targeted nutrition education programs. These programs should aim to enhance players' understanding of nutrition to positively influence dietary habits and, ultimately, improve physical performance.

A study by (Mohakuda, 2020) and (Smith *et al.,* 2022) in Brazil investigated *“The dietary habits and nutritional knowledge of professional football players”* focusing on their impact on performance and recovery. This cross-sectional study employed a validated dietary questionnaire, a nutritional knowledge assessment tool, and a quantitative descriptive approach. A total of 120 male professional football players were recruited from clubs participating in Brazil's top-tier football league. The findings revealed that while players consumed adequate macronutrients, they often failed to meet their micronutrient requirements, particularly for essential vitamins and minerals. The study highlighted a moderate level of knowledge regarding dietary requirements specific to football performance. Players predominantly relied on protein- and carbohydrate-rich diets, underestimating the importance of hydration and micronutrient diversity. Based on their results, the authors recommended integrating nutrition education into training programs and providing access to professional dietitians to address specific nutritional deficiencies. These measures were suggested to optimize players' recovery, reduce injury risks, and enhance overall performance.

A study conducted in India titled "*Assessment of Nutritional Status, Nutritional Knowledge, and Impact of Nutrition Education among Selected Sports Persons of Coimbatore District"* explored

the nutritional status and knowledge of athletes in Coimbatore, Tamil Nadu (Mahalakshmi Sangeetha, Ramaswamy, *et al*. 2012). The findings revealed that 55% of the selected sportspersons were underweight based on anthropometric measurements, while approximately 60% were anemic, as indicated by their hemoglobin levels. Additionally, the study highlighted dietary inadequacies in both macro- and micronutrients among the athletes. The researchers also assessed the nutritional knowledge of the participants and found it to be low. However, a nutrition education intervention led to a significant improvement in the mean awareness score, increasing from 7.75±3.52 to 15.35±4.43. This improvement underscores the positive impact of tailored education programs on enhancing the athletes' awareness of proper nutrition. The study concluded that the poor nutritional status and knowledge of sportspersons in Coimbatore could be attributed to a lack of awareness. It recommended sustained efforts in nutrition education to address these inadequacies, emphasizing that such interventions could lead to long-term improvements in their nutritional health and sports performance.

A cross-sectional study conducted by (Denna, Elmabsout, *et al.*, 2018) in Benghazi, Libya, entitled *"Evaluation of Nutrition Knowledge of Professional Football Players"* evaluated the nutrition knowledge of professional football players. The study reported a mean body mass index (BMI) of 24 ± 2 kg/m² among participants. It revealed that 57% of the players had formal education below the university level, and 75% stated they had never received formal education related to nutrition. Additionally, 70% of the players were unfamiliar with the concept of the food pyramid, and only 18% communicated with dieticians during or outside the playing season. The findings further showed that only 22% of the players correctly answered questions about appropriate foods to consume before and after exercise. Alarmingly, 81% of the participants failed to identify the correct nutrient content to be consumed during exercise. These results emphasized a significant deficiency in nutrition knowledge among professional football players in Benghazi. The authors emphasized the urgent need to establish tailored nutrition education programs to improve players' dietary knowledge and eating habits. Such initiatives, combined with the integration of qualified dieticians in football clubs, could enhance players' physical performance and overall health.

A study conducted in Spain by (Jegatheesan, Kumbamoorthy, *et al.* 2024) entitled "*The Role of Nutritional Knowledge in Injury Prevention Among Elite Football Players"* they were examined the link between nutritional knowledge and injury rates among elite football players. The objective

was to determine how awareness of proper dietary practices influenced injury prevention and recovery. The researchers employed a longitudinal observational study design over one competitive season. Data were collected from 100 elite football players representing five professional teams. Injury rates were recorded throughout the season and periodically compared with players' nutritional knowledge assessments. The study revealed that players with higher levels of nutritional knowledge experienced 30% fewer soft tissue injuries compared to their less-informed counterparts. Awareness of anti-inflammatory diets, such as the inclusion of foods rich in omega-3 fatty acids and antioxidants, was identified as a significant factor in reducing injury rates. Furthermore, teams that implemented structured nutritional programs demonstrated fewer injuries and faster recovery times than teams without such programs. The findings underscore the importance of integrating nutritional education into injury prevention strategies and conclude that enhancing players' understanding of nutrition is essential for reducing injury-related downtime and ensuring optimal player availability.

A study conducted by (Maughan, R. J., Ateş, *et., al* 2024) in Spain examined the "*Effect of Nutritional Knowledge on Match Performance in Semi-professional Football Players"* The research aimed to explore the relationship between players' understanding of nutrition and their on-field performance. Using a mixed-methods approach, the study combined a nutritional knowledge test, analysis of dietary logs, and performance metrics during games. The study involved 60 male semi-professional football players from four clubs in the Spanish Segunda Federación league. A comparative design was used, assessing match performance metrics before and after nutritional counseling interventions. The findings revealed that players with higher nutritional knowledge consumed more balanced diets and demonstrated better match performance, particularly in terms of stamina and recovery. Statistical analysis indicated significant improvements in key performance metrics, including increased running distance and reduced recovery times post-intervention ($p < 0.05$). The authors concluded that semi-professional clubs should prioritize individualized nutritional counseling and meal planning to optimize player performance. The study underscores the importance of integrating tailored nutritional strategies into football training programs to enhance both physical and cognitive aspects of performance.

2.5. Nutritional Timing of Football Club Players

A study conducted in Spain by (Smith, J., Książek, *et., al* 2020) entitled *"Impact of Nutritional Timing on Performance and Recovery in Elite Football Players"* The research employed a mixed-method approach, combining pre- and post-performance testing with dietary intake analysis over 12 weeks. Using a randomized controlled trial (RCT) design, 40 elite male football players, aged 20–30, from two professional football clubs, were divided into two groups: intervention (optimized nutritional timing) and control (regular dietary patterns). The findings revealed that players following optimized nutritional timing strategies achieved a 12% improvement in sprint performance and experienced a 15% reduction in perceived fatigue levels post-training. The study highlighted the significance of pre-game carbohydrate intake and post-game protein consumption in enhancing recovery markers, such as muscle glycogen resynthesis and reduced delayed onset muscle soreness (DOMS). They concluded that football clubs should implement individualized nutritional timing plans, emphasizing macronutrient intake before and after matches to optimize athletic performance and recovery.

A study conducted in Brazil by (Santos, Silveira, *et al.* 2016) entitled *"Nutritional intake and overall diet quality of female soccer players before the competition period"* The study revealed that while the players had a proper nutritional status, their diets were deficient in energy due to inadequate carbohydrate intake. Conversely, their intakes of protein, fatty acids, and sodium exceeded the recommended levels for athletes. The overall diet quality, assessed using the Healthy Eating Index (2010), averaged 54.6 points out of a maximum of 100, indicating significant room for improvement. The research employed a descriptive and cross-sectional design, focusing on the athletes' nutritional status and dietary adequacy during the training period leading up to the competition season. The findings highlighted that the football players' dietary patterns were quantitatively and qualitatively inappropriate. The authors recommended nutritional interventions to enhance the diet by incorporating a variety of nutrient-rich foods, including whole grains, fruits, vegetables, and dairy products. They also emphasized the need to improve protein quality while reducing saturated fats, sodium, and added sugars in the diet.

Pueyo, M., Llodio, I., *et., al* (2024) conducted a study entitled "Influence of Carbohydrate Intake on Different Parameters of Soccer Players' Performance: Systematic Review. Their research has

examined the impact of nutritional timing on the performance and recovery of adult football players. A systematic review analyzed the influence of carbohydrate intake before and during matches on various performance metrics, including speed, sprint count, shooting accuracy, fatigue resistance, cognitive function, and gastrointestinal comfort. The study found that appropriate carbohydrate consumption in these periods positively affected these parameters, enhancing overall performance. Additionally, a study on elite male Australian football players investigated nutrient intake, meal timing, and sleep patterns, highlighting the importance of aligning meal schedules with training and match demands to optimize performance and recovery. The International Society of Sports Nutrition's position on nutrient timing emphasizes that strategic planning of nutrient intake around exercise sessions can enhance recovery, muscle protein synthesis, and overall performance. These findings underscore the need for individualized nutrition strategies that consider the timing of nutrient intake to maximize performance outcomes in football players.

A study conducted by (Wouldiams, Serratosa, *et al.* 2016) in the United Kingdom entitled "*Optimizing Nutritional Timing to Enhance Match Day Performance in Professional Football Clubs*" The study aimed to analyze how pre-match and half-time carbohydrate ingestion impacts sustained match-day performance. An observational study employing match analysis, dietary tracking, and player feedback over an entire season was employed. A longitudinal study with repeated measures across multiple matches was used. 50 professional football players from three top-tier clubs, aged 21–32 were selected. The findings of their study were players consuming carbohydrate-rich snacks during half-time sustained higher sprint speeds and maintained cognitive focus in the last 30 minutes of matches compared to those who did not. They found that; half-time carbohydrate ingestion was linked to 10% better performance in sprint tests and a 5% reduction in decision-making errors during matches. They suggested that; football teams should incorporate tailored half-time nutritional plans, emphasizing easily digestible carbohydrates to maintain energy levels and cognitive focus throughout matches.

A study conducted in Brazil, by (Raizel, Godois, *et al.* 2017) entitled *"Pre-season dietary intake of professional soccer players"* concluded that the dietary intake of professional soccer players was adequate in energy but inadequate in macro and micronutrients. The pre-season dietary intake of 19 male footballers was assessed using a semi-structured 3-day food record. For this study, energy and macronutrient intake were compared with the Brazilian dietary reference values for

footballers, while micronutrients were compared with the Estimated Average Requirement-minimum recommendation and Tolerable Upper Intake Level-upper recommendation. They suggested that there was a need to improve nutritional practices to sustain the physical demands of soccer during pre-season.

A study conducted in Australia by **(**Caruana Bonnici, Greig, *et al.* 2019) titled "*Pre-Game and Post-Game Nutritional Strategies in Semi-Professional Football Players"* The research utilized a cross-sectional study design during a football season, combining dietary records, blood lactate analysis, and performance tests. A total of 25 semi-professional football players aged 22–29 from a regional league participated in the study. The findings indicated that players who consumed high-carbohydrate meals 2–3 hours before matches exhibited higher energy levels throughout the game, particularly sustaining energy in the second half of matches. Furthermore, post-game protein-rich meals contributed to faster muscle repair and recovery. The study established a direct correlation between pre-game carbohydrate intake and sustained energy levels, as well as between post-game protein intake and enhanced muscle recovery. They recommended that athletes prioritize pre-match meals rich in complex carbohydrates and post-match meals containing high-quality proteins to optimize both endurance and recovery. These findings align with broader nutritional principles in sports performance, emphasizing the importance of tailored nutritional strategies to support athletic demands.

A study conducted in Germany by (Martinho, Naughton, *et., al* 2023) titled *"Nutritional Timing and Muscle Recovery in Female Football Players"* aimed to evaluate the impact of targeted nutritional interventions on muscle recovery in adult female football players. The researchers employed a quasi-experimental design with baseline and post-intervention comparisons. The study involved 30 adult female players from national league clubs, aged 18–28, who underwent dietary interventions assessed through muscle strength tests and subjective recovery questionnaires. The findings revealed that strategic timing of protein ingestion within 30 minutes post-exercise resulted in a 20% improvement in muscle strength retention and a 30% decrease in muscle soreness. Furthermore, nutritional timing was identified as a critical factor in accelerating muscle repair and reducing inflammation, particularly when paired with moderate carbohydrate intake post-game. The study concluded that female football players should adopt immediate post-training nutritional strategies, emphasizing protein and moderate carbohydrate intake, to enhance recovery outcomes.

2.6. Conceptual Framework

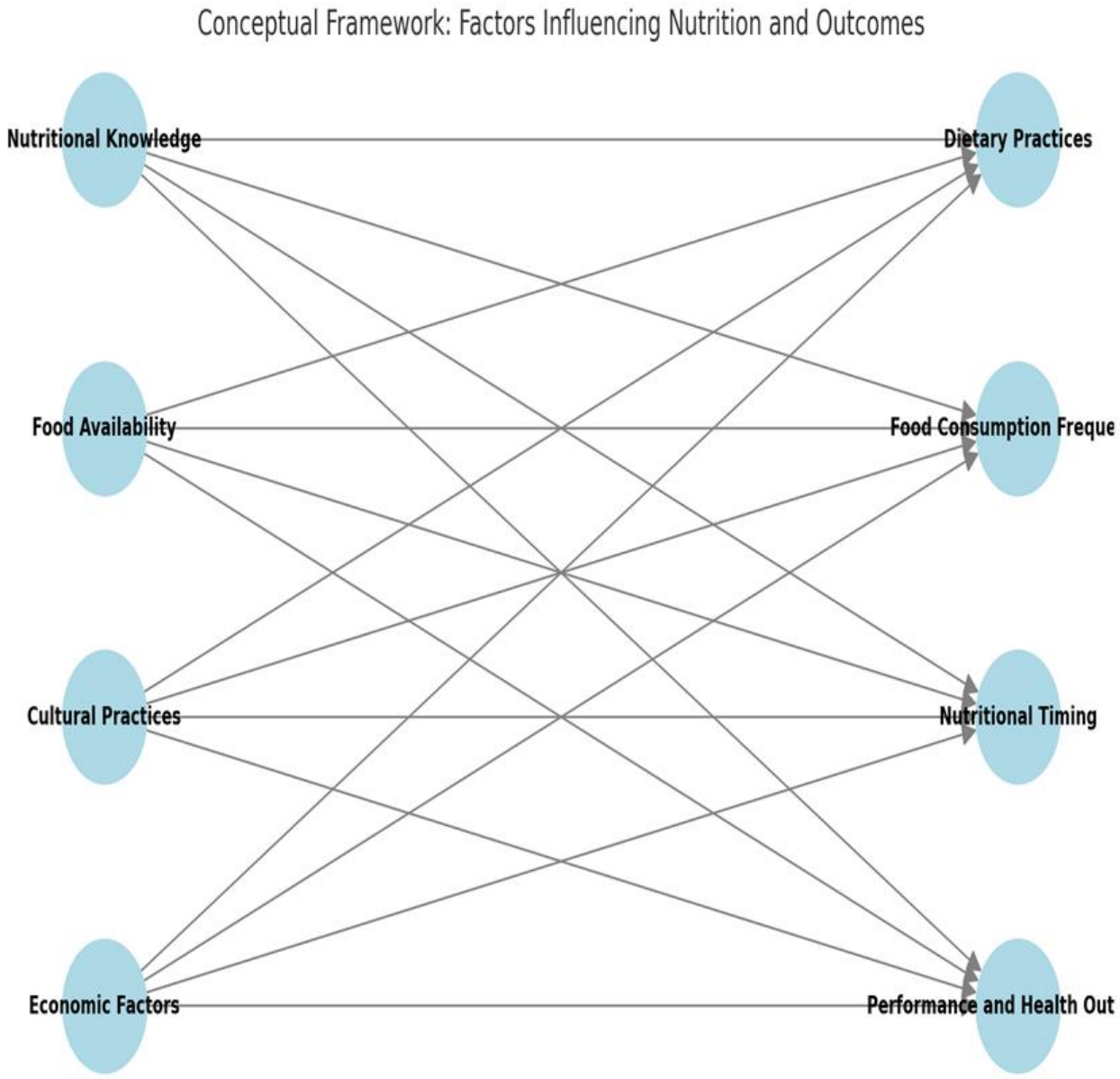

Figure 1:Conceptual Framework: Here is the conceptual framework diagram for this research. The independent variables (factors influencing nutrition) are on the left, and the dependent variables (outcomes) are on the right. The arrows illustrate the influence of each independent variable on the outcomes.

3. MATERIALS AND METHODS

3.1 Description of the Study Area

The current study was conducted on adult football players of the Dire Dawa City Football Club, located in the Dire Dawa City Administration, Ethiopia. Dire Dawa is situated approximately 515 km east of Addis Ababa, the capital city of Ethiopia. Geographically, the city lies between 9°20′0″ and 9°50′0″N latitude and 41°50′0″ and 42°20′0″E longitude. Dire Dawa is one of Ethiopia's largest urban centers, ranking second in size after Addis Ababa, with an estimated population of 384,000 (Teshome and Belete, 2017). Due to its eastern lowland location, the city experiences a hot and arid climate, with an average annual temperature of 25°C. This climatic condition, along with the city's geographical features, plays a significant role in shaping the physical performance and endurance of athletes training in the region.

3.2. Study Design

To complete this study the researcher used a cross-sectional research design.

3.3. Population of the Study

The study population consisted of football club players within Dire Dawa City Administration, Ethiopia. The total population for the study encompassed 14 football clubs. The specific study population included 368 football club players from the Dire Dawa City Administration who were available during the data collection period.

3.4. Sampling Size and Sampling Technique

The sample size for this study was determined based on a 95% confidence interval and a 5% margin of error. To account for potential non-responses or incomplete questionnaires, an additional 10-15% was included beyond the computed size. The standard formula for cross-sectional studies was applied:

$n = Z^2 \times p \times (1 - p) / d^2$

Where:

- $Z = 1.96$ (for 95% confidence)
- $p = 0.5$ (assumed for maximum variability)
- $d = 0.05$ (margin of error)

Substituting the values: $n = (1.96)\ 2 \times 0.5 \times (1\text{-}0.5) / (0.05)^2 = 384.16$

Since the total population of football club players in Dire Dawa was limited, a finite population correction was applied:

$nadj = n / (1 + (n - 1) / N)$, where $N = 200$

nadj = 384.16 / (1 + 384.16 / 200) ≈ 131.53

Rounding up, the final sample size was set at 137 participants to ensure statistical representativeness. The study targeted football players from 14 clubs under the Dire Dawa City Administration Football Clubs (DDCAFBCs), with a total population of 368 players. A proportionate sampling method was used to ensure representativeness and manageability.

Sampling Technique: A purposive sampling technique was initially used to target the Dire Dawa City Administration. Subsequently, simple random sampling (lottery method) was employed to select 8 out of 14 clubs, ensuring equal selection probability. Within the selected clubs, systematic random sampling was used to select participants by arranging players in a predefined order and selecting every third player (sampling interval = 368 / 137 ≈ 3). Proportional allocation ensured that each club contributed a sample size reflective of its total population:

GLFBC: 20 players, LHFBC: 18 players, DDKU20FBC: 17 players, DDKFFBC: 18 players, ABBOFBC: 15 players, WFBC: 15 players, SNFBC: 18 players, MFBC: 16 players.

This approach ensured randomness, statistical validity, and accurate representation of the football players in the study (Kasiulevičius et al., 2016).

GLFBC: Ganda Lencha Football Club

LHFBC: Laga Hare Football Club

DDKU20FBC: Dira Dawa KenemaUnder20 Football Club

DDKFFBC: Dire Dawa Kenema Female Football Club

ABBOFBC: Abdi Bori Football Club

WFBC: Walia Football Club

SNFBC: Sabian Hibret Football Club

MFBC: Meskelenya Football Club

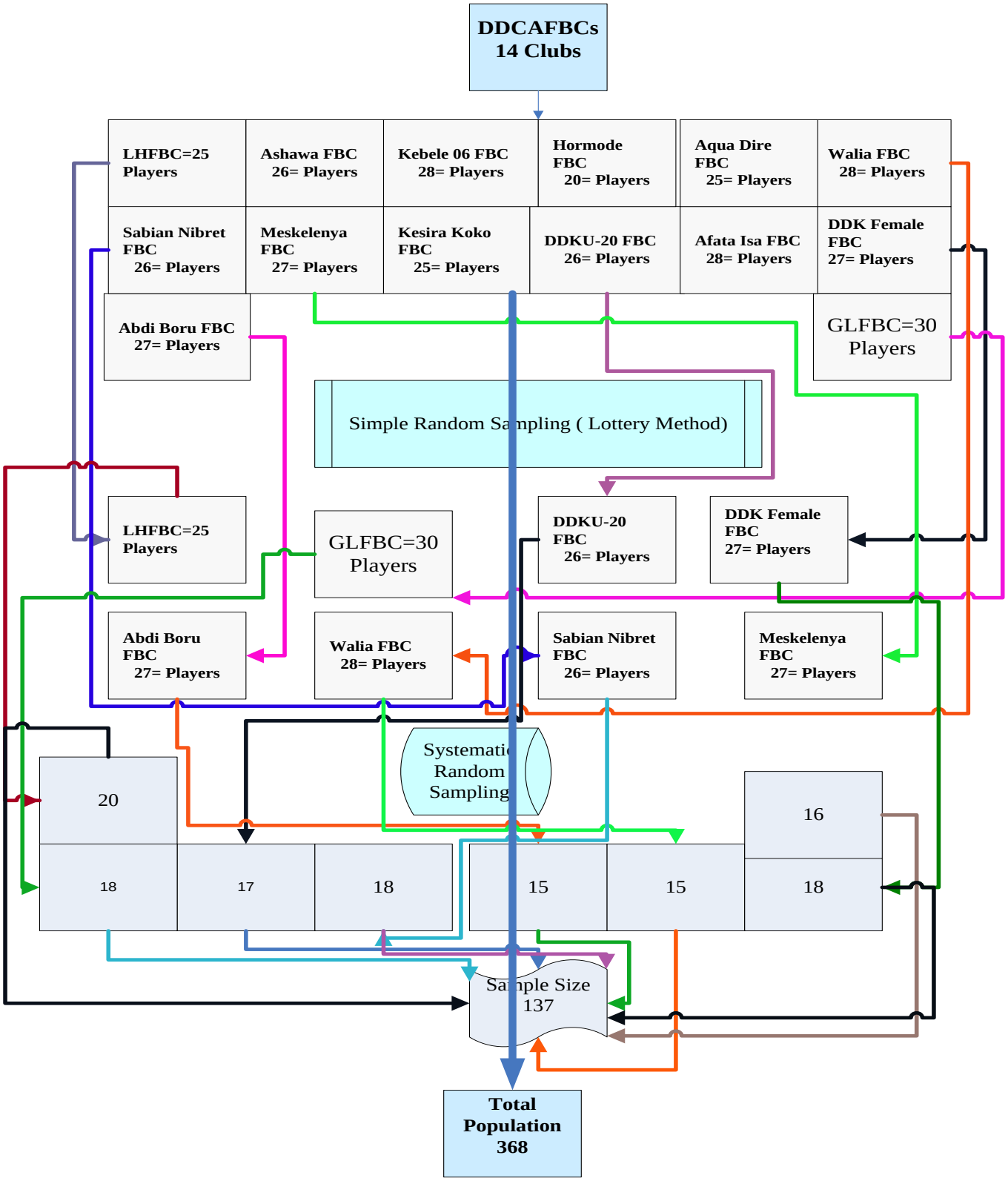

Figure 2: Flow charts of DDCAFBCP showing the sampling procedure used to select representative adult football players.

3.5 Sources of the Data

In this study, primary data sources were used. The primary data would be collected from respondents of football club players, based on the designed instruments, because it is believed that they can provide firsthand information.

3.6. Data Collection Tools

Data for this cross-sectional survey study on sports nutrition was collected using a structured, paper-based questionnaire designed to gather comprehensive and relevant information on participants' demographics, dietary practices, food consumption frequency, nutritional knowledge, and nutritional timing. The questionnaire was developed based on a thorough review of existing literature and consultation with subject matter experts in sports nutrition. The questionnaire was first translated into Afan Oromo and Amharic by professional translators to ensure linguistic accuracy and cultural relevance. It incorporated a 53-item Likert scale, originally developed by Likert, R. (1932), along with other closed-ended and scaled questions to ensure consistency in responses and facilitate statistical analysis. Questions were organized into sections covering demographic information, dietary practices, nutritional timing, and awareness of sports nutrition. Participants were informed about the study's objectives, assured of confidentiality, and provided informed consent before completing the questionnaire. Responses were collected within a defined period, manually entered into the SPSS database, and processed for analysis.

3.8. Process of Data Collection

A well-structured questionnaire, based on the Likert scale developed by Likert, R. (1932), was designed before data collection. The study received approval from the College of Health and Medical Sciences at Haramaya University, through its Chief Academic and Research Director, and an official letter was sent to the Dire Dawa Youth and Sport Commission for support. Data collectors were instructed to invite participants voluntarily, obtain informed consent, and sign the consent form after reading it. The questionnaire was pretested on a small sample for clarity, cultural appropriateness, reliability, and ease of understanding. Appointments were scheduled at participants' preferred times and locations. Data collection took one month, adhering to ethical guidelines and under close supervision. The questionnaires were administered in person to provide clarifications if needed.

3.9. Dependent and Independent Variables

Independent Variables

- Nutritional Knowledge: Awareness of dietary requirements, sources of nutrients, and timing.
- Food Availability: Accessibility to quality and variety of foods in the local context.

Dependent Variables

- Dietary Practices: Daily food choices, meal composition, and adherence to nutrition guidelines.
- Food Consumption Frequency: Regularity of meals and snacks.
- Nutritional Timing: appropriateness of meal timing relative to training and matches.

3.10. Method of Data Analysis

All analyses were conducted using SPSS (version 26), which enabled systematic organization and detailed descriptive output for interpretation. Descriptive statistical methods were employed to summarize the data. Frequencies and percentages were calculated for categorical variables, providing an overview of respondent demographics and key survey items. For continuous variables, measures such as the mean were computed to determine central tendencies. Lastly, the data presented in tables, showing how often things happened, and what percentage of people did certain things, and explained it all in narratives.

3.11. Data Quality Control

To gather information on dietary practices, food consumption frequency, nutritional knowledge, and nutritional timing among football players, the questionnaire was first translated into Afan Oromo and Amharic by professional translators to ensure linguistic accuracy and cultural relevance. Then, data collectors, coordinators, and supervisors participated in a two-day training session. The training covered the objectives and significance of the study, techniques for accurately collecting data, and procedures for administering the questionnaire. To validate the tool, a pilot test involving 5% of the total sample size was conducted with the Harar City Football Club which was the potulation of 30 players by selecting 15 players, which was not included in the main study. The pilot test was reviewed by the principal supervisors, and any identified issues were addressed to enhance the effectiveness of the instruments. Feedback from the pilot study was used to refine question-wording, sequence, and response options. To ensure data completeness, a double-entry system was employed, with two individuals independently entering the data. The entries were cross-checked to identify and resolve any discrepancies.

3.12. Ethical Considerations

The current study was approved by the Institutional Health Research Ethical Review Committee (IHRERC) at Haramaya University's College of Health and Medical Sciences. Every participant provided a written and signed statement showing they understood and agreed to take part voluntarily. The College of Health and Medical Sciences at Haramaya University, through its Chief Academic and Research Director, sent an official letter to the Dire Dawa Youth and Sport Commission to support the study. The data collectors were instructed to invite participants to join the study voluntarily. After reading the consent form, the data collectors also signed it. To protect confidentiality, the participants' names and personal details were not included. The study respected the values and professional standards of the research team.

4. RESULTS AND DISCUSSIONS

This chapter presents and discusses the research results in detail to address the research objectives. This study aimed to assess the dietary practice, food consumption frequency, nutritional knowledge, and nutritional timing of football club players. The collected data were analyzed by using the Statistical Package for Social Science (SPSS) version (26). The results for each variable are shown in the table below.

4.1. Socio-Demographic Characteristics of the Respondents

Variables		Frequency	Percent
Age category	18-22	53	38.7
	23-27	31	22.6
	28-32	19	13.9
	33-37	15	10.9
	Above 38	19	13.9
	Total	137	100.0
Gender	Male	119	86.9
	Female	18	13.1
	Total	137	100.0
Frequency of training	2-3 in a week	49	35.8
	3-4 in a week	47	34.3
	4-7 in a week	41	29.9
	Total	137	100.0
Frequency of competition	2-3 in a week	47	34.3
	1-2 in a month	26	19.0
	3-4 in a month	64	46.7
	Total	137	100.0
Education level	No formal education	13	9.5
	Primary education	18	13.1
	Secondary education	63	46.0
	Diploma/degree and above	43	31.4
	Total	137	100.0
Experience in the club	1-3 years	30	21.9
	4-6 years	31	22.6
	7-10 years	44	32.1
	11 and above	32	23.4
	Total	137	100.0

Table 1:Demographic information of study participants

This study involved 137 participants with diverse characteristics in terms of age, gender, training frequency, education level, competition frequency, and club experience. The largest proportion of study subjects (38.7%, 53 persons), belong to the 18-22 age range, followed by the 23-27 age bracket (31.6%, 31 participants). Those aged 28-32 (19 participants, 13.9%), 33-37 (15

participants, 10.9%), and individuals over the age of 38 (19 participants, 13.9%) (Table 1). Regarding gender, most of the participants were men (119 participants were male, corresponding to 86.9%), with a few women (18 participants were women, corresponding to 13.1%). (Table 1).

Information on training routines and the frequency of training usually performed is presented in Table 1. The number of football training sessions of players during a week was different among the study participants. The majority of them (35.8%) reported training 2-3 times a week while, 34.3% of the participants trained 3-4 times a week. Fewer players (around 30%) trained 4-7 times a week. In total, most players in this group trained 2-4 times a week. Most of the players participated in 3-4 games per month (46.7%, 64 participants). Additionally, 34.3% (47 participants) took part in 2-3 games a week. Conversely, 19.0% (26 participants) played 1-2 games per month. (Table 1).

The findings showed that football players had different levels of education. Of the football players, 9.5% of the respondents, representing 13 participants, had no formal education; 13.1%, 18 participants attended primary education; 46.0%, representing 63 participants, had secondary education; while 31.4%, representing 43 participants, had a diploma and above. The result showed that almost half (46.0%) of the players had reached a secondary level of education. (table 1). The footballers' experience in the club was divided into four groups: 1-3 years (21.9%, n = 30); 4-6 years (22.6%, n = 31); 7-10 years (32.1%, n = 44); and 11 years and more (23.4%, n = 32). Table 1.

4.2. Dietary Practices of Football Players

No.	Items	Never (%)	Rarely (%)	Sometimes (%)	Often (%)	Always (%)
1.	Consuming balanced diet	13(9.6)	24(17.5)	35(25.5)	40(29.2)	25(18.2)
2.	Eating snacks per day	15(10.9)	29(21.2)	28(20.4)	34(24.8)	31(22.6)
3.	Skipping meals due to busy schedules or travel	31(22.6)	27(19.7)	33(24.1)	23(16.8)	23(16.8)
4.	Eating eggs	16(11.7)	21(15.3)	42(30.7)	34(24.8)	24(17.5)
5.	Drinking water above 2 litre/day	15(10.9)	16(11.7)	17(12.4)	28(20.4)	61(44.5)
6.	Eating meals outside of the home	14(10.3)	34(24.8)	38(27.7)	25(18.2)	26(19.0)
7.	Eating breakfast, lunch, and dinner timely	15(10.9)	23(16.8)	34(24.8)	33(24.1)	32(23.4)
8.	Eating pasta salad or macaroni salad before/after the match	13(9.5)	28(20.4)	43(31.4)	26(19.0)	27(19.7)
9.	Eating groundnut after match	20(14.6)	30(21.9)	31(22.6)	29(21.2)	27(19.7)

Table 2: dietary practices of football players

The eating behavior of football players was analyzed based on the most frequent habits reported by respondents. The analysis indicates that 90.4% of the players eat a balanced diet, and only 9.6% of the players never eat this type of food frequently. A substantial proportion of the players (89.1%) often eat snacks, while a few players (10.9%) never ate this type of food. Whereas 22.6% never skipped meals, 24.1% sometimes did, in most instances due to not having time. The highest proportion of players, 88.3, took eggs. Only a few players, 11.7%, never took eggs. These data indicated that each of these options was different for the players. Hydration was paramount, as indicated by 93% of the players who always drank water. Only a few players, 10.9%, ever drank water to keep themselves hydrated. Most players, 89.7%, took a meal outside the home. Some players never took out-of-home meals (10.3%). A large number of players (89.1%) consumed breakfast, lunch, and dinner on time. These players never ate on time 10.9%. Consumed groundnuts: The majority of the players were taking groundnuts, i.e., 85.4%. 14.6% of the participants never ate groundnuts (Table 4).

4.3 Food Consumption Frequency of Football Players

No.	Items	Never (%)	1-3 times a month (%)	Once a week (%)	2-4 times a week (%)	Once a day (%)	2-4 times a day (%)
1.	Fruit	11(8.0)	17(12.4)	24(17.5)	25(18.3)	41(29.9)	19(13.9)
2.	Popular Dishes	9(6.6)	26(19.0)	32(23.4)	21(15.3)	35(25.5)	14(10.2)
3.	Beverages	31(22.6)	13(9.5)	24(17.5)	20(14.6)	33(24.1)	16(11.7)
4.	Sweets	10(7.3)	23(16.8)	29(21.2)	33(24.1)	27(19.7)	15(10.9)
5.	Dairy Products	13(9.5)	16(11.7)	27(19.7)	27(19.7)	36(26.3)	18(13.1)
6.	Eggs	12(8.8)	19(13.9)	36(26.3)	27(19.7)	24(17.5)	19(13.9)
7.	Soft Drinks	10(7.3)	17(12.4)	28(20.4)	34(24.8)	30(21.9)	18(13.1)
8.	Vegetables	10(7.3)	9(6.6)	22(16.1)	24(17.5)	43(31.4)	29(21.2)
9.	Starchy foods	9(6.6)	11(8.0)	19(13.9)	24(17.5)	46(33.6)	28(20.4)
10.	Ethiopian desserts food	10(7.3)	19(13.9)	27(19.7)	31(22.6)	30(21.9)	20(14.6)
11.	Meat	10(7.3)	20(14.6)	38(27.7)	21(15.3)	27(19.7)	21(15.3)
12.	Fruit Juices	8(5.8)	23(16.8)	27(19.7)	28(20.4)	23(16.8)	28(20.4)
13.	Fluids	10(7.3)	17(12.4)	26(19.0)	20(14.6)	29(21.2)	35(25.5)
14.	Healthy Fats food	8(5.8)	24(17.5)	26(19.0)	29(21.2)	30(21.9)	20(14.6)
15	Basic Pantry food	22(16.1)	20(14.6)	33(24.1)	21(15.3)	21(15.3)	20(14.6)

Table 3: Food consumption frequency of football players

The study investigated the frequency with which football players consumed various foods. Examples of food categories include fruits, popular dishes, drinks, sweets, dairy products, eggs, soft drinks, vegetables, starchy foods, Ethiopian dessert food, meats, fruit juices, fluids, healthy fats, and basic pantry food.

Most players consumed fruit once a day (29.9%), followed by 18.3% who ate it 2-4 times a week, and another 17.5% consumed it once a week. Players who never consumed fruit were 8.0%. Regarding dairy product consumption, most of the players ate once a day (26.3%), while some players ate 2-4 times a week (19.7%). A few participants never ate dairy products (9.5%). Also, most players eat eggs once a week (26.3%) while 17.5% eat every day. Only 8.8% said never eat eggs. On soft drinks, 21.9% of players drink every day, and 24.8%) drink 2-4 times a week. Only 7.3% said they never drank soft drinks. For vegetables, 31.4% of the players ate once a day and only 7.3% said they never ate vegetables. The percentage of players who ate starchy foods once a day was 33.6%, while 6.6% never ate at all. 22.6% of the participants consumed Ethiopian dessert foods 2-4 times a week, while 19.7% of the participants ate once a week. Few players, 7.3%, reported never consuming it. The frequency of eating meat was once a week for the majority of the participants, 27.7% and 19.7% eat once a day. Few players, 7.3%, reported never eating meat.

Regarding fruit juices, most players drank once a week or 2-4 times a week, both with 19.7%. Also, 5.8% never drank fruit juices. For fluids, the most common answer was drinking 2-4 times a day, corresponding to 25.5%, while 7.3% never drank fluids. Concerning healthy fats, once a week was the higher frequency, with 19.0%, while 5.8% never ate it. Most players (24.1%) ate basic pantry foods once a week, 14.6%) of players ate 1-3 times a month, and a significant number (16.1%) said they never ate. Overall, they seemed to eat fruits, vegetables, and common dishes often, but their intake of other foods varied. Results indicated that there is room for improvement in the current diet, especially for drinks and sweets, and that both basic and rich foods are relied on for nutrition by the players, as shown in Table 3.

4.4 Nutritional Knowledge of Football Players

No.	Items	SA (%)	A (%)	UN (%)	D (%)	SD (%)	Mean	Knowledge
1.	In the absence of CHO, fats, and proteins are used for energy?	26(19.0)	46(33.6)	33(24.1)	19(13.8)	13(9.5)	3.39	Poor
2.	Footballers more consume protein than non-footballers.	29(21.2)	44(32.1)	22(16.1)	20(14.5)	22(16.1)	3.28	Poor
3.	CHO is the primary source of energy for footballers.	39(28.5)	38(27.7)	23(16.8)	25(18.2)	12(8.8)	3.49	Medium
4.	Protein is important for muscle growth and repair.	38(27.7)	36(26.4)	28(20.4)	24(17.5)	11(8.0)	3.48	Medium
5.	Honey is a high source of energy for football players.	40(29.2)	40(29.2)	25(18.2)	19(13.9)	13(9.5)	3.55	Good

6.	A balanced diet is essential for sportsmen.	48(35.0)	38(27.7)	22(16.1)	22(16.1)	7(5.1)	3.72	Good
7.	Eating foods that are high in fluids and carbohydrates is recommended for footballers.	42(30.7)	39(28.5)	21(15.3)	21(15.3)	14(10.2)	3.54	Good
8.	Eating high-fat foods in an everyday diet increases the risk of cardiovascular.	31(22.6)	44(32.1)	25(18.2)	19(13.9)	18(13.1)	3.37	Poor
9.	I avoid eating too much fat and sugar in my diet.	37(27.0)	38(27.7)	23(16.8)	23(16.8)	16(11.7)	3.42	Medium
10.	The importance of hydration during exercise and competition is high.	42(30.7)	42(30.7)	22(16.1)	19(13.7)	12(8.8)	3.61	Good
11.	Football players can enhance their sports performance through good nutrition practices.	37(27.0)	39(28.6)	21(15.3)	25(18.2)	15(10.9)	3.42	Medium
12.	I eat various fruits and vegetables as part of my daily meals.	35(26)	45(32.5)	27(19.7)	15(10.9)	15(10.9)	3.51	Good
13.	Fat is an essential component of a healthy diet for footballers	33(24.1)	34(24.8)	24(17.5)	29(21.2)	17(12.4)	3.27	Poor
14.	Sports drinks can be beneficial for rehydrating during and after exercise	38(27.7)	38(27.7)	24(17.5)	19(13.9)	18(13.1)	3.43	Medium
Grand mean score							**3.46**	

Table 4: Nutritional Knowledge of football players

Note: SA=Strongly Agree, A=Agree, UN=Uncertainty, D=Disagree, SD=Strongly Disagree

The researcher has categorized the nutritional knowledge into low, medium, and high based on the mean score of football players in the current study. The mean score of all 14 items put together is 3.46. We have divided the players into three groups based on this average: players who scored below 3.4 were regarded as having poor knowledge, those who scored between 3.4 and 3.5 had medium knowledge, and those who scored above 3.5 had good knowledge. We then used frequency, percentage, and mean to present the results of the analyzed data. Nutritional knowledge among football players was assessed based on the players' dietary views. It was established that over half of them, 52.6%, knew that fats and proteins can provide energy when carbohydrates are not available. While a significant number were either unsure, 24.1%, or disagreed, 23.3%. Table 1.

The majority of players (53.3%) knew that football players eat more protein than others, but 46.7% were not sure or disagreed. On the main energy source, most players (56.2%) knew that

carbohydrates are the main energy source, but 43.8% were unsure or disagreed. The majority of players (54.1%) agreed that protein helps build muscles, but 45.9% were neutral or disagreed. Regarding honey as a source of energy, 58.4% of the players felt that honey contains a lot of energy, while 41.6% were undecided or disagreed. A higher percentage of players, 62.7%, believed that footballers required a balanced diet, while 37.3% expressed uncertainty or disagreed with this idea. A total of 59.2% replied that it is good to drink fluids and also eat carbs, while 40.8% did not know or disagreed. Most had other views about high-fat food, with 54.8% agreeing and 45.2% unsure or disagreeing. A greater number of the players recognized how important it is to stay hydrated during exercise; 61.4%, as opposed to 38.6% who were unsure or disagreed. More athletes, 55.6%, believed that good nutrition improves performance, while 44.4% were undecided or disagreed. More players, 58.5%, consumed many fruits and vegetables, and 41.5% gave a weak opinion. Almost half of the players, 48.9%, believed fat is necessary for a footballer, and 51.1% of respondents were not sure or disagreed. Lastly, 55.4% thought that sports drinks are good for rehydration, and a few participants (44.5) were disagreed or unsure. (Table 1) Further analysis revealed that further improvement was warranted, especially in developing an increased understanding of some of the identified key nutritional knowledge issues. While many players demonstrated a rather good level of understanding in nutrition about their sport, continuous education and practical use of such knowledge were very important for maximal performance and health. Overall, footballers had good nutritional knowledge, with a high percentage understanding of carbohydrates, protein, and hydration. Nevertheless, the majority of footballers needed more education on dietary fats and how to keep a balance in their diets.

4.5 Nutritional Timing of Football Players

No.	Items	SA (%)	A (%)	UN (%)	D (%)	SD (%)
1.	Drinking water during training and competition.	47(34.3)	34(24.8)	23(16.8)	17(12.4)	16(11.7)
2.	Daily Nutritional Needs	31(22.6)	36(26.3)	33(24.1)	22(16.1)	15(10.9)
3.	Consuming foods high in carbohydrates before competition.	36(26.3)	41(29.9)	24(17.5)	25(18.2)	11(8.0)
4.	Consuming foods high in fluids and carbohydrates during competition.	39(28.5)	34(24.8)	29(21.2)	20(14.6)	15(10.9)
5.	Consuming foods high in macronutrients after competition.	31(22.6)	39(28.5)	24(17.5)	24(17.5)	19(13.9)
6.	Eating a meal before exercise provides energy and supports performance.	28(20.4)	39(28.5)	24(17.5)	33(24.1)	13(9.5)
7.	Eating a post-exercise meal to aid in recovery and muscle repair.	44(32.1)	38(27.7)	23(16.8)	14(10.2)	18(13.1)

8.	Snacking regularly throughout the day to maintain energy levels.	25(18.2)	31(22.6)	35(25.5)	33(24.1)	13(9.5)
9.	Eating 3 main meals a day is sufficient for optimal performance during football matches.	34(24.8)	32(23.4)	26(19.0)	26(19.0)	19(13.9)
10.	Eating a meal or snack after a football match aids recovery.	31(22.6)	35(25.5)	26(19.0)	30(21.9)	15(10.9)
11.	Consuming carbohydrates 30-60 minutes before a match maintains energy.	31(22.6)	40(29.2)	26(19.0)	23(16.8)	17(12.4)
12.	Drinking water or sports drinks 15-30 minutes before a match helps prevent dehydration.	36(26.3)	35(25.5)	28(20.4)	24(17.5)	14(10.2)
13.	Eating breakfast helps performance during morning training.	35(25.5)	35(26.5)	27(19.6)	22(16.1)	18(13.1)
14.	Avoiding too much fiber before a game prevents digestive issues.	27(19.7)	32(23.4)	37(27.0)	28(20.4)	13(9.5)
15.	Nutrition plan flexibility based on game/practice demands.	36(26.3)	34(24.8)	30(21.9)	21(15.3)	16(11.7)

Table 5: Nutritional timing of football players

This study investigated the eating and drinking behavior of footballers, focusing on their response rates to 15 key items. The responses were then grouped into five types: strongly agree (SA), agree (A), uncertain (UN), disagree (D), and strongly disagree (SD). The following section details an item-by-item analysis supported by the data.

The majority of the footballers were aware of the need for hydrating the body, 34.3% SA and 24.8% A, though as many as 16.8% were non-committal (UN) and another 12.4% disagreed, D, thus showing variable habits in hydration. Moreover, 11.7% strongly disagreed, with appropriate fluid intake levels. More than half of the footballers responded to knowing their daily nutritional needs; 26.3 percent agreed and 22.6 percent strongly agreed with the statement. However, 24.1 percent were undecided (UN), and 27.0 percent disagreed (D and SD) who defied nutritional principles and had anticipated some lack of cohesion or clarity on the distribution of nutrients. A large number of footballers were in favor of the pre-event intake of carbohydrates, with 29.9% of the respondents agreeing, and 26.3% of them strongly agreeing. However, 17.5% were not sure, UN, and close to 26% (summation of D and SD) rejected this assumption that there are some merits associated with carbohydrate loading. More precisely, about the issue of liquid and solid calories during the competition itself, 28.5% strongly agreed (SA), and 24.8% agreed (A), while 21.2% remained uncertain (UN), with about 25.5% - combining D and SD elements - not practicing this, perhaps because of difficulties in practice or due to different philosophies regarding nutrition.

About 50% of the footballers stressed the intake of macronutrients after the competition (28.5% A and 22.6% SA) and, 17.5% remained UN. However, 31.4% (D 17.5% and SD 13.9%). About 49 % of respondents (28.5% A and 20.4% SA) took Pre-exercise meals, and 17.5% remained uncertain (UN). Almost 33.6% (24.1.0% disagreed, and 9.5% strongly disagreed) of the footballers did not eat meals regularly before exercising. More than half of the participants believed in the positive effects of meals after exercise, with 32.1% SA and 27.7% A. However, 16.8% were still UN, and another 23.3% combined D and SD, suggesting a chance that some of the athletes may not know about feeding after exercise. Contrary to the necessity to take snacks frequently for energy purposes, the data indicated 22.6% A and 18.2% SA of the respondents. The culture of substantively snacking the whole day was not clear cut, with 25.5% UN, 24.1% D, and 9.5 SD. A total of 24.8% strongly agreed and 23.4% agreed that three main meals were sufficient to reach peak performance, while 19.0% were undecided. Combined, 32.8% disagreed, which could indicate that many footballers may require more than three meals or snacks per day to perform optimally.

Regarding the question about post-match nutrition, 25.5% agreed and 22.6% strongly agreed, while 19.0% were not sure. A total of 32.8% disagreed, indicating different opinions or habits when it comes to meals after a match for recovery. Regarding carbohydrate intake just before a match, 29.2% agreed and 22.6% strongly agreed, while 19.0% were undecided. Meanwhile, 29.2% did not abide by this practice, showing different views regarding pre-match carb consumption. Many footballers realized the importance of pre-match hydration: 26.3% strongly agreed and 25.5% agreed; however, 20.4% were undecided, while 27.7% (D and SD), indicated that not all footballers follow the good habit of hydration before a match. A total of 51.2% of the subjects strongly agreed and agreed that breakfast was an important meal for morning training, but 19.6% were undecided. Almost 29.2%, of the levels that disagreed and strongly disagreed with the importance of breakfast, had other habits related to morning nutrition.

About 43.1% of footballers agreed that foods containing fiber should be avoided before a match (SA and A combined), while 27% were not sure. However, a combined 29.9% of the footballers disagreed, thus showing that the footballers are different in their choices of food before a match. Around 26.3% strongly agreed and 24.8% agreed that one's diet should be flexible based on the game or practice. Whereas 21.9% were undecided, and 27% disagreed, combined as D and SD, it

follows that some footballers might keep more stringent eating plans. This indicated that although hydration, carbohydrate intake, and post-exercise nutrition were mostly agreed upon, more individualized items, such as snacking frequency and pre-match meal composition and amount of fiber ingested pre-match, greatly deviated. Uncertainty levels also gave an idea about the needed amount of further education or consensus on certain topics (Table 5).

4.6. Discussions

This study aimed to assess the dietary practice, food consumption frequency, nutritional knowledge, and nutritional timing of football club players in the Dire Dawa City Administration, Ethiopia. The current study found that while most players were aware of the importance of a balanced diet, a significant proportion had irregular meal patterns, inadequate carbohydrate consumption, and limited intake of micronutrient-rich foods. These results aligned with those (Tesfaye *et al.,* 2020; Ahmed and Bonsa, 2019) which consistently highlight sub-optimal dietary practices among athletes due to limited access to resources and nutritional knowledge A study conducted among amateur football players in Addis Ababa reported similar challenges, including a lack of dietary diversity and inconsistent meal timing, which negatively impacted players' performance and recovery (Gebremariam *et al.,* 2021) and (Symposium, 2010).

A study by Silva *et al.* (2022) among Brazilian amateur football players revealed deficiencies in energy intake and an imbalance in macronutrient distribution, reflecting patterns observed in the current research. This suggested that inadequate nutritional practices are a global issue, particularly among players in low-resource settings. Conversely, studies by Smith *et al.* (2021) and Collins, Maughan, *et al.* (2021), conducted in high-income settings, reported that professional football players in the UK consumed well-planned diets tailored to their training and recovery needs, with significant involvement from sports nutritionists. These findings contrasted sharply with the current study, where the absence of structured nutritional guidance was evident. The disparity might be attributed to differences in infrastructure, financial investment in sports, and access to qualified nutrition professionals.

The study's findings showed the need for targeted nutrition education programs for football players in Dire Dawa. Enhancing players' knowledge about the timing, quantity, and quality of food intake is essential to optimizing performance. Teamwork between clubs and sports nutritionists can bridge the gap between current practices and recommended guidelines (Maughan *et al.*, 2018).

Furthermore, addressing systemic issues such as resource limitations and inadequate nutritional support at the club level is crucial. Policies that integrate nutrition as a core component of sports development programs in Ethiopia could significantly improve dietary practices and, subsequently, athletic performance.

This study targeted to assess the food consumption frequency of football club players in the Dire Dawa City Administration and identify the types of foods consumed most frequently. The results demonstrated that carbohydrate-rich foods, such as *injera* and bread, were the most frequently consumed staple foods, followed by protein sources like legumes and eggs. These findings aligned with (Tesfaye *et al.* (2020), who noted a reliance on traditional carbohydrate sources as the primary energy supply for endurance activities. Similarly, (Adejumo *et al.* (2019) reported that football players in Sub-Saharan Africa often consume high-carbohydrate diets, although these are frequently complemented with insufficient protein and micronutrient sources.

In contrast, studies from Western countries (Smith *et al.* (2021), and *(*Reichmann and Chen, *et al*., 2015) reported higher diversity in protein intake among football players, including lean meats, fish, and protein supplements, which are often lacking in diets of athletes in developing regions. This variation might reflect differences in economic resources, cultural food preferences, and access to diverse food types. The low consumption of fruits and vegetables observed in this study raised concerns about potential micronutrient deficiencies among Dire Dawa football players. This finding aligned with the work of Gebremariam *et al.* (2018), who found similar trends in Ethiopian athletes, where micronutrient-rich foods are consumed infrequently due to cost and limited awareness. In contrast, studies from developed nations, (García *et al.* 2020), and Abbey, Wright, *et al*., (2017) pointed out the prioritization of nutrient-dense foods and tailored supplementation to meet athletes' specific needs.

Cultural preferences significantly influence food choices in Dire Dawa, as traditional meals dominate the players' diets. This supports the reports of Mulugeta *et al*. (2021), who found that Ethiopian athletes often prioritize traditional foods over imported or less familiar options. Given the study findings and comparisons, it is evident that the dietary habits of Dire Dawa football players fall short of optimal nutritional practices for athletic performance. The predominance of

carbohydrate intake, coupled with insufficient protein and micronutrient consumption, could compromise recovery, performance, and overall health (Osei *et al*. 2019), Morgado Et., (2023). The study also aimed to assess the nutritional knowledge of adult football players in Dire Dawa City Administration. The findings revealed that while a subset of players exhibited a moderate understanding of fundamental nutrition practices, a significant proportion demonstrated limited knowledge. In conjunction with the current findings, (Shirreffs *et al.* 2015) highlighted football players in Europe had only a basic understanding of hydration and energy needs, often relying on communicative advice rather than evidence-based guidelines. Similarly, Potgieter (2013) and (L. Burke and Cox, *et al.*, 2010) demonstrated elite athletes generally performed better in nutrition knowledge assessments, the trend among club-level athletes was characterized by substantial knowledge gaps, particularly concerning protein intake and post-match recovery strategies.

In Nigeria the study conducted by (Onyechi *et al.* 2017), and (Wardley, 2017) showed that many football players lacked formal education in sports nutrition, relying on coaches or peers for guidance. This corresponds to the current study, as a majority of players cited their primary information sources as teammates and social media, rather than nutritionists or scientific resources. While, the results of this study contrasted with (Heaney *et al.* 2011), who reported higher levels of nutritional knowledge among football players with access to club dietitians and formal nutrition education programs. This discrepancy might be attributed to differences in resource allocation, access to sports nutrition professionals, and the availability of structured educational programs. Additionally, (Torres-McGehee *et al.* 2012) conducted on collegiate athletes in the United States revealed significantly higher scores in nutrition knowledge assessments when regular nutrition workshops were implemented. Such structured interventions are notably absent among Dire Dawa City football players, as indicated by the lack of formal educational sessions reported by participants.

In the current study, the nutritional timing of football players in Dire Dawa City Administration before, during, and after training and competition sessions has also been assessed. The study revealed that most players consumed meals 2 to 3 hours before training and competition. This timing aligned with the recommendations of Thomas *et al*. (2016), who emphasized the importance of consuming carbohydrate-rich meals 2–4 hours before exercise to maximize glycogen stores. However, the macronutrient distribution in the players' pre-competition meals was suboptimal,

with a low emphasis on carbohydrate intake, which is critical for energy during high-intensity activities. In contrast, studies conducted on elite football players in European leagues (Naughton *et al.,* 2020) reported higher adherence to carbohydrate-rich diets before games, likely due to better access to nutritional guidance. The study conducted in Kenya and Ghana by (Mwangi *et al.,* 2019; Acheampong *et al.,* 2021), highlighted comparable challenges, with players relying on traditional diets that are often not aligned with sports nutrition principles.

The study found limited intake of fluids and sports drinks during training and matches, primarily due to a lack of awareness and inadequate access to sports drinks or appropriate snacks. This finding aligned with the results of Masuku *et al.* (2017), who found that amateur players in South Africa rarely consumed carbohydrates during games, increasing the risk of dehydration and energy depletion. However, contrasting studies from higher-income settings (Burke *et al.,* 2018) emphasized the widespread use of sports drinks and gels during matches to maintain energy and electrolyte balance. In the current study, most players reported consuming their meals several hours after training or matches, which falls outside the recommended framework of 30 minutes to 2 hours post-exercise for optimal recovery. Similar findings were observed in a study conducted on amateur football players in Nigeria (Adegboye *et al.,* 2020), where post-exercise meals were often delayed due to cultural habits or logistic challenges. In contrast, professional players in Western countries tend to have immediate access to tailored post-game recovery meals, as reported by Anderson *et al.* (2019).

The study revealed significant gaps in the dietary practices, nutritional knowledge, food consumption frequency, and nutritional timing of adult football players in the Dire Dawa City Administration. While players relied heavily on traditional carbohydrate staples like *injera* and bread, their diets lacked diversity, particularly in protein and micronutrient-rich foods, raising concerns about deficiencies. Nutritional knowledge was limited, with most players relying on peers and social media rather than experts for guidance. Pre-training meals were consumed within recommended timeframes but were nutritionally inadequate, and post-activity meals were often delayed, hindering recovery. Limited access to fluids and sports drinks during training and matches compounded these challenges. Comparisons with players in higher-income locations emphasized disparities driven by resource constraints, insufficient infrastructure, and lack of structured nutritional guidance(Faruga-Lewicka, Pietraszko, *et al,* 2023).

5. SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

5.1. Summary

The current study assessed the dietary practices, food consumption frequency, nutritional knowledge, and nutritional timing among football club players in Dire Dawa City Administration, Ethiopia. The study employed a cross-sectional research design, incorporating quantitative and qualitative methods to gather data from active players in various football clubs. Structured questionnaires were used to collect data on dietary habits, nutrient intake patterns, and knowledge about sports-specific nutrition and timing. The findings revealed suboptimal dietary practices among players, with irregular meal patterns and inadequate intake of key macronutrients and micronutrients essential for athletic performance. The frequency of consuming carbohydrate-rich foods, fruits, and vegetables was below recommended. Nutritional knowledge among players was moderate, with notable gaps in understanding proper hydration, pre- and post-training meals, and recovery nutrition. Nutritional timing practices, such as the timing of pre-game meals and post-game recovery snacks, were inconsistent and misaligned with best practices for athletic performance. These findings underscore the need for tailored interventions to enhance the dietary practices and nutritional awareness of football players in the region.

5.3. Conclusions

- ✓ **Dietary Practices:** The dietary habits of football players in Dire Dawa are inconsistent with the dietary recommendations for optimal sports performance. Players demonstrate irregular meal patterns and insufficient intake of essential food groups, particularly fruits, vegetables, and protein sources.
- ✓ **Food Consumption Frequency:** The frequency of consuming nutrient-rich foods is low, with reliance on energy-dense but nutrient-poor diets, which may hinder performance and recovery.
- ✓ **Nutritional Knowledge:** While players possess some awareness of basic nutrition, significant gaps exist in understanding the role of nutrition in enhancing performance, particularly regarding macronutrient balance, hydration, and recovery strategies.
- ✓ **Nutritional Timing:** The timing of meals and snacks around training and competition is poorly practiced, potentially reducing the players' performance and recovery efficiency.

5.4. Recommendations

- ❖ Players and coaches implement routine nutrition education tailored to athletes, emphasizing balanced diets, hydration, and nutritional timing.
- ❖ Nutrition experts, Sports Commission, and Sports Federations must enforce nutrition-focused policies.
- ❖ Players must adopt consistent eating schedules with balanced pre-training meals and recovery snacks.
- ❖ Future research must explore the long-term effects of improved nutrition on performance and address cultural and socio-economic barriers affecting athletes' dietary behaviors in Ethiopia, particularly in Dire Dawa, aligning with global standards.

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7. APPENDICES

APPENDIX A

Participant Information Sheet and Informed Voluntary Consent Form for Dire Dawa City Football Club Players

1. Introduction

My name is _____. I am working as a data collector for the study being conducted in this community by Lelisa Birhanu Bati who is studying for his master's degree at Haramaya University, the College of Sport Science Academy. I kindly request you to lend me your attention so I can explain the study and be selected as the study participant.

2. The study/project title

To assess the dietary practice, food consumption frequency, nutritional knowledge, and nutritional timing of football club players in Dire Dawa City Administration, Ethiopia, from June 15 to July 15, 2024.

Purpose/aim of the study

The findings of the study can be of paramount importance for the Dire Dawa City Adults' football club players to plan intervention programs to assess the dietary practice, food consumption frequency, nutritional knowledge, and nutrition timing in your community, thereby improving players' health and survival in general. Moreover, this study aims to write a thesis as a partial requirement for the fulfillment of a Master's program in Sports Nutrition for the principal investigator.

3. Procedure and duration

I would interview you using a questionnaire to provide me with pertinent data that is helpful for the study. There are 53 questions to answer and I would fill the questionnaire by interviewing you. The interview would take about 20 minutes, so I kindly request you to spare me this time for the interview.

5. Risk and benefit

The risk of participating in this study is very minimal, but only taking a few minutes of your time. There would not be any direct payment for participating in this study. However, the findings from this research may reveal important information for local meal planners.

6. Confidentiality

The information you would provide us is confidential. There would be no information that would identify you in particular. The findings of the study would be general for the study community and

would not reflect anything particular about individual persons or housing. The questionnaire would coded to exclude showing names. No reference would made in oral or written reports that could link participants to the research.

7. Rights

Participation in this study is fully voluntary. You have the right to declare whether to participate or not in this study. If you decide to participate, you have the right to withdraw from the study at any time, and this would not label you for any loss of benefits, to which you otherwise are entitled. You do not have to answer any question that you do not want to answer.

8. Contact address

If there are any questions or inquiries at any time about the study or the procedures, please contact Lelisa Birhanu Bati; Phone No +251931219364/+251913701453; E-mail lelisab53@gmail.com As well as the contact, address of the responsible Institutional Health Research Ethics Review Committee (IHRERC) at HUHMS.

Office Phone:0254662011 or P.O. Box 235, Harar, Ethiopia.

9. Declaration of informed voluntary consent

I have read/was read to me the participant information sheet. I have clearly understood the purpose of the research, the procedures, the risks and benefits, issues of confidentiality, the rights of participating, and the contact address for any queries. I have been allowed to ask questions about things that may have been unclear. I was informed that I have the right to withdraw from the study at any time or not to answer any question that I do not want. Therefore, I declare my voluntary consent to participate in this study with my initials signature.

Name and signature of the participant: _____Date_____

Name and signature of the Data Collector: _____Date_____

This is signed face-to-face in the presence of the principal investigator.

- Please provide a copy of this signed consent to the participant.
- If the participants are a layperson and cannot sign initials, can put his/her thumbprint in front of a competent witness; and the witness has to sign alongside (with his/her name and Address).

Section One: Dietary Practice of Football Players

This questionnaire gathers information on athletes' current dietary habits, food choices, supplement use, meal timing, portion control, barriers to healthy eating, and goals and preferences. The information gathered can be used to provide personalized dietary recommendations and support athletes in achieving their performance goals while maintaining overall health and well-being. **Please make a tick (√) where you think it concerns you. Tick under the following numbers. 5=Always, 4=Often, 3=Sometimes, 2= Rarely, 1=Never**

Table 6: Dietary Practice of Football Players Questionnaire

No.	**Items**	**Never (%)**	**Rarely (%)**	**Sometimes (%)**	**Often (%)**	**Always (%)**
1.	Consuming balanced diet					
2.	Eating snacks per day					
3.	Skipping meals due to busy schedules or travel					
4.	Eating eggs					
5.	Drinking water					
6.	Eating meals outside of the home					
7.	Eating breakfast, lunch, and dinner timely					
8.	Eating pasta salad or macaroni salad					
9.	Eating groundnut					

Section Two: Food Consumption Frequency of Football Players

Introduction

In football, what you eat plays a crucial role in your performance and overall health. This questionnaire aims to gather information about your food consumption frequency to help us better understand your eating patterns and provide personalized recommendations for optimal nutrition. Please answer the following questions honestly and accurately and make a tick (√) where you think it concerns you. Tick under the following numbers. **6**(2-4 times a day), **5**(Once a day), **4**(2-4 times per week), **3**(Once a week), **2**(1-3 times per month), **1**(Never)

Table 7:Food Consumption Frequency of Football Players Questionnaire

No.	**Items**	**Never**	**1-3 times a month**	**Once a week**	**2-4 times a week**	**Once a day**	**2-4 times a day**
1.	Fruit (Apple, Banana, Watermelon, Strawberry, Mangoes)						
2.	Popular Dishes **(**Injera, Doro Wot, Misir Wot, Kik Alitcha Wot, Gomen Basiga, Awaze, Tibs, Tikel Gomen, Gored-Gored, Kitfo, Fosolia, Kik Alitcha)						

3.	Beverages (Coffee, Tea, Honey Wine, Alcohol)						
4.	Sweets (Cakes, Doughnut, Pancakes, Ice cream)						
5.	Dairy Products (Milk, Cheese, Yogurt)						
6.	Eggs						
7.	Soft Drinks (Fanta, Coca-Cola, Sprite, Mirinda, Sofi, Negus, Sinq', Pepsi)						
8.	Vegetables (Salads, Carrots, Peppers, Garlic, Onion, Ginger, Cabbage, Corn, Tomatoes, Lentils)						
9.	Starchy foods (Breads, Cereals, Pasta, Potatoes, Rice)						
10.	Ethiopian desserts food (Halawa, Mushebek, Chocolates, Sambuusa, Kolo)						
11.	Meat (Burgers, Meat Dishes, Pizza)						
12.	Fruit Juices (Orange Juice, Mango Juice, Pineapple Juice, Papaya Juice)						
13.	Fluids (Water, Sports Drinks, Energy Drinks)						
14.	Healthy Fats food (Nuts, Seeds, Avocado, Olive Oil)						
15	Basic Pantry food (Berbere, Mitmita, Niter Kibbeh, Awaze Sauce)						

Section Three: Nutritional Knowledge of Football Players

As an athlete, it's essential to understand nutrition and how it can impact your performance, recovery, and overall health. This questionnaire aims to assess your current knowledge and understanding of various aspects of nutrition for athletics. Your responses would help us identify areas where you may need further education or guidance. Please answer the following questions honestly and accurately and make a tick (√) where you think it concerns you. Tick under the following numbers. **5**=Strongly Agree, **4**=Agree, **3**=Uncertain, **2**= Disagree, **1**=Strongly Disagree

Table 8:Nutritional Knowledge of Football Players Questionnaire

No.	**Items**	**SA**	**A**	**UN**	**D**	**SD**
1.	In the absence of CHO, fats, and proteins are used for energy.					
2.	Footballers more consume protein than non-footballers.					
3.	CHO is the primary source of energy for footballers.					
4.	Protein is important for muscle growth and repair.					
5.	Honey is a high source of energy for football players.					
6.	A balanced diet is essential for sportsmen.					
7.	Eating foods that are high in fluids and carbohydrates is recommended for footballers.					
8.	Eating high-fat foods in an everyday diet increases the risk of cardiovascular.					
9.	I avoid eating too much fat and sugar in my diet.					
10.	The importance of hydration during exercise and competition is high.					

11.	Football players can enhance their sports performance through good nutrition practices.					
12.	I eat a variety of fruits and vegetables as part of my daily meals.					
13.	Fat is an essential component of a healthy diet for footballers.					
14.	Sports drinks can be beneficial for rehydrating during and after exercise.					

Section Four: Nutritional Timing of Football Players

Proper nutrition is crucial for optimal performance, recovery, and overall well-being as an athlete. The timing of meals and snacks can significantly impact your body's ability to adapt and respond to training and competition. This questionnaire aims to gather information about your current nutritional habits and preferences to help us better understand your needs and provide personalized recommendations for optimizing your nutritional timing.

Please answer the following questions honestly and accurately and make a tick (√) where you think it concerns you. Tick under the following numbers. 5=Strongly Agree, 4=Agree, 3=Uncertain, 2= Disagree, 1=Strongly Disagree

Table 9:Nutritional Timing of Football Players' Questionnaire

No.	**Items**	**SA**	**A**	**UN**	**D**	**SD**
1.	I am drinking water during training and competition.					
2.	Daily Nutritional Needs					
3.	We are consuming foods high in carbohydrates before competition.					
4.	We are consuming foods high in fluids and carbohydrates during competition.					
5.	We are consuming foods high in macronutrients after competition.					
6.	Eating a meal before exercise provides energy and supports performance.					
7.	Eating a post-exercise meal to aid in recovery and muscle repair.					
8.	Snacking regularly throughout the day to maintain energy levels.					
9.	Eating 3 main meals a day is sufficient for optimal performance during football matches.					
10.	Eating a meal or snack after a football match aids recovery.					
11.	Consuming carbohydrates 30-60 minutes before a match maintains energy.					
12.	Drinking water or sports drinks 15-30 minutes before a match helps prevent dehydration.					
13.	Eating breakfast helps performance during morning training.					
14.	Avoiding too much fiber before a game prevents digestive issues.					
15.	Nutrition plan flexibility based on game/practice demands.					

APPENDIX B

ለድሬዳዋ ከተማ የአዋቂዎች እግር ኳስ ክለብ ተጫዋቾች የተሳታፊ መረጃ ወረቀት እና በመረጃ የተደገፈ የበጎ ፈቃድ ፎርም

1. መግቢያ

የኔ ስም _____እባላለሁ።. በሃሮማያ ዩኒቨርሲቲ በስፖርት ሳይንስ አካዳሚ ሁለተኛ ዲግሪያቸውን በመማር ላይ ባለው ሌሊሳ ብርሃኑ ባቲ በዚህ ማህበረሰብ ውስጥ እየተካሄደ ላለው ጥናት መረጃ ሰብሳቢ ሆኜ እየሰራሁ ነው። ስለ ጥናቱ እና እንደ የጥናቱ ተሳታፊ መመረጦ ትኩረት እንዲሰጡኝ በአክብሮት እጠይቃለሁ።

2. የጥናቱ/የፕሮጀክቱ ርዕስ፡-

በድሬዳዋ ከተማ አስተዳደር የአዋቂ እግር ኳስ ክለብ ተጫዋቾች የአመጋገብ ልምድ፣ የምግብ ፍጆታ ድግግሞሽ፣ እውቀት እና የአመጋገብ ጊዜን ከሰኔ 15 እስከ ሐምሌ 15 ቀን 2024 ለመገምገም።

3. የጥናቱ ዓላማ፡-

የጥናቱ ውጤት የድሬዳዋ ከተማ የአዋቂዎች እግር ኳስ ክለብ ተጫዋቾች በአካባቢያችሁ ያለውን የአመጋገብ ልምድ፣ የምግብ ፍጆታ ድግግሞሽ፣ ግንዛቤ እና የአመጋገብ ጊዜን ለመገምገም የጣልቃ ገብነት መርሃ ግብሮችን በማቀድ የተጫዋቾችን ጤና እና ህልውና ለማሻሻል ከፍተኛ ጠቀሜታ በአጠቃላይ ይኖረዋል።ከዚህም በላይ የዚህ ጥናት ዓላማ ለዋና መርማሪው በስፖርት አመጋገብ ውስጥ የማስተርስ መርሃ ግብርን ለማሟላት እንደ ከፊል መስፈርት ሆኖ ተሲስ መጻፍ ነው።

4. ሂደት እና የቆይታ ጊዜ፡-

ለጥናቱ አጋዥ የሆኑ ተዛማጅ መረጃዎችን ለመሰጠት መጠይቁን ተጠቅሜ ቃለ መጠይቅ አደርግልዎታለሁ። እርስዎን በመጠየቅ መጠይቁን የምሞላበት 53 ጥያቄዎች መልስ ያገኛሉ። ቃለ-መጠይቁ 20 ደቂቃ ያህል ይወስዳል፣ ስለዚህ ለቃለ መጠይቁ በዚች ጊዜ እንድትሰጡኝ በአክብሮት እጠይቃለሁ።

5. ሲጋት እና ጥቅም፡-

በዚህ ጥናት ውስጥ የመሳተፍ ዕድሉ በጣም አናሳ ነው፣ነገር ግን ጥቂት ደቂቃዎችን ብቻ ነው የሚወስደው። በዚህ ጥናት ውስጥ ለመሳተፍ ምንም አይነት ቀጥተኛ ክፍያ አይኖርም። ነገር ግን፣ የዚህ ጥናት ግኝቶች ለአካባቢው የምግብ እቅድ አውጪዎች ጠቃሚ መረጃን ሊያሳዩ ይችላሉ።

6. ሚስጥራዊነት፡-

የምታቀርቡልን መረጃ ሚስጥራዊ ይሆናል። በተለይ እርስዎን የሚለይ መረጃ አይኖርም። የጥናቱ ግኝቶች ለጥናት ማህበረሰብ አጠቃላይ እና የግለሰብን ወይም የመኖሪያ ቤትን ምንም የሚያንፀባርቅ አይሆንም። መጠይቂያው ስሞችን ከማሳየት እንዲገለሉ ኮድ ይደረጋል። ተሳታፊዎችን ከጥናቱ ጋር ሊያገናኙ የሚችሉ የቃል ወይም የጽሁፍ ዘገባዎች ማጣቀሻ አይደረግም።

7. መብቶች፡-

በዚህ ጥናት ውስጥ መሳተፍ ሙሉ በሙሉ በፈቃደኝነት ነው. በዚህ ጥናት ለመሳተፍም ሆነ ላለመሳተፍ የማወጅ መብት አልዎት። ለመሳተፍ ከወሰኑ፣ በማንኛውም ጊዜ ከጥናቱ የመውጣት መብት አልዎት፣ እና ይህ እርሶ ለሚሰጡት ጥቅማጥቅሞች ኪሳራ ምልክት አይሰጥዎትም ፣ ይህ ካልሆነ እርስዎ መብት አለዎት። መመለስ የማትፈልገውን ማንኛውንም ጥያቄ መመለስ የለብህም።

8. የመገኛ አድራሻ፡-

ስለ ጥናቱ ወይም አሠራሩ በማንኛውም ጊዜ ጥያቄዎች ወይም ግልፅ ያልሆኑ ካሉ እባክዎን ሌሊሳ ብርሃኑ ባቲን ያነጋግሩ; ስልክ ቁጥር +251931219364/+251913701453; E-mail lelisab53@gmail.com እንዲሁም ኃላፊነት የሚሰማው የተቋማት ጤና ጥናትና ምርምር ሥነምግባር ገምጋሚ ኮሚቴ አድራሻ፣ ቢሮ በስልክ ቁጥር 0254662011 ወይም P.O. ቦክስ 235፣ ሐረር፣ ኢትዮጵያ.

9. በመረጃ ላይ የተመሰረተ የፈቃደኝነት ስምምነት መግለጫ፡-

የተሳታፊውን የመረጃ ወረቀት አንብቤአለሁ/ ተነብቦልኛል። የጥናቱ ዓላማ፣ አካሄዶች፣ ስጋቶች እና ጥቅሞች፣ ሚስጥራዊ ጉዳዮች፣ የመሳተፍ መብቶች እና የእውቂያ አድራሻው ለማንኛውም ጥያቄ በግልፅ ተረድቻለሁ። ግልጽ ባልሆኑ ጉዳዮች ላይ ጥያቄዎችን እንድጠይቅ እድል ተሰጥቶኛል። በማንኛውም ጊዜ ከጥናቱ የመውጣት ወይም የማልፈልገውን ማንኛውንም ጥያቄ ላለመመለስ መብት እንዳለኝ ተነግሮኛል። ስለዚህ፣ በዚህ ጥናት የመጀመሪያ ፊርማዬ ላይ ለመሳተፍ በፈቃደኝነት መስማማቴን

አውጃለሁ። የተሳታፊው ስም እና ፊርማ፡- _____ ቀን _____

የመረጃ ሰብሳቢው ስም እና ፊርማ፡- _____ ቀን_____

**N.B፡ ***ይህ መረጃ ሰብሳቢው ባሉበት ፊት ለፊት ተፈርሟል።

*እባክዎ የዚህን የተፈረመ ስምምነት ቅጂ ለተሳታፊው ያቅርቡ።

*ተሳታፊው ማንበብና መጻፍ የማይችል ከሆነ, ሙሉውን መረጃ ለእሱ ወይም ለእሷ ያንብቡ እና ስሙን እና

ፊርማውን በትክክል ይሙሉ_____

<u>የውሂብ ስብስብ መጠይቅ</u> <u>መግቢያ</u>

የዚህ መጠይቅ አላማ እንደ እግር ኳስ ተጫዋች ስለ አመጋገብ ልምዶችዎ መረጃን መሰብሰብ ነው። የአንቴን/ችን ምላሾች የእግር ኳስ ተጫዋቾችን የአመጋገብ ልማድ እና የአመጋገብ ፍላጎቶች በተሻለ ሁኔታ እንድንረዳ ይረዱናል። እባክህ/ሽ ጥያቄዎቹን በቅንነት መልስ/ሽ።

1.ምላሽ ሰጪ ኮድ: _____ የተመራማሪ ኮድ: _____ የቃለ መጠይቁ ቀን: _____

የቃለ መጠይቅ ኮድ: _____

ክፍል 1. ጾታ: _____. ሃይማኖት: _____ ቁመት: _____cm. ክብደት: _____kg

<u>የተሳታፊ መረጃ</u>

3. ቋንቋ: _____

6. የስልጠና ድግግሞሽ: □ ≥3 ጊዜ በቀን □ በቀን 1-2 ጊዜ □ በሳምንት 3-4 ጊዜ

7. የውድድር ድግግሞሽ: □ ≥3 ጊዜ በቀን □ በቀን 1-2 ጊዜ □ በሳምንት 3-4 ጊዜ

8. የትምህርት ደረጃ: □ መደበኛ ትምህርት የለም □ የመጀመሪያ ደረጃ ትምህርት □ የሁለተኛ ደረጃ ትምህርት □ ዲፕሎማ/ዲግሪ ወይም ከዚያ በላይ

9. በእግር ኳስ ክለብ ውስጥ የተሳተፉ ዓመታት_____.

10. እድሜህ: □ 18-22 □ 23-27 □ 28-32 □ 33-37 □ 38 or older

<u>ክፍል 2፡ የእግር ኳስ ተጫዋቾች አመጋገብ ልምምድ</u> ይህ መጠይቅ ስለ እግር ኳስ ተጫዋቾች ወቅታዊ የአመጋገብ ልማዶች፣ የምግብ ምርጫዎች፣ የተጨማሪ አጠቃቀም፣ የምግብ ጊዜ እና ክፍል ቁጥጥር፣ ጤናማ አመጋገብ እንቅፋቶችን እና ግቦችን እና ምርጫዎችን መረጃ ለመሰብሰብ ያለመ ነው። የተሰበሰበው መረጃ ለግል የተበጁ የአመጋገብ ምክሮችን ለመስጠት እና የእግር ኳስ ተጫዋቾች አጠቃላይ ጤናን እና ደህንነትን በመጠበቅ የአፈፃፀም ግባቸውን እንዲያሳኩ ለመደገፍ ሊያገለግል ይችላል።እባክህ/ሽ ይመለከታኛል ብለህ/ሽ በሚያስብህ/ሽ ቦታ ላይ (√) ምልክት በሚከተሉት ቁጥሮች ስር ያድርግ/ጊ። **5**=ሁልጊዜ፣ **4**=ብዙ ጊዜ፣ **3**=አንዳንድ ጊዜ፣ **2**= አልፎ አልፎ፣ **1**= በጭራሽ

Table 10: የእግር ኳስ ተጫዋቾች አመጋገብ ልምምድ መጠይቅ

ንጥል	**ልኬት**				
	1	**2**	**3**	**4**	**5**
1. የተመጣጠነ ምግብን ምን ያህል ጊዜ ትጠቀማለህ/ሽ?					
2. በቀን ስንት ጊዜ መክሰስ ትበላለህ/ሽ?					
3. በተጨናነክ/ሽ መርሃ ግብሮች ወይም በጉዞ ምክንያት ምግብን ምን ያህል ጊዜ ትዘላለህ/ሽ?					
4. ስንት ጊዜ እንቁላል ትበላለህ/ሽ?					
5. ምን ያህል ጊዜ ውሃ ትጠጣለህ/ሽ?					
6. ከቤት ውጭ ምን ያህል ጊዜ ምግብ ትበላለህ/ሽ?					
7. በሰዓቱ ቁርስ፣ ምሳ እና እራት ስንት ጊዜ ትበላለህ/ሽ?					
8. ምን ያህል ጊዜ የፓስታ ሰላጣ ወይም የማካሮኒ ሰላጣ ትበላለህ/ሽ?					
9. ምን ያህል ጊዜ ለውዝ ትበላለህ/ሽ?					

ክፍል 3፡ የእግር ኳስ ተጫዋቾች የምግብ ፍጆታ ድግግሞሽ መግቢያ

በእግር ኳስ ተጫዋቾች ውስጥ፣ የሚበሉት ነገር በአፈጻጸምህ/ሽ እና በአጠቃላይ ጤናህ/ሽ ላይ ወሳኝ ሚና ይጫወታል። ይህ መጠይቅ አንቴን/ችን የአመጋገብ ስርዓት በተሻለ ሁኔታ እንድንረዳ እና ለተመቻቸ አመጋገብ ግላዊ ምክሮችን ለመስጠት እንዲረዳን ስለ ምግብ ፍጆታ ድግግሞሽ መረጃ ለመሰብሰብ ነው። እባክህ/ሽ ይመለከታኛል ብለህ/ሽ በሚያስብህ/ሽ ቦታ ላይ (√) ምልክት በሚከተሉት ቁጥሮች ስር ያድርግ/ጊ። **6** (በቀን 2-4 ጊዜ) ፣ **5** (በቀን አንድ ጊዜ) ፣ **4** (በሳምንት 2-4 ጊዜ) ፣ **3** (በሳምንት አንድ ጊዜ) ፣ **2** (በወር 1-3 ጊዜ) ፣ **1**(በጭራሽ)

Table 11:የእግር ኳስ ተጫዋቾች የምግብ ፍጆታ ድግግሞሽ መግቢያ መጠይቅ

ንጥል	**ልኬት**					
	1	**2**	**3**	**4**	**5**	**6**
1. ፍራፍሬ (አፕል, ሙዝ, ሐባብ, እንጆሪ, ማንጎ).						
2. ታዋቂ ምግቦች (የጤፍ እንጀራ፣ ዶሮ ዋጥ፣ ሚስር ዋጥ፣ ኪክ አሊቻ ዋጥ፣ ጎመን ባሲጋ፣ አዋዜ፣ ትቅል ጎመን፣ ጎፈድ ጎረድ፣ ክትፎ፣ ፎሶሊያ፣ ኪክ አሊቻ).						

3. መጠጦች (ቡና, ሻይ, ማር ወይን, አልኮሆል).						
4. ጣፋጮች (ኬኮች ፣ ዶናት ፣ ፓንኬኮች ፣ አይስ ክሬም) ።						
5. የወተት ተዋጽኦዎች (ወተት, አይብ, እርጎ).						
6. እንቁላል.						
7. ለስላሳ መጠጦች (ፋንታ፣ ኮካ ኮላ፣ ስፕራይት፣ ሚሪንዳ፣ ሶፊ፣ ሲንቅ'፣ ፔፕሲ).						
8. አትክልቶች (ሰላጣ, ካሮት, በርበሬ, ነጭ ሽንኩርት, ቀይ ሽንኩርት, ዝንጅብል, በቆሎ, ቲማቲም, ቀይ ስር).						
9. ዳቦ, ጥራጥሬዎች, ፓስታ, ድንች, ሩዝ.						
10. ሃላዋ፣ ሙሼቤክ፣ ቸኮሌት፣ ሳምቡሳ፣ ቆሎ።						
11. ስጋ (በርገር, የስጋ ምግቦች, ፒዛ).						
12. የፍራፍሬ ጭማቂዎች (ብርቱካን ጭማቂ, ማንጎ ጭማቂ, አናናስ ጭማቂ, የፓፓያ ጭማቂ).						
13. ፈሳሾች (ውሃ, የስፖርት መጠጦች, የኃይል መጠጦች).						
14. ጤናማ ስብ (ለውዝ፣አቮካዶ፣የወይራ ዘይት).						
15. ዋና ግብዓቶች እና ማጣፈጫዎች (በርበሬ፣ ምጥሚጣ፣ ኒትር ቅቤ፣ አዋዜ ሶስ) ።						

ክፍል 4፡ የእግር ኳስ ተጫዋቾች የአመጋገብ እውቀት

እንደ እግር ኳስ ተጫዋች ስለ አመጋገብ ጥሩ ግንዛቤ እንዲኖርህ/ሽ እና እንዴት በአፈፃፀምህ/ሽ ፣ በማገገምዎ እና በአጠቃላይ ጤናህ/ሽ ላይ ተጽዕኖ እንደሚያሳድር ማወቅ በጣም አስፈላጊ ነው። ይህ መጠይቅ አላማ ያለህ/ሽ ስለ እግር ኳስ ተጫዋቾች የተለያዩ የተመጣጠነ ምግብ ገጽታዎች ያለህ/ሽን እውቀት እና ግንዛቤ ለመገምገም ነው። የአንቴን/ችን ምላሾች ተጨማሪ ትምህርት ወይም መመሪያ ሊፈልጉ የሚችሉባቸውን ቦታዎች እንድንለይ ይረዱናል። እባክህ/ሽ ይመለከታኛል ብለህ/ሽ በሚያስብህ/ሽ ቦታ ላይ (√) ምልክት በሚከተሉት ቁጥሮች ስር ያድርግ/ጊ። **5**= በጣም እስማማለሁ ፣ **4**= እስማማለሁ ፣ 3= እርግጠኛ አህደለዉም፣ **2**= አልስማማም ፣ **1**= በጣም አልስማማም

Table 12: የእግር ኳስ ተጫዋቾች የአመጋገብ እውቀት መጠይቅ

ንጥል	**ልኬት**					
	1	**2**	3	**4**	**5**	**6**
1. አመጋገብ በካርቦሃይድሬት ውስጥ እጥረት ካለ, ከዚያም ስብ እና ፕሮቲኖች ለሃይል ጥቅም ላይ ይውላሉ.						
2. የእግር ኳስ ተጫዋቾች ከእግር ኳስ ተጫዋቾች ይልቅ ብዙ ፕሮቲን መመገብ አለባቸው።						
3. ካርቦሃይድሬትስ ለእግር ኳስ ተጫዋቾች ዋነኛ የኃይል ምንጭን ይወክላል.						
4. ፕሮቲን ለጡንቻ እድገትና ጥገና አስፈላጊ ነው.						
5. ማር ለእግር ኳስ ተጫዋቾች ከፍተኛ የሃይል ምንጭ ነው።						
6. በስፖርት ውስጥ ጥሩ ጤንነት እና አፈፃፀምን ለመጠበቅ የተመጣጠነ አመጋገብ አስፈላጊ ነው.						
7. ከውድድሩ በፊት እግር ኳስ ተጫዋቾች ከፍተኛ ፈሳሽ እና ካርቦሃይድሬት ያላቸውን ምግቦች መመገብ አለባቸው።						
8. በዕለት ተዕለት ምግብ ውስጥ ከፍተኛ ቅባት ያላቸውን ምግቦች መገደብ የልብና የደም ቧንቧ በሽታዎችን ይከላከላል.						
9. በአመጋገብ ውስጥ ከመጠን በላይ ስብ እና ስኳር ከመብላት እቆጠባለሁ.						
10. በአካል ብቃት እንቅስቃሴ እና በውድድር ወቅት የውሃ ማጠጣትን አስፈላጊነት ተረድቻለሁ።						
11. የእግር ኳስ ተጫዋቾች ጥሩ የአመጋገብ ልምዶችን በማድረግ የስፖርት ብቃታቸውን ማሳደግ ይችላሉ።						
12. እንደ ዕለታዊ ምግቦቼ የተለያዩ ፍራፍሬዎችን እና አትክልቶችን እበላለሁ።						
13. ስብ ለእግር ኳስ ተጫዋቾች ጤናማ አመጋገብ አስፈላጊ አካል ነው።						
14. የስፖርት መጠጦች በአካል ብቃት እንቅስቃሴ ወቅት እና በኋላ ውሃን ለማደስ ጠቃሚ ሊሆኑ ይችላሉ.						

ክፍል 5፡ የእግር ኳስ ተጫዋቾች የአመጋገብ ጊዜ

እንደ የእግር ኳስ ተጫዋቾች ትክክለኛ አመጋገብ ለተሻለ አፈጻጸም፣ ለማገገም እና ለአጠቃላይ ደህንነት ወሳኝ ነው። የምግብ እና መክሰስ ጊዜ መመደብ ሰውነትህ/ሽ ከስልጠና እና ውድድር ጋር መላመድ እና ምላሽ የመስጠት ችሎታን በእጅጉ ሊጎዳ ይችላል። ይህ መጠይቅ ፍላጎቶችህ/ሽን በተሻለ ሁኔታ እንድንረዳ እና የአመጋገብ ጊዜህ/ሽን ለማመቻቸት ግላዊ ምክሮችን ለመስጠት እንዲረዳን አሁን ስላለዎት የአመጋገብ ልምዶች እና ምርጫዎች መረጃ ለመሰብሰብ ነው። እባክህ/ሽ ይመለከታኛል ብለህ/ሽ በሚያስብህ/ሽ ቦታ ላይ (√) ምልክት በሚከተሉት ቁጥሮች ስር ያድርግ/ጊ። **5**= በጣም እስማማለሁ ፣ **4**= እስማማለሁ ፣ 3= እርግጠኛ አህደለዉም፣ **2**= አልስማማም ፣ **1**= በጣም አልስማማም

Table 13:የእግር ኳስ ተጫዋቾች የአመጋገብ ጊዜ መጠይቅ

ንጥል	**ልኬት(ውጤት)**					
	1	**2**	3	**4**	**5**	**6**
1. የእግር ኳስ ተጫዋቾች በስልጠና እና ውድድር ወቅት ውሃ መጠጣት አለባቸው.						
2. በየቀኑ ውሃ የሚጠጡበት የጊዜ ርዝማኔ እንደ ዕድሜ፣ ክብደት፣ የአየር ሁኔታ እና የአካል ብቃት እንቅስቃሴ ደረጃ ላይ በመመስረት ሊለያይ ይችላል።						
3. ውድድሩ ከመጀመሩ በፊት እግር ኳስ ተጫዋቾች በካርቦሃይድሬትስ የበለፀጉ ምግቦችን መመገብ አለባቸው።						
4. በውድድሩ ወቅት የእግር ኳስ ተጫዋቾች በፈሳሽ እና በካርቦሃይድሬትስ የበለፀጉ ምግቦችን የመመገብ አላማ ሊኖራቸው ይገባል።						
5. ከውድድር በኋላ እግር ኳስ ተጫዋቾች በማክሮ ኤለመንቶች የበለፀጉ ምግቦችን ለመመገብ ማቀድ አለባቸው።						
6. ጉልበት ለመስጠት እና አፈፃፀምን ለመደገፍ ከአካል ብቃት እንቅስቃሴ በፊት ምግብ እበላለሁ።						
7. ለማገገም እና ለጡንቻዎች ጥገና ለማገዝ ከአካል ብቃት እንቅስቃሴ በኋላ ምግብ እበላለሁ።						
8. የኃይል ደረጃን ለመጠበቅ ቀኑን ሙሉ መክሰስ እበላለሁ።						
9. በእግር ኳስ ግጥሚያዎች ላይ ለተሻለ አፈፃፀም በቀን 3 ዋና ዋና ምግቦችን (ቁርስ፣ ምሳ እና እራት) መመገብ በቂ ነው ብዬ አምናለሁ።						
10. ከእግር ኳስ ግጥሚያ በኋላ ወዲያውኑ ምግብ ወይም መክሰስ መመገብ ለማገገም ይረዳል ብዬ አምናለሁ።						
11. ከግጥሚያ በፊት ከ30-60 ደቂቃዎች በፊት ካርቦሃይድሬትን መጠቀሜ የኃይል ደረጃዬን ለመጠበቅ ይረዳል ብዬ አስባለሁ።						
12. አንድ ግጥሚያ ከመጀመሩ ከ15-30 ደቂቃ በፊት ውሃ መጠጣት ወይም የ ስፖርት መጣጦች መጠጣት ድርቀትን ይከላከላል ብዬ አምናለሁ።						
13. በጠዋት የስልጠና ክፍለ ጊዜዎች በተሻለ ሁኔታ እንድሰራ ለመርዳት ቁርስን ለመብላት ቅድሚያ እሰጣለሁ.						
14. ከጨዋታ በፊት ብዙ በፋይበር የበለፀገ ምግብ ከመመገብ እቆጠባለሁ ምክንያቱም የምግብ መፈጨት ችግርን ያስከትላል።						
15. የእኔ የአመጋገብ እቅድ በእያንዳንዱ ጨዋታ ወይም ልምምድ ልዩ ፍላጎቶች ላይ በመመስረት ተለዋዋጭ እና ሊጣጣም የሚችል ነው።						

APPENDIX C

Waraqaa Odeeffannoo Hirmaattotaa fi Unka Hayyama Tola ooltummaa Odeeffannoo Taphattoota Kilabii Kubbaa Miilaa Ga'eessota Bulchiinsa Magaalaa Dirre Dawaa

1. Seensa

Maqaan koo _____ jedhama. Qorannoo hawaasa kana keessatti gaggeeffamaa jiruuf Leellisaa Birhaanuu Baatii Yuunivarsiitii Haramayaa, Kolleejjii Saayinsii Ispoortii Akkaadaamiitti, Saayinsii Ispoortii keessatti digrii lammaffaatiif qorannoo hojjetaa waan jiruuf daataa walitti qabaa ta'een hojjechaafii jira. Hirmaataa qorannichaa taatee filatamuu kee akkan siif ibsuu fi xiyyeeffannoo kee akka naaf kennitun kabajaan si gaafadha.

2. Mata duree qo'annichaa/pirojektichaa:

Shaakala nyaataa, irra deddeebii fayyadama nyaataa, beekumsaa, fi yeroo soorata taphattoota kilabii kubbaa miilaa ga'eessota Bulchiinsa Magaalaa Diree Dawaa, Itiyoophiyaa, Waxabajjii 15 hanga Adoolessa 15, 2024tti madaaluuf.

3. Kaayyoo qorannichaa:

Argannoon qorannichaa taphattoonni kilabii kubbaa miilaa Ga'eessota Magaalaa Dire Dawaa sagantaalee gidduseensaa karoorfachuun shaakala nyaataa, irra deddeebiin fayyadama nyaataa, hubannoo, fi yeroo soorataa taphattoota keessan keessatti madaaluufidha. Kanaanis fayyaa fi gahumsi gaariin jiraachuun fooyya'iinsa taphattootaaf barbaachisummaa olaanaa qabaachuu danda'a. Kana malees, kaayyoon qorannoo kanaa qorataa muummichaaf sagantaa digirii lammaffaa soorata ispoortii galmaan ga'uuf akka barbaachisummaa isaatti barruu qorannoo (thesis) barreessuudha.

4. Hojimaata fi yeroo:

Daataa barbaachisaa ta'ee fi qorannichaaf gargaaru naaf kennuudhaaf gaaffilee fayyadamee si gaafachuufan jira. Gaaffilee 53 deebisuuf jirtu keessatti xiyyeeffannoonkee barbaachisaadha. Gaaffii fi deebiin gara daqiiqaa 20 waan fudhatuuf yeroo kana gaaffii fi deebii kanaaf akka na gargaartun kabajaan si gaafadha.

5. Balaa fi faayidaa:

Balaan qorannoo kana irratti hirmaachuu baayyee xiqqaadha, garuu yeroo kee daqiiqaa muraasa qofa fudhachuudha. Qorannoo kanatti hirmaachuuf kaffaltiin kallattiin hin jiraatu. Haa ta'u malee, argannoon qorannoo kanarraa argamu karoorsitoota nyaataa naannoo sanaaf odeeffannoo barbaachisaa ta'e argamsiisuu danda'a.

6. Iccitii:

Odeeffannoon ati naaf kennitu iccitiidhaan ta'a. Odeeffannoon addatti si adda baasu hin jiraatu. Argannoon qorannichaa hawaasa qorannichaaf waliigala kan ta'u yoo ta'u, namoota dhuunfaa ykn mana jireenyaa adda ta'e kan hin calaqqisiifne ta'a. Gaaffiin maqaa agarsiisu akka hin dabalamneef koodiin ni kennama. Gabaasa afaaniin ykn barreeffamaan hirmaattoota qorannicha waliin walqabsiisuu danda'u keessatti eeruun hin kennamu.

7. Mirgoota:

Qorannoon kun hirmaannaa guutummaatiin fedhii ofiitiin kan raawwatamudha. Qo'annoo kana irratti hirmaachuu fi dhiisuu kee beeksisuuf mirga qabda. Yoo hirmaachuuf murteessite, yeroo barbaaddetti qorannicha keessaa ba'uuf mirga qabda, kun miidhaa kamiyyuu waan sirraan hin geenyeef, mallattookeenis ni mirkaneessita.

8. Teessoo quunnamtii:

Yeroo kamiyyuu waa'ee qorannichaa ykn hojimaata irratti gaaffiin yoo jiraate Leellisaa Birhaanuu Baatii qunnami; Lakk bilbilaa +251931219364/+251913701453; E-mail lelisab53@gmail.com. Akkasumas quunnamtii teessoo itti gaafatamummaa qabu koree gamaaggama naamusa qorannoo fayyaa dhaabbilee (IHRERC) bilbila waajjiraa 0254662011 ykn P.O. Box 235, Harar, Itoophiyaa.

9. Ibsa hayyama tola ooltummaa beekumsa qabu:

Waraqaa odeeffannoo hirmaattotaa dubbiseera/naaf dubbifameera. Kaayyoo qorannichaa, hojimaata, balaa fi faayidaa, dhimmoota iccitii, mirga hirmaachuu fi teessoo quunnamtii gaaffii kamiifuu sirriitti hubadheera. Wantoota ifa naaf hin taaneef gaaffii akkan gaafadhu carraan naaf kennameera. Yeroon barbaadetti qo'annoo keessaa ba'uuf ykn gaaffii ani hin barbaanne kamiyyuu deebisuu dhiisuuf mirga akkan qabu naaf himameera. Kanaafuu, qorannoo kana irratti hirmaachuuf fedhii kootiin mallattoo qubee jalqabaa kootiin hayyama koo nan ibsa. Maqaa fi mallattoo hirmaataa: _____ Guyyaa _____.

Maqaa fi mallattoo Walitti qabaa Odeeffannoo: _____ Guyyaa_____. N.B:

- Kunis bakka walitti qabaan odeeffannoo jirutti fuulaa fuulatti mallattaa'a.
- Maaloo waraabbii hayyama mallattaa'e kanaa hirmaataaf kenni.
- Hirmaattonni nama barreessuuf dubbisuu hin dandeenye yoo ta'an, ragaa gahumsa qabuun fuulduratti maqaaf mallattoo isaanii maxxansi.

Gaaffii Odeeffannoo Walitti Qabuu

Seensa

Kaayyoon gaaffilee kanaa akka taphataa kubbaa miilaa tokkootti gochaalee fi amala nyaataa keessanii odeeffannoo walitti qabuudha. Deebiin keessan amala nyaataa fi fedhii soorataa taphattoota kubbaa miilaa caalaatti hubachuuf nu gargaara. Maaloo gaaffilee amanamummaadhaan deebisaa, yaada qabdan kamiyyuu bilisaan itti dabalaa.

1. Koodii deebii kennaa/kennituu: _____ 3. Koodii Qorataa: _____
2. Koodii gaafataa: _____ 4. Guyyaa af-gaaffii: _____

Kutaa 1: Odeeffannoo Hirmaattotaa

1. Saala: _____ 3. Afaan: _____ 5. Ulfaatina: _____kg
2. Amantii: _____ 4. Dheerina: _____cm
6. Yeroo shaakalaa: Guyyaatti yeroo ≥3 □ Guyyaatti yeroo 1-2 □ Torbanitti yeroo 3-4 □
7. Yeroo dorgommii: Guyyaatti yeroo ≥3 □ Guyyaatti yeroo 1-2 □ Torbanitti yeroo 3-4 □
8. Sadarkaa barnootaa□ Hin baranne □ Barnoota sadarkaa 1ffaa□ Barnoota sadarkaa 2ffaa □ Dippiloomaa/Digirii ykn isaa ol.
9. Waggoota kilabii kubbaa miilaa keessatti hirmaatte: _____.
10. Garee kubbaa miilaa keessatti bakka taphattu: □ Sarara Fuulduraa □ Sarara Gidduu □ Sarara Ittisaa □ Goolii Eegaa
11. Umuriikee: □ 18-22 □ 23-27 □ 28-32 □ 33-37 □ 38 ykn isaa ol.

Kutaa 2: Shaakala Nyaata Taphattoota Kubbaa Miilaa

Gaaffiin kun amala nyaataa taphattoota kubbaa miilaa yeroo ammaa, filannoo nyaataa, itti fayyadama dabalataa, yeroo nyaataa fi to'annoo qooda nyaataa, danqaawwan nyaata fayya qabeessa nyaachuu, fi filannoowwan irratti odeeffannoo walitti qabuuf kan akeekedha. Odeeffannoon walitti qabame yaada nyaataa dhuunfaa ta'e kennuu fi taphattoonni kubbaa miilaa fayyaa fi nageenya waliigalaa akka qabaatan gochuudha. Mee bakka na ilaallata jettee yaaddu

irratti mallattoo **(√)** godhi. Lakkoofsota armaan gadii jalatti mallattoo kaa'i. **5=**Yeroo hunda, **4=**Yeroo baay'ee, **3**=Yeroo tokko tokko, **2=** Yeroo muraasa, **1**=Gonkumaa

Table 14: Gaaffiilee Shaakala Nyaata Taphattoota Kubbaa Miilaa

Gaaffiilee	**Safartuu**				
	1	**2**	**3**	**4**	**5**
1. Yeroo meeqa nyaata madaalawaa fayyadamta?					
2. Guyyaatti yeroo meeqa nyaata salphaa nyaatta?					
3. Sababa hojii baay'ee ykn imala irraa kan ka'e yeroo meeqa nyaata dhiista?					
4. Yeroo meeqa hanqaaquu nyaatta?					
5. Yeroo meeqa bishaan dhugda?					
6. Yeroo meeqa nyaata mana keessaniin alatti nyaatta?					
7. Yeroo meeqa ciree, laaqanaa fi irbaata yeroon nyaatta?					
8. Yeroo meeqa salaaxa paastaa ykn salaaxa makaroonii nyaatta?					
9. Yeroo meeqa boqqolloo fi loozii nyaatta?					

Kutaa 3: Nyaata Taphattootni Kubbaa Miilaa Irra deddeebiin Nyaatan

Seensa

kubbaa miilaa keessatti wanti nyaattu ga'umsa kee fi fayyaa waliigalaa kee keessatti gahee murteessaa qaba. Gaaffiin kun odeeffannoo waa'ee irra deddeebii nyaata keessanii walitti qabuun akkaataa nyaataa keessan caalaatti hubachuuf nu gargaaruu fi soorata gaarii ta'eef gorsa dhuunfaa kennuudhaaf kan akeekedha.

Mee gaaffilee armaan gadii kana amanamummaa fi sirritti deebisiitii bakka na ilaallata jettee yaaddu irratti mallattoo **(√)** godhi. Lakkoofsota armaan gadii jalatti mallattoo kaa'i. **6**(Guyyaatti yeroo 2-4), **5**(Guyyaatti al tokko), **4**(torbanitti yeroo 2-4), **3**(Torbanitti al tokko), **2**(Ji'atti yeroo 13), **1**(Tasumaa)

Table 15: Gaaffiilee Nyaata Taphattootni Kubbaa Miilaa Irra deddeebiin Nyaatan

Gaaffiilee	**Safaruu**					
	1	**2**	**3**	**4**	**5**	**6**
1. Fuduraa (Aappilii, Muuzii, Habaaba, Istiroberii/goraa, Maangoo).						
2. Nyaata Beekamoo (Biddeen Xaafii, Ittoo Lukkuu, Ittoo Misiraa, Raafuu Fooniin, Raafuu Maraa, Foon Diimaa, Kitifoo).						
3. Dhugaatiiwwan (Buna, Shaayii, Wayinii Dammaa, Alkoolii).						
4. Mi'eessituu (Keekii, Doonaatii, Paankeekii, Ayskiriimii).						
5. Oomishaalee Aannani (Aannan, Dhama, Baaduu, Urgoo).						
6. Killee						
7. Dhugaatii Lallaafaa (Faantaa, Kookaa Kollaa, Ispiraayitii, Mirindaa, Soofii, Nigus, Siinq', Peepsii)						
8. Kuduraalee (Salaaxa, Kaarota, Burtukaana, Qullubbii diimaa, Baqelaa, Jinjibila, Timaatima, Qullubbii Adii).						
9. Daabboo, Paastaa, Ruuzii, makaroonii.						
10. Halawa, Mushebek, Chokoleetaa, Saambusaa, Qoloo.						
11. Foon (Bargerii, Nyaata Foonii, Piizaa).						
12. Fuduraalee Juusii (Juusii Burtukaanaa, Juusii Mangoo, Juusii Anaanaasii, Juusii Paappayaa).						

13. Dhangala'oo (Bishaan, Dhugaatii Ispoortii, Dhugaatii Annisaa).						
14. Cooma Fayyaa (Nuugii, Avokaadoo, Zayitii Ejersaa).						
15. Wantoota Ijoo Fi Mi'eessituuwwan (Barbaree, Mitmixaa, Dhadhaa Baqsaa, Aarii/Qimamii).						

Kutaa 4: Beekumsa Nyaataa Kan Taphattoota Kubbaa Miilaa

Akka taphataa kubbaa miilaa tokkootti, waa'ee soorataa fi akkaataa inni ga'umsa kee irratti dhiibbaa uumu beekuun siif barbaachisaa dha. Gaaffiin kun beekumsaa fi hubannoo ati amma qabdu gama soorata adda addaatiin kubbaa miilaa irratti madaaluuf kan akeekedha. Deebiin kees naannoowwan barnoota dabalataa ykn qajeelfama siin barbaachisuu danda'an adda baasuuf nu gargaara.

Maaloo gaaffilee armaan gadii amanamummaa fi sirritti deebisiitii bakka na ilaallata jettee yaaddu irratti mallattoo **(√)** godhi. Lakkoofsota armaan gadii jalatti mallattoo kaa'i. **5**=Cimseen itti walii gala, **4=**Ittin waliigala, **3**=Mirkanaa'aa miti, **2=** Itti walii hin galu, **1**=Cimsee itti walii hin galu

Table 16: Gaaffiilee Beekumsa Nyaataa Kan Taphattoota Kubbaa Miilaa

Gaaffiilee	**Safartuu**					
	1	**2**	**3**	**4**	**5**	**6**
1. Nyaanni tokko kaarboohayidireetiin itti yoo hanqate, coomaa fi pirootiiniin anniisaaf oolu.						
2. Taphataan kubbaa miilaa kanneen taphataa kubbaa miilaa hin taane caalaa pirootiinii baay'ee nyaachuu qaba.						
3. Kaarboohayidireetiin madda anniisaa jalqabaa taphataa kubbaa miilaati.						
4. Pirootiiniin guddina maashaaleetii fi suphaa maashaaleef barbaachisaa dha.						
5. Dammi taphattoota kubbaa miilaatiif madda anniisaa olaanaadha.						
6. Fayyaa gaarii fi ga'umsa ispoortii eeguuf nyaanni madaalawaa ta'e barbaachisaa dha.						
7. Taphataan kubbaa miilaa dorgommii dura nyaata dhangala'aa fi kaarboohayidireetii baay'ee qabu nyaachuu qaba.						
8. Nyaata cooma baay'ee qabu nyaata guyyaa guyyaa keessatti daangessuun dhukkuboota onnee fi ujummoolee dhiigaa irraa nama eega.						
9. Nyaata koo keessatti coomaa fi sukkaara baay'ee nyaachuu irraa ofin qusadha.						
10. Yeroo sochii qaamaa fi dorgommii barbaachisummaa bishaan guutuu (hydration) nan hubadha.						
11. Taphattoonni kubbaa miilaa shaakala soorataa gaarii ta'een ga'umsa ispoortii isaanii guddisuu danda'u.						
12. Akka qaama nyaata guyyaa guyyaa kootti kuduraa fi muduraa adda addaa nan nyaadha.						
13. Coomni taphataa kubbaa miilaatiif nyaata fayya qabeessa ta'ee fi isa barbaachisaa dha.						
14. Dhugaatiiwwan ispoortii yeroo sochii qaamaa fi booda bishaan deebisuuf faayidaa qabaachuu danda'u.						

Kutaa 5: Yeroo soorataa Taphattoota Kubbaa Miilaa

Akka taphataa kubbaa miilaa tokkootti, nyaanni sirrii ta'e ga'umsa gaariif murteessaa akka ta'e beekuun sirraa eegama. Yeroo nyaataa beekuun, dandeettii qaamni kee yeroo shaakalaa fi dorgommiitti qabu guddisuu danda'a. Gaaffiin kun waa'ee amala soorataa fi filannoo keessanii odeeffannoo walitti qabuun fedhii keessan caalaatti hubachuuf nu gargaaruu fi yeroo soorataa keessan akka gaariitti fayyadamuuf yaada dhuunfaa kennuudhaaf kan akeekedha.

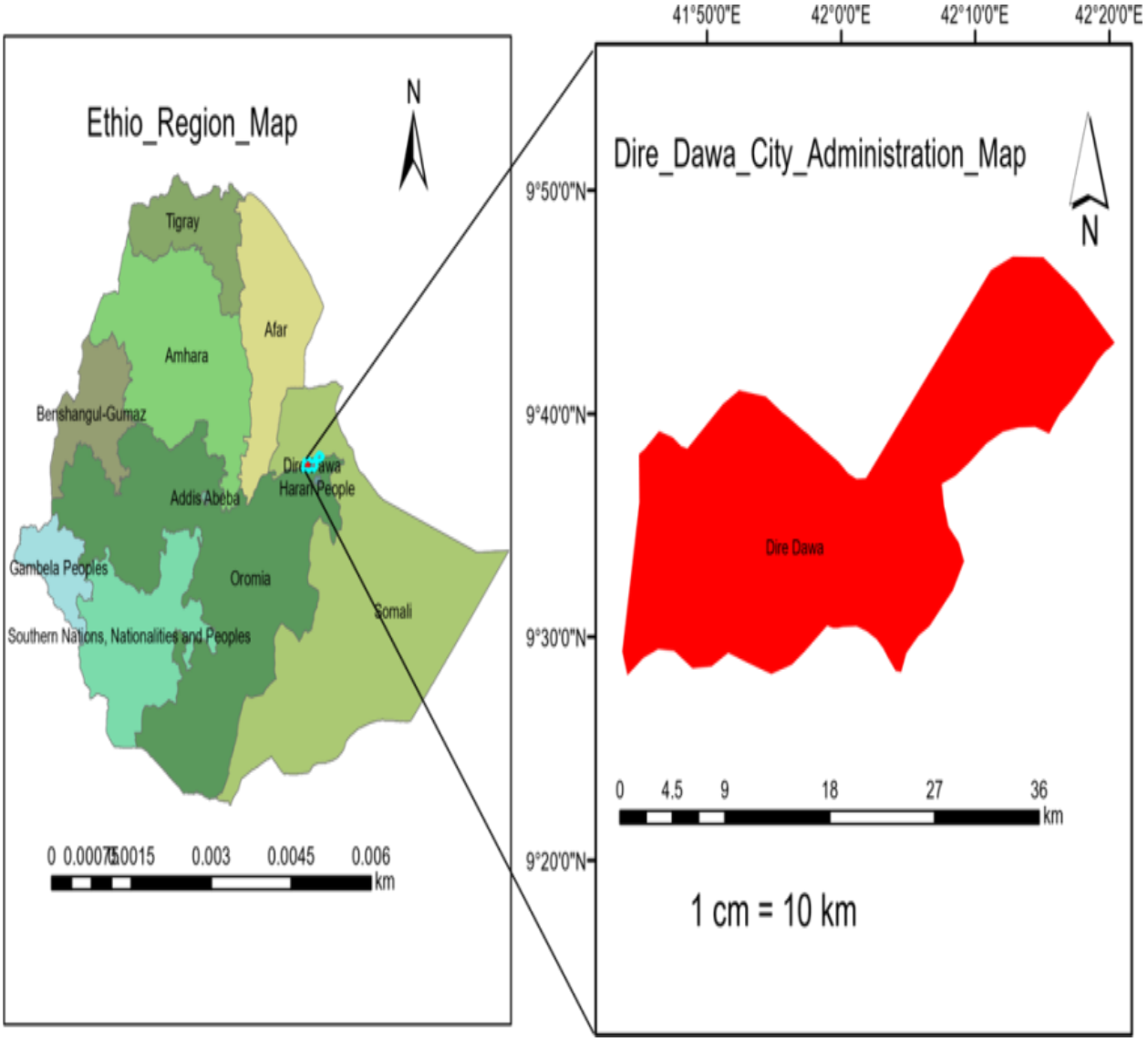
Mee gaaffilee armaan gadii kana amanamummaa fi sirritti deebisuudhaan bakka na ilaallata jettee yaaddu irratti mallattoo **(√)** godhi. Lakkoofsota armaan gadii jalatti mallattoo kaa'i. **5**=Cimseen itti walii gala, **4**= Ittin waliigala, **3=**Mirkanaa'aa miti, **2=** Itti Walii hin galu, **1=**Cimsee Itti walii hin galu

Table 17:Gaaffiilee Yeroo soorataa Taphattoota Kubbaa Miilaa

Gaaffiilee	**Safartuu**					
	1	**2**	**3**	**4**	**5**	**6**
1. Taphataan kubbaa miilaa yeroo leenjii fi dorgommii bishaan dhuguu qaba.						
2. Yeroon dheeraan guyyaa guyyaan bishaan itti dhugdu wantoota akka umurii, ulfaatina qaamaa, haala qilleensaa fi sadarkaa sochii qaamaa irratti hundaa'uun garaagarummaa qabaachuu danda'a.						
3. Dorgommii dura taphataan kubbaa miilaa nyaata kaarboohayidireetii baay'ee qabu nyaachuuf kaayyeffachuu qaba.						
4. Yeroo dorgommii taphataan kubbaa miilaa nyaata dhangala'aa fi cooma baay'ee qabu nyaachuuf kaayyeffachuu qaba.						
5. Dorgommii booda taphataan kubbaa miilaa nyaata maakroo-nuutiriyeentii baay'ee qabu nyaachuuf kaayyeffachuu qaba.						
6. Nyaatni ani sochii qaamaa dura nyaadhu humna naa kennuu fi ga'umsaa taphaakoof na gargaara.						
7. Ani sochii qaamaa booda nyaata jabinaa fi suphaa maashaaleef gargaarun nyaadha.						
8. Sadarkaa anniisaa koo eeguuf guyyaa guutuu yeroo hunda nyaata salphaa nan nyaadha.						
9. Guyyaatti nyaata ijoo 3 (ciree, laaqana, fi irbaata) nyaachuun yeroo tapha kubbaa miilaatti ga'umsa gaarii argamsiisuuf gahaadha jedheen amana.						
10. Tapha kubbaa miilaa booda battalumatti nyaata ykn nyaata salphaa nyaachuun qaamaaf gargaara jedheen amana.						
11. Tapha dura daqiiqaa 30-60tti kaarboohayidireetii nyaachuun sadarkaa anniisaa koo eeguuf gargaara jedheen yaada.						
12. Tapha dura daqiiqaa 15-30tti bishaan dhuguun ykn dhugaatii ispoortii dhuguun bishaan qaama keessaa akka hin hir'anne gargaara jedheen amana.						
13. Yeroo leenjii ganamaatti haala gaariin akkan hojjedhu na gargaaruuf ciree nyaachuuf dursa nan kenna.						
14. Nyaata faayibaraan badhaadhe tapha dura baay'ee nyaachuu irraa ofan qusadha. Sababiin isaas rakkoo bullaa'insa nyaataa fiduu waan danda'uuf.						
15. Karoorri soorata koo sagantaa taphaa fi shaakalaa tokkoon tokkoon isaanii irratti hundaa'uun kan jijjiiramudha.						

APPENDIX E

Map of the study site



Source: ArcGIS 10.7.1 version software

Figure 4: Map of the Dire Dawa City Administration Study Site